

# The Impact of Social Digital Games in Online Communities on Older adults' Digital Competences

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As the World faces unprecedented demographic changes – due to ageing population (WHO 2021), it is needed to rethink policies and practices for Active and Healthy Ageing [AHA] (Bousquet et al. 2015). Moreover, Eurostat (2023) reports a significant increase in popularity of digital technologies by older adults – e.g., social media (Auxier and Anderson 2021) and digital games (ESA 2021). Therefore, new challenges arise in developing digital platforms to allow access to a neglected audience (Nedeljko, Bogataj, and Kaučič 2021) that faces a huge barrier when entering the digital world – i.e., older adults. Nonetheless, both social media – in particular online communities – and digital games present a vast array of benefits for AHA (Sauvé and Kaufman 2019; Nimrod 2014; Wollersheim et al. 2016). When converging these two media, a symbiotic cooperation is developed (Jenkins 2006), emerging a new medium – *social digital games*. Juul (2010) defines it as a game where intentionality and goals are shared while being socially meaningful.

Despite digital games integrated with online communities have already been explored (e.g., Catalá, Julián, and Gil-Gómez 2014; Dhillon, Wünsche, and Lutteroth 2013; Moffatt et al. 2016), the synergy between the two, while targeting older adults' digital competences has not yet been explored to the best of our knowledge. Therefore, and aiming to answer the research question “How can social digital games in online communities impact older adults' digital competences?”, an exploratory, mixed-method, and quasi-experimental study design is required, following a Development Research framework (Maren 2004) divided into three phases. Aligned with three sustainable development goals (SDG#3–Good health and well-being; SDG#4–Quality education; and SDG#10–Reduce Inequalities), the main goals of this research are: (i)

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co-design and develop a social digital game prototype in miOne<sup>1</sup> senior online community; (ii) evaluate the impact of the implemented prototype on older adults' digital competences resorting to DigComp 2.2 Framework (Vuorikari, Kluzer, and Punie 2022); and (iii) produce a model with recommendations for social digital games development to promote acquiring digital competences in online communities.

In phase-1, devoted to analysis and assessment of the context, a systematic literature review on the key topics that ground this research was conducted. Therefore, (i) (social) digital games-related topics were explored, to understand their theoretical constructs and how they can impact older adults' competences; (ii) the ageing context was revisited to characterize worldwide demographic changes, and age-related impairments that can hinder acquiring competences; and (iii) the info-communicating and networking ageing society contexts were also explored, aiming at understanding digital platforms' role in acquiring competences. It was concluded that these three areas are not yet tightly integrated, much less with a focus on stimulating digital competences. Simultaneously, the Data Protection Officer and the Ethics and Deontology Committee of the University of Aveiro were contacted to approve data collection. Moreover, an (inter)national questionnaire was designed to update the characterization of older adults' relationship, habits, and preferences with (social) digital games. Concurrently, a partnership was established with the Senior Institution Laboratório do Envelhecimento<sup>2</sup>.

Phase-2 focuses on participatory conception and co-design of a social digital game. After collecting, analyzing, and triangulating data from Phase-1, game-based activities were designed and started at Laboratório do Envelhecimento, which enabled multiple research developments, including (i) implementation of a questionnaire's first version based on DigComp 2.2 (Lucas et al. 2022), allowing adjustment to older adults' understanding and obtaining a first result before interaction with the to-be-developed prototype; and (ii) understand gaming habits, preferences, and familiarize participants with digital technology, and miOne community, using data collection tools such as interviews, focus groups, creative techniques, and field notes. Additionally, a workshop was conducted with experts and professionals in the ageing field, during which, through creating personas with IBM's Empathic Map (2018) and forced connections creative technique (Oslapas 1993), game-ideation results were collected to later inform prototype design. Currently, with lessons learned and data collected, a prototype is being conceived and designed, focusing on impacting older adults' digital competences. Later, specialists in digital games field will be contacted to validate the prototype and inform on new perspectives.

Phase-3 will focus on implementing the functional version of the prototype in miOne. Subsequently, the prototype will be tested and evaluated by the participants recruited in Phase-1, and a new assessment of the scale defined will be performed – *i.e.*, DigComp 2.2. Moreover, fieldnotes will be registered, and individual or collective interviews will be carried out to complement the data collected. After triangulating the information collected, and comparing the impact through variables of Phases-1 and 3, the research question will be answered and a model with a set of recommendations for developing social digital games in online communities to impact older adults' digital competences will be produced.

Based on all collected data, and expecting to assess the impact of social digital games in online communities on older adults' digital competences, the following results are foreseen: (i) successfully recruit and engage older adults with social digital games and online communities; (ii) have an implemented and functional version of the prototype; and (iii) outline a model of recommendations for developing social digital games in online communities to impact older adults' digital competences. It is also expected to

give an international magnitude to this study since the researcher intends to do a European Ph.D., which will allow developing a product capable of responding to wider audiences' needs.

Lastly, it is believed that this research will bring valuable contributions to Social Sciences and Information and Communication Technologies, giving inputs in four distinct areas: (i) ageing studies; (ii) digital games; (iii) digital platforms – including online communities; and (iv) digital competences acquisition – by reducing some resistance and barriers of use, and associated preconceived ideas.

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## ENDNOTES

<sup>1</sup> The miOne senior online community is being developed with the active participation of older adults, offering a range of communication, health, news, and games services. Available online: <https://mione.altice.pt/> (accessed on 04 January 2023).

<sup>2</sup> *Lit.* "Ageing Lab", available at: <https://www.cm-ilhavo.pt/comunicacao/noticias/noticia/camara-municipal-de-ilhavo-inaugura-laboratorio-do-envelhecimento> (accessed on 14 January 2023).