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Smart COVID-19 contact tracing application "MyGov" and cultural entrepreneurship in Lesvos

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Abstract

The COVID-19 pandemic accelerated digital transformation across multiple sectors, including the cultural domain. Contact tracing applications emerged as a critical tool for limiting virus transmission, while simultaneously creating new opportunities for cultural entrepreneurship. This paper examines the functionality and effectiveness of such applications, focusing on "myCov," and explores their contribution to the management of cultural activities and the development of innovative business models. Through a comprehensive literature review, the study highlights the role of technology as a resilience and innovation tool within the cultural sector.

Keywords: COVID-19; Contact Tracing; Cultural Entrepreneurship; Digital Innovation; Cultural Tourism

1. Introduction

The COVID-19 pandemic has caused significant social and economic disruptions, particularly affecting sectors that rely on physical presence and interaction, such as culture and tourism. Restrictions on mobility and public gatherings led to the adoption of new digital tools, including contact tracing applications aimed at preventing and controlling the spread of the virus (Ferretti et al., 2020).

The development of such applications extends beyond public health management, opening pathways for cultural innovation and entrepreneurship. These tools can be integrated into cultural venues, museums, festivals, and tourism networks, enhancing visitor trust and safety. Moreover, their use generates valuable data that can be utilized for planning cultural activities and developing new services (Imai et al., 2020; Maniou et al., 2024).

This study investigates the potential implementation of the "myCov" digital platform in Lesvos, analyzing the relationship between digital contact tracing and cultural entrepreneurship through a combination of theoretical analysis, methodology, and empirical research. The article focuses on application functionality, social acceptance, institutional frameworks, and entrepreneurial opportunities in insular contexts.

This approach is situated within the broader framework of digital innovation in cultural destinations, where technology, safety, and visitor experience are interconnected to create sustainable development models. The findings are expected to provide valuable insights into the use of digital tools in local cultural entrepreneurship and enhance the competitiveness of Lesvos as a tourism and cultural destination (Maniou et al., 2024b; Maniou et al., 2025).

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2. Digital Contact Tracing and Technological Approaches

Contact tracing applications primarily rely on low-energy Bluetooth technology, enabling anonymous recording of user interactions without collecting geolocation data (Troncoso et al., 2020). Their adoption has been supported by major technology companies such as Apple and Google and implemented in more than 23 countries (O'Neill, 2020).

The core function of these applications is the early identification of contacts with potential COVID-19 cases, significantly reducing virus transmission and facilitating preventive measures (Ferretti et al., 2020; Imai et al., 2020). However, their effectiveness depends heavily on widespread adoption, trust in data management, and user compliance with notifications (Hargittai et al., 2020; Ferguson, 2020).

Ethical principles, such as voluntary participation and data privacy protection, must be integrated into these applications to ensure social acceptance and technological sustainability (Klar and Lanzerath, 2020). Within the cultural sector, such applications can be used to analyze visitor flows, organize events, and create personalized experiences, thereby enhancing entrepreneurship and innovation (Maniou et al., 2024; Maniou et al., 2025).

Technological infrastructure is a critical factor, especially in island regions where digital connectivity and broadband access may influence application performance. The use of such tools improves visitor management, data collection, and information utilization for strategic cultural planning, creating new opportunities for digital innovation and cultural entrepreneurship.

3. Social Acceptance and Challenges

Social acceptance is a key determinant of the success of contact tracing applications. Studies indicate that citizens' willingness to adopt such technologies is closely linked to trust in managing institutions, transparency in processes, and understanding of technological functions (Hargittai et al., 2020).

At the same time, journalistic and academic sources highlight concerns regarding personal data collection and potential misuse (O'Neill, Ryan-Mosley and Johnson, 2020). The effectiveness of these applications remains under discussion, as their adoption depends on technological infrastructure, digital literacy, and user responsiveness to alerts (Ferguson, 2020).

In the cultural sector, social acceptance becomes even more crucial. Participation in events, festivals, or museum visits through digital platforms depends significantly on visitor trust. The use of "myCov" can enhance this trust by providing safety and improving user experience, while also collecting data to optimize services (Maniou et al., 2024; Maniou et al., 2025).

Acceptance is also influenced by demographic factors such as age, education, and prior experience with health technologies. The implementation of awareness and education strategies can increase user engagement. Ultimately, social trust and voluntary participation are essential for the sustainability of digital tools in insular destinations.

4. Institutional Framework and Data Protection

The development and use of contact tracing applications are governed by strict legal frameworks. Regulation (EU) 2016/679 (GDPR) establishes rules for personal data protection, defining the collection, storage, and processing of information (European Parliament, 2016).

Compliance with this institutional framework is essential for enhancing user trust and ensuring the sustainability of these applications. Examples of cross-border cooperation between countries demonstrate the importance of common technical standards and institutional agreements (Irish Department of Health, 2020).

In the cultural sector, data protection enables the safe organization of events, visitor management, and the provision of personalized services without violating privacy. Applications must ensure voluntary participation, transparency in data collection, and the ability for users to delete their data.

Technology and institutional frameworks must operate synergistically to create a secure and sustainable digital ecosystem that supports both cultural experience and entrepreneurship. Proper legal and technical infrastructure

contributes to the effective use of data for strategic planning and the development of new cultural products (Klar & Lanzerath, 2020).

5. Case Study: Lesvos and the "myCov" Application

Lesvos possesses a rich cultural heritage, including traditional settlements, museums, historical monuments, maritime heritage, and numerous cultural festivals. These characteristics make the island suitable for implementing digital contact tracing tools that support visitor management and safe participation in cultural activities (Maniou et al., 2024b).

The "myCov" platform provides digital certification of participation and visit scheduling, ensuring that visitors can attend events and cultural venues with reduced risk of overcrowding. Through anonymous contact recording, the application enables organizers to identify congestion points and adjust visitor flows across space and time (Maniou et al., 2025).

The collected data can be utilized for strategic cultural planning, service optimization, and the creation of personalized visitor experiences. Additionally, analyzing visitor flows supports the development of innovative cultural tourism services, such as digital tours, augmented reality applications, and personalized event notifications (Maniou et al., 2024).

The integration of digital technology creates opportunities for startups in cultural technology and encourages collaboration between municipalities, cultural institutions, and technology companies. These partnerships can foster an innovation ecosystem linking entrepreneurship, culture, and tourism, thereby promoting sustainable development on the island (Maniou et al., 2025).

Furthermore, the implementation of "myCov" contributes to the concept of a "smart cultural destination," where technology enhances rather than replaces cultural experiences, while also supporting public health management. By leveraging digital data, Lesvos can improve its visibility, increase visitor numbers, and attract new investments in cultural and tourism sectors (Maniou et al., 2024; Maniou, 2024b).

Despite its advantages, several challenges must be addressed. Limited digital infrastructure in certain areas and low levels of digital literacy among parts of the population may hinder adoption. Additionally, compliance with strict data protection regulations (GDPR) requires technical support and user education (Maniou et al., 2025).

Addressing these challenges requires coordinated collaboration among municipalities, cultural stakeholders, and technology providers, alongside investments in digital infrastructure and user education. Effective implementation can lead to sustainable models of cultural entrepreneurship, enhancing local development, innovation, and visitor trust (Maniou, 2024b).

Overall, the case of Lesvos demonstrates that digital contact tracing can act as a catalyst linking technology, culture, and sustainable development, while also providing tools for public health protection and improved visitor experience (Maniou et al., 2025).

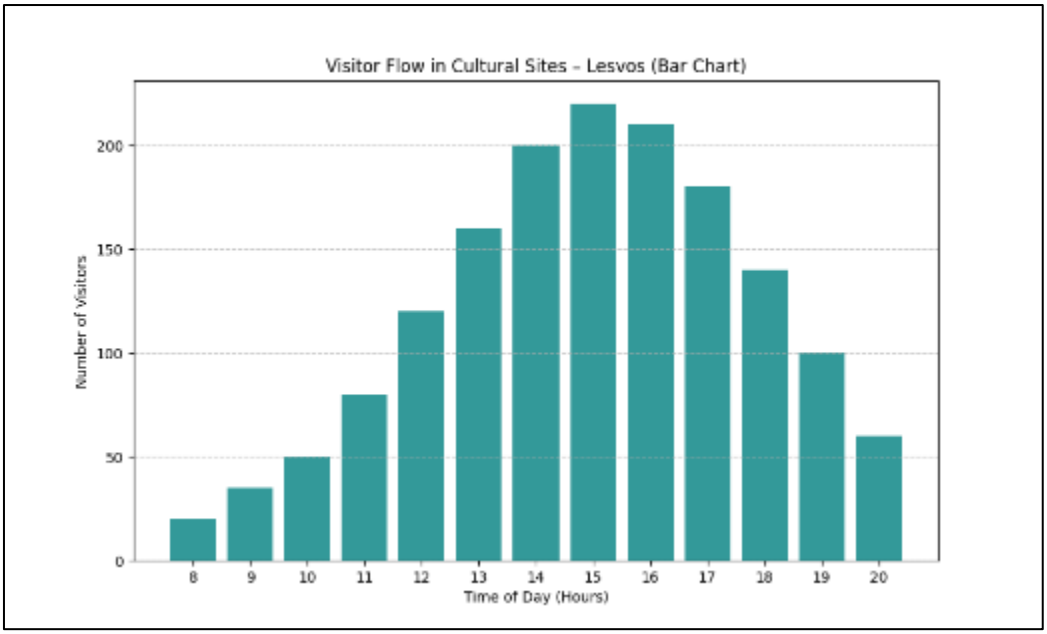

Figure 1 Daily visitor distribution in cultural sites – Lesvos (Bar Chart)

The chart illustrates the number of visitors per hour, highlighting peak and off-peak periods for crowd management and digital scheduling strategies

6. Entrepreneurial Opportunities in Insular Areas

Digital innovation through contact tracing applications such as "myCov" creates new prospects for cultural and tourism entrepreneurship in insular destinations like Lesvos. Opportunities range from the development of startups utilizing visitor data to the creation of digital tour applications and personalized visitor experiences (Maniou et al., 2025; Maniou et al., 2024).

Collaborations among municipalities, cultural institutions, and technology companies enhance service offerings, improve cultural site management, and enable the development of data-driven innovative services. The creation of "smart destinations" can be combined with thematic festivals, literary routes, educational programs, and cultural exhibitions, enhancing the overall visitor experience and attractiveness of the island (Maniou et al., 2024; Maniou et al., 2025).

Monitoring visitor preferences and analyzing data allow real-time planning, more efficient resource management, and a deeper understanding of audience interests. This opens the way for new business models, including cultural management services, digital tourism promotion, and educational applications linking technology and culture (Maniou et al., 2024b; Maniou et al., 2025).

Businesses can also leverage data to develop predictive analytics tools that support decision-making regarding event timing, crowd management, and service optimization. Integrating digital technology into business strategies is directly linked to increased competitiveness and sustainable development (Maniou et al., 2025).

Such tools strengthen the interconnection between tourism, culture, and technology, creating a multidimensional entrepreneurial ecosystem applicable to other islands in the Aegean and the Mediterranean. This model utilizes local cultural heritage while combining safety, technological innovation, and visitor experience into a comprehensive digital cultural entrepreneurship strategy.

The useful and constructive role that digital technologies play in the realm of education for entrepreneurship must now be emphasized. To strengthen the field of entrepreneurial education, we must encourage the use of digital technology across all educational areas. We have to be inspired and adopt paradigms like Mobile devices (21), a range of ICTs (22), AI & STEM ROBOTICS (23-25), and other technologies and paradigms that enable and enhance educational processes like evaluation, intervention, and instruction, which could be embraced and used in entrepreneurial education.

Additionally, the use of ICTs in connection with theories and models of metacognition, mindfulness, and emotional intelligence development [26-29] speeds up and improves educational practices and results, especially for cultural entrepreneurship.

7. Conclusions

This study highlights the significant contribution of digital contact tracing as a tool supporting cultural entrepreneurship in insular destinations, with a focus on Lesvos. The "myCov" application enables safe visitor management, reduces overcrowding, and facilitates data-driven cultural planning.

The integration of digital tools enhances visitor trust, improves user experience, and creates new entrepreneurial opportunities in the cultural and tourism sectors, while also fostering the development of startups and innovative data-driven services.

The success of such applications depends on social acceptance, digital literacy, transparency in data management, and compliance with data protection frameworks. These factors constitute key indicators of sustainability and trust.

The case of Lesvos demonstrates that the integration of technology, culture, and public health can lead to an innovative and sustainable model of cultural development. Digital applications such as "myCov" can transform islands into smart cultural destinations where technology supports entrepreneurship, tourism, and visitor safety.

Furthermore, the analysis of visitor data enables targeted cultural and tourism strategies tailored to audience needs, contributing to personalized experiences and strengthening local entrepreneurship.

Strategic implementation of digital applications in insular areas can serve as a model for other regions, promoting sustainability, innovation, and resilience in cultural and tourism sectors. Key success factors include continuous user education, investment in digital infrastructure, stakeholder collaboration, and the strengthening of local entrepreneurship.

Finally, digital innovation, combined with cultural resource management and adaptation to visitor needs, can act as a catalyst for sustainable and innovative cultural development, reinforcing the link between culture, technology, and public health, and positioning islands as leading models of cultural entrepreneurship in the Mediterranean.

Compliance with ethical standards

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Disclosure of conflict of interest

The Authors proclaim no conflict of interest.

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