

Co-creating a technology-enhanced tourist experience: Portuguese tiles and QR codes

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Objectives | With this communication we intend to present an innovative approach to tourism research, which led to co-creation of a technology-enhanced tourist experience project. From interpretivist philosophical stance and the adoption of the design thinking method resulted a practical story-telling project entitled *Tile Your Visit* (TYV), which offered an innovative experience to tourists visiting Porto, Portugal, while serving as basis for data collection that informed a PhD thesis.

Methodology | TYV project is a result of a creative process informed by the design thinking method (see Cooper et al., 2009; Johansson-Sköldberg et al., 2013; Lockwood, 2009; Verganti, 2009), and it consists of writing tourist experiences into a traditional Portuguese cultural heritage element – the tile – with the support of digital tools. One hundred ceramic tiles were printed with traditional patterns, each containing a unique QR code. A collaboration was then established with 3 hostels in Porto's historic centre, where tourists were interviewed about their experience in the city, which was then written into a tile of their choosing through the QR code. The tiles remain at the hostels, where the interviewed tourists' experiences can be read by scanning the QR codes on the tiles. The narratives are ultimately coded and analysed using a qualitative data analysis software (webQDA). This is a qualitative, social exploratory research that relied on the case study method to collect qualitative data by means of interviews/storytelling, and analyse it combining content, discourse and narrative analyses. Although the approach relies on technological tools, it is important to distinguish it as human-centred – as opposed to technology-driven, and system-centred – as opposed to product-oriented.

Main results and contributions | There is a high acceptance rate when it comes to participating in the TYV project (>90%), and an expression of desire to participate in similar projects in the future. The study finds predominance of tangible lived experiences (e.g., related to architecture, sites, gastronomy – 68%) over the intangible ones (i.e., emotions, feelings – 32%), and maps them according to Pine and Gilmore's 4E model (1998, 1999), Buehring and O'Mahony (2019), and

Cupchik and Hilscher (2008) frameworks. The study brings theoretical, practical and methodological contributions to tourism research and state of the art. Design thinking is demonstrated as a method that can lead to co-creation of transformative, innovative, sustainable, user-centred and experience-centred initiatives (e.g., Brown, 2019; Lockwood, 2009; Serrat, 2017), in the context of project-based learning.

Limitations | This study is exploratory and experimental, hence first of its kind, and limited to a single urban location, i.e., a research area of one cultural heritage site. It would, therefore, be of interest to do follow-up studies at comparable cultural heritage locations, and in the post-pandemic context, since the study was conducted prior to the Covid-19 lockdown.

Conclusions | Exploring interdisciplinary methods and ICT tools in tourism research can lead to innovative advances and rewarding research outcomes. The decisions that led to creation of this research project will, hopefully, serve as an example of technology's great potential in bridging the traditional with modern, in a way that enhances cultures and sheds light on the importance of preserving cultural heritage, instead of replacing it. Additionally, tourist experience increasingly calls for innovation, however one that is mindful, inclusive, sustainable, and respecting of localness, *genius loci* and its social, cultural and historical contexts.

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