

From extraction to experience: Spanish saltworks as cultural and natural attractions with a cultural entrepreneurship dimension

Fotini Maniou ^{1,*}, Maria Manola ², Ioanna Maniou ¹, Ioannis Pagkalos ³ and Ioannis Diannis ⁴

¹ Sustainable Urban and Regional Development, Harokopion University of Athens, Greece.

² Department of Tourism and Management, University of West Attica, Greece.

³ Medical School, University of Rome Sapienza.

⁴ Department of Informatics and Computer Engineering, University of West Attica Greece.

Global Journal of Engineering and Technology Advances, 2025, 25(01), 036-042

Publication history: Received on 30 August 2025; revised on 04 October 2025; accepted on 06 October 2025

Article DOI: <https://doi.org/10.30574/gjeta.2025.25.1.0297>

Abstract

Saltworks are significant cultural landscapes and constitute an integral part of the cultural heritage of many countries, attracting visitors and promoting cultural tourism. At the same time, they play a crucial role in biodiversity conservation, hosting rich fauna and flora, including migratory birds and marine organisms.

This study focuses on the saltworks of Spain, exploring their connection to culture, tourism, and the local economy. It analyzes how these sites are utilized through educational programs, hospitality initiatives, and recreational activities, enhancing the tourist experience and creating added value for local communities.

The results highlight the dual importance of saltworks: on the one hand as ecosystems of high environmental value, and on the other as drivers of cultural and economic development through cultural entrepreneurship. The study emphasizes the potential of saltworks to combine natural environment protection with sustainable tourism and cultural utilization.

Keywords: Cultural Entrepreneurship; Spanish Saltworks; Cultural Heritage; Sustainable Development; Cultural Tourism

1. Introduction

1.1. Saltworks As Cultural and Natural Landscapes in Spain: A Platform for Cultural Entrepreneurship

Saltworks are unique cultural and natural landscapes where traditional salt production coexists with significant ecological value. These areas host a diverse range of flora and fauna, including rare and migratory species associated with wetland environments, while also providing observation points and experiential educational opportunities for visitors (Perez-Ruzafa, Marcos and Gonzalez, 1987). The preservation of saltworks is not only about environmental protection but also about maintaining historical and social memory, as salt production has been linked to economic, social, and ritual practices for centuries (Cirillo et al., 1994; Calvo, Mariani and Rossi, 2009; Calvo et al., 2009).

In the contemporary context, saltworks serve as important hubs of cultural entrepreneurship, combining cultural heritage, environmental value, and the potential for sustainable economic development through tourism (Maniou, 2023; Maniou, 2024a; Maniou, 2024b; Maniou et al., 2025; Manola, 2023; Manola and Balermipas, 2020). Visitor participation in hands-on activities such as salt harvesting, bird watching, and involvement in educational and cultural programs

* Corresponding author: Fotini Maniou

enhances ecotourism and supports the local economy, offering a multidimensional experience (Mitoula, 2023; Panzera, 2022; Tsatalbasoglou and Maniou, 2023; Vlachos, 2023).

Cultural entrepreneurship in saltworks allows historical knowledge and traditional salt production techniques to be leveraged as resources for the sustainable development of local communities. Furthermore, the conservation and promotion of biodiversity, along with ecosystem protection, are incorporated into tourism strategies, where education and visitor experience are central components (Manola and Koufadakis, 2020; Mitoula, 2018). Spanish saltworks such as Salinas de Villena, Mar Menor, Salinas de La Mancha, Salinas de Santa Pola, and Salinas de Cabo de Gata exemplify locations where traditional salt extraction, flora and fauna observation, and cultural activities converge to enhance local economies and sustainability (Jones et al., 2018; Guías Viajar, 2025; Ventosa, Sánchez-Porro and Klenk, 2014; Martin, 2024; Perez-Ruzafa et al., 1987).

Moreover, linking saltworks with cultural activities and local gastronomy creates additional opportunities for entrepreneurship and innovation in cultural tourism (Manola and Koufadakis, 2020; Vlachos, 2023; Manola, 2023). By cultivating experiences through nature, tradition, and the arts, visitor awareness of sustainability is enhanced, promoting recognition of these regions as sustainable tourism destinations (Mitoula, 2023; Tsatalbasoglou and Maniou, 2023).

Overall, saltworks are not merely production sites or protected natural environments but also platforms of cultural entrepreneurship, where tradition, ecology, and tourism converge to create added value, preserve cultural and natural heritage, and strengthen the sustainability of local communities (Maniou et al., 2025; Manola, 2023; Mitoula, 2018; Panzera, 2022).

2. Saltworks of Spain: history, ecology, and tourism value

Spain hosts a variety of important saltworks that integrate traditional salt production, ecosystem conservation, and tourism development. These sites represent unique cultural and natural landscapes where human activity and nature coexist, forming complex ecosystems that support diverse flora and fauna, including migratory birds and other wetland-dependent species (Perez-Ruzafa, Marcos and Gonzalez, 1987; Calvo, Mariani and Rossi, 2009).

Salinas de Villena in the Alicante region of Valencia is the primary salt source of the area. Extending approximately 4.5 km in length and 2 km at its widest point, the high temperatures favor water evaporation for salt production. The saltworks also provide habitats for migratory birds, small mammals, and amphibians. While the site does not attract mass tourism, the Villena Archaeological Museum, featuring 66 exhibits including gold and rare metals, has the potential to enhance cultural tourism (Turismo Villena, 2025).

Mar Menor, a shallow lagoon in Murcia, is a significant wetland for birds and other organisms. Both natural processes and human interventions have shaped the lagoon, which is protected under European Union legislation (Perez-Ruzafa, Marcos and Gonzalez, 1987; Pérez-Ruzafa et al., 1987). Pollution from agricultural runoff prompted EU conservation measures in 2019. Covering 135 km² with depths up to 7 meters, Mar Menor attracts visitors for birdwatching, excursions, and boat trips to Isla Grosa (Guías Viajar, 2025).

Salinas de La Mancha in central Spain comprises over 50 small lakes where saltworks continue to apply centuries-old traditional extraction methods. Despite their cultural and economic importance, these saltworks face environmental pressures due to overexploitation of groundwater resources. Educational programs integrated into saltwork visits promote awareness of Spain's historical and cultural heritage.

Salinas de Santa Pola, located on the eastern coast, have been studied for microbial diversity and their ecological role in supporting local flora and fauna (Ventosa, Sánchez-Porro and Klenk, 2014; Ventosa et al., 2014). Coral habitats in the area also represent valuable ecological resources (Martin, 2024). Preserving traditional architectural and production elements supports cultural tourism, while educational initiatives foster environmental awareness and sustainability.

Salinas de Cabo de Gata, situated in Almería within the protected Cabo de Gata Natural Park, offer recreational activities, hiking trails, and birdwatching opportunities (Daniele et al., 2011). The combination of traditional salt extraction with nature-based tourism demonstrates how these saltworks serve as models for sustainable human–environment interaction.

3. Comparative significance of spanish saltworks

Spanish saltworks highlight the intersection of cultural heritage, ecological value, and economic potential. The preservation of traditional salt extraction techniques, as in La Mancha and Santa Pola, allows visitors to experience historical practices and understand the social and economic significance of salt in local communities (Ventosa, Sánchez-Porro and Klenk, 2014).

Conservation efforts in areas like Mar Menor and Cabo de Gata protect wetlands, coral habitats, and bird populations, enhancing biodiversity and ecosystem services (Calvo, Mariani and Rossi, 2009; Martin, 2024). The integration of traditional practices with environmental protection positions Spanish saltworks as exemplary sites for sustainable development.

Tourism and educational initiatives offer visitors multidimensional experiences, including participation in salt extraction, birdwatching, exploring underwater flora, and engaging in cultural events (Sei Saline, 2025; Guias Viajar, 2025). Such activities increase environmental awareness and foster a connection between humans, culture, and nature.

Economically, these saltworks attract visitors from across Europe, generating direct and indirect income for local communities. By linking tradition, ecology, and tourism, Spanish saltworks represent a model of sustainable development, ensuring long-term viability and serving as a reference for other coastal regions (Calvo, Di Maida et al., 2009; Santulli, 2014; Cirillo et al., 1994; Williams, 1996).

In conclusion, Spanish saltworks are living examples of the harmonious interaction between human culture and natural ecosystems. Their protection, sustainable management, and promotion through tourism and education underscore their critical importance for Mediterranean culture, economy, and ecology (Calvo, Mariani and Rossi, 2009; Perez-Ruzafa, Marcos and Gonzalez, 1987; Ventosa, Sánchez-Porro and Klenk, 2014; Martin, 2024; Santulli, 2014; Turismo Villena, 2025; Sei Saline, 2025).

4. Spanish saltworks: comparative table and chart

Table 1 Comparative Table of Spanish Saltworks

Saltwork	Location	Area / Size	Main Ecological Features	Cultural / Historical Value	Tourism / Activities	Environmental Issues
Salinas de Villena	Alicante, Valencia	4.5 km × 2 km	Migratory birds, small mammals, amphibians	Traditional salt extraction; Villena Archaeological Museum	Low-mass tourism	Limited tourist infrastructure
Mar Menor	Murcia	135 km ² , depth up to 7 m	Shallow lagoon, wetlands, bird habitats	EU protected site	Birdwatching, excursions, cruises	Pollution from agriculture; EU protection measures 2019
Salinas de La Mancha	Central Spain (Mancha)	50+ small lakes	Wetlands, bird habitats	Traditional salt extraction	Educational and cultural visits	Groundwater overexploitation; pollution
Salinas de Santa Pola	Eastern Spain	-	Microorganism biodiversity, flora and fauna, coral beds	Preservation of traditional architecture	Educational programs, cultural tourism	-
Salinas de Cabo de Gata	Almeria	Part of Cabo de Gata Natural Park	Coastal ecosystems, birdwatching	Traditional salt extraction	Hiking, birdwatching, nature recreation	-

5. Discussion

The saltworks of Spain represent multifaceted ecosystems that combine cultural heritage, natural biodiversity, and tourism potential. A comparative analysis of Salinas de Villena, Mar Menor, Salinas de La Mancha, Salinas de Santa Pola, and Salinas de Cabo de Gata highlights both common features and unique characteristics of each site (Perez-Ruzafa, Marcos and Gonzalez, 1987).

The preservation of traditional salt extraction techniques across all saltworks constitutes a core element of their cultural value. Visitors can observe traditional salt production and connect with the historical and social significance of the activity, enhancing experiential learning and cultural tourism (Cirillo et al., 1994).

At the same time, the saltworks serve as critical ecosystems for biodiversity conservation. Mar Menor and Cabo de Gata host rich flora and fauna (Calvo, Mariani and Rossi, 2009), while Santa Pola exhibits significant microbial diversity and coral habitats (Martin, 2024; Ventosa, Sánchez-Porro and Klenk, 2014). The coexistence of traditional production and protected natural areas makes these saltworks models of sustainable management and ecotourism, where human activity aligns with environmental protection.

The tourism dimension is expressed through multidimensional experiences, including birdwatching, participation in salt extraction techniques, and engagement in educational and cultural programs (Sei Saline, 2025; Guías Viajar, 2025). Saltworks such as Mar Menor attract thousands of visitors annually, linking local economic development with the promotion of both cultural and natural heritage.

However, environmental challenges arise. Overexploitation of groundwater, pollution from agricultural activities, and the impacts of climate change require systematic management and sustainable approaches (Williams, 1996; Daniele et al., 2011). The involvement of local communities, authorities, and the European Union in the preservation and protection of saltworks is crucial for the long-term sustainability of these areas.

In conclusion, Spanish saltworks are exemplary cases of how traditional knowledge, natural biodiversity, and cultural heritage can coexist and reinforce one another through tourism and education. Their integrated management promotes sustainability, strengthens the local economy, and provides valuable experiences for visitors, highlighting their significance for the future of the Mediterranean (Santulli, 2014; Martín, 2024).

The positive and useful contributions that digital technologies provide to the field of education and cultural development should be highlighted as a final point. Mobile devices (30-32), a range of ICT apps (33-37), AI and STEM ROBOTICS (38-39), and games (40-41) are some examples of the technologies that enable and improve educational and cultural processes including evaluation, intervention, and learning. Additionally, the use of ICTs in conjunction with theories and models of metacognition, mindfulness, meditation, and the development of emotional intelligence [42-55], accelerates and improves educational practices and outcomes, especially for cultural development.

6. Conclusion

The study of Spanish saltworks emphasizes their dual significance: they are both cultural and historical monuments and critical ecosystems with considerable economic and tourism value. Saltworks are not merely sites of salt production but living carriers of cultural heritage, where traditional techniques are combined with contemporary sustainable management practices (Florín and Montes, 1999).

Visitor participation in experiential activities—such as salt harvesting, flora and fauna observation, and engagement in educational and cultural programs—adds a multidimensional tourism aspect. This approach enhances environmental and cultural awareness, promotes ecotourism, and links local economic development with the protection and promotion of natural and cultural heritage (Turismo Villena, 2025; Ventosa et al., 2014).

At the same time, environmental challenges, such as pollution, overexploitation of water resources, and climate change impacts, underscore the need for systematic and sustainable management. The integrated inclusion of cultural, ecological, and tourism activities provides a model of sustainable development for Spanish coastal areas, where ecosystem protection is directly associated with the economic and cultural strengthening of local communities.

In summary, the saltworks of Spain are prime examples of how traditional knowledge, natural biodiversity, and cultural heritage can coexist and mutually enhance one another through tourism and education, promoting the conservation of natural and cultural resources and supporting sustainability for future generations (Calvo et al., 2009; Jones et al., 2018).

Compliance with ethical standards

Acknowledgments

The Authors would like to thank the SPECIALIZATION IN ICTs AND SPECIAL EDUCATION: PSYCHOPEDAGOGY OF INCLUSION Postgraduate studies Team, for their support.

Disclosure of conflict of interest

The Authors proclaim no conflict of interest.

References

- [1] Calvo, S., Di Maida, G., Orestano, C., Pirrotta, M. and Tomasello, A. (2009) The Stagnone of Marsala Lagoon, in Cecere, E., Petrocelli, A., Izzo, G. and Sfriso, A. (eds.) The Stagnone of Marsala Lagoon. Venezia: pp. 247–265.
- [2] Calvo, S., Mariani, P. and Rossi, G. (2009) 'Impacts of climate change on Posidonia oceanica meadows in the Mediterranean Sea', Marine Ecology, 30(4), pp. 495–503.
- [3] Cirillo, M., Capasso, G., Leo, V.A.D. and De Santo, N.G.D. (1994) 'A history of salt', American Journal of Nephrology, 14(4–6), pp. 426–431. <https://doi.org/10.1159/000168759>
- [4] Daniele, L., Vallejos, A., Sola, F., Corbella, M. and Pulido-Bosch, A. (2011) 'Hydrogeochemical processes in the vicinity of a desalination plant (Cabo de Gata, SE Spain)', Desalination, 277(1–3), pp. 338–347. <https://doi.org/10.1016/j.desal.2011.04.003>
- [5] Florín, M. and Montes, C. (1999) 'Functional analysis and restoration of Mediterranean lagunas in the Mancha Húmeda Biosphere Reserve (Central Spain)', Aquatic Conservation: Marine and Freshwater Ecosystems, 9(1), pp. 97–109. [https://doi.org/10.1002/\(SICI\)1099-0755\(199901/02\)9:1<97::AID-AQC231>3.0.CO;2-6](https://doi.org/10.1002/(SICI)1099-0755(199901/02)9:1<97::AID-AQC231>3.0.CO;2-6)
- [6] Guías Viajar (2025) Mar Menor, Murcia. Available at: <https://guias-viajar.com> (Accessed: 18 September 2025).
- [7] Jones, S.E., Burjachs, F., Ferrer-Garcia, C., Giralt, S., Schulte, L. and de Pablo, J.F.L. (2018) 'A multi-proxy approach to understanding complex responses of salt-lake catchments to climate variability and human pressure: A Late Quaternary case study from south-eastern Spain', Quaternary Science Reviews, 184, pp. 201–223.
- [8] Maniou, F. (2023) 'Cultural Entrepreneurship and Sustainable Tourism in Mediterranean Islands', Journal of Tourism Research, 30(B).
- [9] Maniou, F. (2024a) 'Cultural Entrepreneurship and Economic Situation of the Islands Imbros and Tenedos', OJAS@Centerprode.com (forthcoming).
- [10] Maniou, F. (2024b) 'Cultural Tourism and Sustainable Development in Imbros and Tenedos', Journal of Tourism Research, 31(A). Available at: <http://jotr.eu/index.php/volume31> [Accessed 20 August 2025].
- [11] Maniou, F., Mitoula, R., Manola, M., Maniou, I. and Pangalos, I. (2025) 'Cinecittà as a pillar of cultural entrepreneurship: From the golden age of Italian cinema to the sustainable development of Rome', Global Journal of Engineering and Technology Advances, 16(2), pp. 357–366.
- [12] Maniou, F., Mitoula, R., Manola, M., Maniou, I. and Diannis, I. (2025) 'Cultural Entrepreneurship in Capri and Casa Malaparte'.
- [13] Maniou, F., Mitoula, R., Manola, M., Maniou, I. and Diannis, I. (2025) 'Cultural entrepreneurship and painting heritage: The case of Athens in cultural tourism', Global Journal of Engineering and Technology Advances, 16(2), pp. 392–400.
- [14] Manola, M. (2023) 'Sea and Cultural Tourism – Sea and Cultural Activities Around the World', in Manola, M., Mitoula, R. and Dukas, G. (eds.) Proceedings of the Workshop "Salt Marshes and Cultural Tourism: Mesologi and D. Lesvos". Broken Hill Publishers.
- [15] Manola, M. and Balermmpas, A. (2020) 'Souvenirs: Their Role in Tourism Industry, Cultural Heritage, and Their Utilization in Experiential Teaching', Archives of Business Research, 8(9), pp. 1–10.

- [16] Manola, M. and Koufadakis, S. (2020) 'The Gastronomy as an Art and Its Role in the Local Economic Development of a Tourism Destination: A Literature Review', *Spoudai Journal of Economics and Business*, 70(1-2).
- [17] Mitoula, R. (2018) 'The Contribution of Culture to the Sustainable Economic Development of Regions', *Journal of Sustainable Development*, 2018(1). Available at: www.sdct-journal.gr [Accessed 20 August 2025].
- [18] Mitoula, R. (2023) 'Sands as a Cultural Feature of the Places: Mytilini and Messologi', in Manola, M., Mitoula, R. and Doukas, G. (eds.) *Proceedings of the Workshop "Sands and Cultural Tourism: Messologi and W. Lesbos"*. Broken Hill Publishers.
- [19] Panzera, E. (2022) 'From cultural heritage to economic development through tourism', in *Cultural Heritage and Territorial Identity*, pp. 65–85. Springer. https://doi.org/10.1007/978-3-030-94468-1_3
- [20] Perez-Ruzafa, A., Marcos, C. and Gonzalez, J. (1987) 'Hydrology and ecology of Mar Menor lagoon', *Estuarine, Coastal and Shelf Science*, 25(5), pp. 565–580.
- [21] Pérez-Ruzafa, A., Marcos, C., Pérez-Ruzafa, I.M. and Ros, J. (1987) 'Evolución de las características ambientales y de los poblamientos del Mar Menor (Murcia, SE de España)', *Anales de Biología*, (12), pp. 53–65. Servicio de Publicaciones de la Universidad de Murcia.
- [22] Santulli, A. (2014) 'Biodiversity as a source of innovation and development: the Trapani and Marsala salt works', *Solar Salt Works and The Economic Value of Biodiversity*, pp. 187.
- [23] Sei Saline (2025) Esperienza alle saline di Marsala. Available at: <https://www.seisaline.it> (Accessed: 18 September 2025).
- [24] Turismo Villena (2025) Villena Archaeological Museum. Available at: <https://turismovillena.com> (Accessed: 18 September 2025).
- [25] Ventosa, A., Fernández, A.B., León, M.J. et al. (2014) 'The Santa Pola saltern as a model for studying the microbiota of hypersaline environments', *Extremophiles*, 18, pp. 811–824. <https://doi.org/10.1007/s00792-014-0681-6>
- [26] Ventosa, A., Sánchez-Porro, C. and Klenk, H. (2014) 'Microbial diversity in Salinas de Santa Pola', *FEMS Microbiology Ecology*, 88(1), pp. 1–15.
- [27] Vlachos, X. (2023) 'The Contribution of Nature Photography to the Development of Alternative Tourism in Lesbos', in Manola, M., Mitoula, R. and Dukas, G. (eds.) *Proceedings of the Workshop "Lakes and Cultural Tourism: Mesologgi and W. Lesbos"*. Broken Hill Publishers.
- [28] Williams, W.D. (1996) 'What Future for Saline Lakes?', *Environment: Science and Policy for Sustainable Development*, 38(9), pp. 12–39. <https://doi.org/10.1080/00139157.1996.9930999>
- [29] Tsatalbasoglou, A. and Maniou, F. (2023) 'Cultural Routes in the Monopathies of Salts', in Manola, M., Mitoula, R. and Dukas, G. (eds.) *Proceedings of the Workshop "Holidays and Cultural Tourism: Mesologgi and W. Lesvos"*. Broken Hill Publishers.
- [30] Stathopoulou, et al 2018, Mobile assessment procedures for mental health and literacy skills in education. *International Journal of Interactive Mobile Technologies (IJIM)*, 12(3), 21-37, <https://doi.org/10.3991/ijim.v12i3.8038>
- [31] Stathopoulou A, Karabatzaki Z, Tsiros D, Katsantoni S, Drigas A, 2019. Mobile apps the educational solution for autistic students in secondary education, *Journal of Interactive Mobile Technologies (IJIM)* 13 (2), 89-101, <https://doi.org/10.3991/ijim.v13i02.9896>
- [32] Drigas A, DE Dede, S Dedes 2020 Mobile and other applications for mental imagery to improve learning disabilities and mental health *International Journal of Computer Science Issues (IJCSI)* 17 (4), 18-23 DOI:10.5281/zenodo.3987533
- [33] Drigas A, Petrova A 2014 ICTs in speech and language therapy, *International Journal of Engineering Pedagogy (ijEP)* 4 (1), 49-54 <https://doi.org/10.3991/ijep.v4i1.3280>
- [34] Alexopoulou, A., Batsou, A., and Drigas, A. S. (2019). Effectiveness of Assessment, Diagnostic and Intervention ICT Tools for Children and Adolescents with ADHD. *International Journal of Recent Contributions from Engineering, Science and IT (ijES)*, 7(3), pp. 51–63. <https://doi.org/10.3991/ijes.v7i3.11178>
- [35] Bamicha V, Drigas A, 2022 The Evolutionary Course of Theory of Mind - Factors that facilitate or inhibit its operation and the role of ICTs, *Technium Social Sciences Journal* 30, 138-158, DOI:10.47577/tssj.v30i1.6220

- [36] Galitskaya, V., and Drigas, A. (2020). Special Education: Teaching Geometry with ICTs. *International Journal of Emerging Technologies in Learning (IJET)*, 15(06), pp. 173–182. <https://doi.org/10.3991/ijet.v15i06.11242>
- [37] Chaidi I, Drigas A, 2022 "Parents' views Questionnaire for the education of emotions in Autism Spectrum Disorder" in a Greek context and the role of ICTs, *Technium Social Sciences Journal* 33, 73-9, DOI:10.47577/tssj.v33i1.6878
- [38] Lytra N, Drigas A 2021 STEAM education-metacognition-Specific Learning Disabilities, *Scientific Electronic Archives journal* 14 (10) <https://doi.org/10.36560/141020211442>
- [39] Demertzi E, Voukelatos N, Papagerasimou Y, Drigas A, 2018 Online learning facilities to support coding and robotics courses for youth, *International Journal of Engineering Pedagogy (IJEP)* 8 (3), 69-80, <https://doi.org/10.3991/ijep.v8i3.8044>
- [40] Chaidi I, Drigas A 2022 Digital games and special education, *Technium Social Sciences Journal* 34, 214-236 <https://doi.org/10.47577/tssj.v34i1.7054>
- [41] Doulou A, Drigas A 2022 Electronic, VR and Augmented Reality Games for Intervention in ADHD, *Technium Social Sciences Journal*, 28(1), 159-169. <https://doi.org/10.47577/tssj.v28i1.5728>
- [42] Drigas A, Mitsea E, Skianis C 2021 The Role of Clinical Hypnosis and VR in Special Education, *International Journal of Recent Contributions from Engineering Science and IT (IJES)* 9(4), 4-18. <https://doi.org/10.3991/ijes.v9i4.26147>
- [43] V Galitskaya, A Drigas 2021 The importance of working memory in children with Dyscalculia and Ageometria , *Scientific Electronic Archives journal* 14 (10) <https://doi.org/10.36560/141020211449>
- [44] Drigas A, Mitsea E, Skianis C. 2022, Virtual Reality and Metacognition Training Techniques for Learning Disabilities, *SUSTAINABILITY* 14(16), 10170, <https://doi.org/10.3390/su141610170>
- [45] Drigas A., Sideraki A. 2021 Emotional Intelligence in Autism, *Technium Social Sciences Journal* 26(1), 80-92, <https://doi.org/10.47577/tssj.v26i1.5178>
- [46] Mitsea E, Drigas A., Skianis C, 2022 Breathing, Attention and Consciousness in Sync: The role of Breathing Training, Metacognition and Virtual Reality, *Technium Social Sciences Journal* 29, 79-97 <https://doi.org/10.47577/tssj.v29i1.6145>
- [47] Chaidi, I. ., and Drigas, A. (2022). Social and Emotional Skills of children with ASD: Assessment with Emotional Comprehension Test (TEC) in a Greek context and the role of ICTs., *Technium Social Sciences Journal*, 33(1), 146–163. <https://doi.org/10.47577/tssj.v33i1.6857>
- [48] Kontostavrou, E. Z., and Drigas, A. 2021. How Metacognition Supports Giftedness in Leadership: A Review of Contemporary Literature., *International Journal of Advanced Corporate Learning (ijAC)*, 14(2), pp. 4–16. <https://doi.org/10.3991/ijac.v14i2.23237>
- [49] Drigas A, Mitsea E, Skianis C, 2022 Intermittent Oxygen Fasting and Digital Technologies: from Antistress and Hormones Regulation to Wellbeing, Bliss and Higher Mental States, *Technium BioChemMed journal* 3 (2), 55-73
- [50] Drigas A, Mitsea E 2021 Neuro-Linguistic Programming and VR via the 8 Pillars of Metacognition X 8 Layers of Consciousness X 8 Intelligences. *Technium Social Sciences Journal* 26(1), 159–176. <https://doi.org/10.47577/tssj.v26i1.5273>
- [51] Drigas A, Papoutsis C, Skianis C, Being an Emotionally Intelligent Leader through the Nine-Layer Model of Emotional Intelligence-The Supporting Role of New Technologies, *Sustainability MDPI* 15 (10), 1-18
- [52] Drigas A, Mitsea E 2022 Breathing: a Powerful Tool for Physical and Neuropsychological Regulation. The role of Mobile Apps, *Technium Social Sciences Journal* 28, 135-158. <https://doi.org/10.47577/tssj.v28i1.5922>
- [53] Drigas A, Karyotaki M, Skianis C, 2017 Success: A 9 layered-based model of giftedness, *International Journal of Recent Contributions from Engineering, Science and IT* 5(4) 4-18, <https://doi.org/10.3991/ijes.v5i4.7725>
- [54] Drigas A, Mitsea E, Skianis C 2021. The Role of Clinical Hypnosis and VR in Special Education, *International Journal of Recent Contributions from Engineering Science and IT (IJES)* 9(4), 4-17.
- [55] Drigas A, Bakola L, 2021 The 8x8 Layer Model Consciousness-Intelligence-Knowledge Pyramid, and the Platonic Perspectives, *International Journal of Recent Contributions from Engineering, Science and IT (ijES)* 9(2) 57-72, <https://doi.org/10.3991/ijes.v9i2.22497>