4th OPEN-AIR CITIES INTERNATIONAL CONFERENCE "LOCAL, RURAL, REGIONAL SUSTAINABLE DEVELOPMENT & URBAN RECONSTRUCTION"

Book of Abstracts



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4th OPEN-AIR CITIES INTERNATIONAL CONFERENCE - "LOCAL, RURAL, REGIONAL SUSTAINABLE DEVELOPMENT AND URBAN RECONSTRUCTION" - Book of Abstracts

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WELCOME INTRODUCTION

Dear Invited guests, Colleagues and Students,

On behalf of the Scientific and Organizing Committee, we welcome you to the 4th OPEN-AIR CITIES International Conference, organized by Open-Air Cities, HAROKOPIO UNIVERSITY of Athens - Postgraduate Programme "Sustainable Development", Syros Institute and in co-organization: Municipality of Nea Smyrni.

The conference aims to present and disseminate research results related to the Sustainable Development of cities and regions at a global level.

The main subject is the presentation of relevant research in the field of Sustainable Development.

The conference is organized and structured on the four main pillars of Sustainable Development, which in fact are also the main pillars of Urban and Regional Development: Environment, Economy, Society and Culture. Each of these pillars includes its subcategories, which are detailed through the thematic sections related to the 17 Global Goals of Sustainable Development.

The conference brings together many distinguished researchers of Local, Rural and Regional Sustainable Development and Urban Reconstruction from many countries all over the world. Participants have the opportunity to present new research, exchange information, and discuss current issues.

The papers that will be presented at the conference have the possibility to be included in the conference proceedings and to be published in the: a) Sustainable Development, Culture, Traditions Journal (www.sdct-journal.com) (ISSN: 2241-4010), b) GEOGRAPHIES Open Access Journal (MDPI) (scopus indexed), c) STRATEGIC PLANNING OF ENERGY & THE ENVIRONMENT Open Access Journal (RIVER) (scopus indexed) (after their final submission) (Details: https://www.openaircities.org/publication/).

I would like to extend particular thanks to the Deputy Minister of Environment and Energy, Greece, (Spacial Planning and Urban Environment) Maria-Eleni (Marilena) Soukouli-Viliali and the conference Keynote Speakers: Moraitis Konstantinos, Ricardo Iglesias-Pascual, Salvati Luca, Plotnic Olesea, Psycharis Yannis, Lalenis Konstantinos, Kaldi Stavroula, Rodi Alcestis, Angelidis Minas, Kottaridi Constantina, Dimelli Despina, Lava Riva, Konstantinidou Elena, Grigoriadou Maria,.

Also, I would like to thank all the participants, as well as all the colleagues who have prepared the very interesting sessions you will attend at the conference.

I wholeheartedly hope that all participants gain valuable scientific knowledge and find the 4th OPEN-AIR CITIES International Conference an enjoyable and fulfilling experience.



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open air Cities
4th OPEN-AIR CITIES
INTERNATIONAL CONFERENCE
Local, Rural, Regional
Sustainable Development
& Urban Reconstruction
4 - 6 December 2026
Harokopio University of Athens
Organised by:
HAROKOPIO UNIVERSITY OF ATHENS
Postgraduate Programme SUSTAINABLE DEVELOPMENT
SYROS INSTITUTE
MUNICIPALITY OF NEA SMYRNI
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CONCISE CONFERENCE PROGRAMME

1st DAY - Friday 4 December 2026

10:00-10:30	Registration (Harokopio University) (main building)
10.30-11.00	OPENING CEREMONY (Amphitheater: Georgios Karabatzos) (main building)
10.30-13.00	Keynote Speeches (Amphitheater: Georgios Karabatzos) (main building)
13.00-14.00	Conference Lunch - Finger Food
14.00-17.00	Keynote Speeches (Amphitheater: Georgios Karabatzos) (main building)
17.00-17.30	Coffee Break
2. 17.30 - 19.00	Special session: **"SEAS" AND "RIVERS" OF IDEAS** Chaired by **Prof Em. Konstantinos Moraitis** and **Dr. Maria Markatou** (Amphitheater: Georgios Karabatzos) (main building)
3. 19.00 - 20.00	Session: **MNEMOTECHNICS AND URBAN FORMATION: CONVENTIONAL MUSEUMS AND OPEN-AIR LANDSCAPE MUSEOGRAPHY** Chaired by **Prof Em. Konstantinos Moraitis** (Amphitheater: Georgios Karabatzos) (main building)
4. 17.30 - 19.00	Special session: **CO2 CAPTURE AND STORAGE: BRIDGING TECHNOLOGY, SOCIETY AND GOVERNANCE** Chaired by **Dimitrios Mendrinos** and **Dr. Olympia Polyzou** (Room A1) (main building)
5. 19.00 - 20.00	Special session: **MARINE AND LAND SUSTAINABLE ENVIRONMENT** Chaired by **Prof Bitsani Eugenia** and **Prof Koundouri Phoebe** (Room A1) (main building)
6. 17.30 - 18.45	Session: **CULTURAL SUSTAINABILITY AND THE CITY PHYSIOGNOMY** Chaired by **Assoc Prof Katerina Antonopoulou** and **Dr Assist Prof Poli Maria** (Room A2) (main building)
7. 18.45 - 19.00	Session: **SOCIAL SUSTAINABILITY** Chaired by **Prof Rodi Alcestis** and **Lect Vlachadi Maria** (Room A2) (main building)
8. 17.30 - 18.30	Session: **HEALTH AND SUSTAINABILITY** Chaired by **Assist Prof Kalogeropoulos Kleomenis** and **Assist Prof Kontodimopoulos Nikolaos** (Room A5) (main building)
9. 18.30 - 19.30	Special session: **ALTERNATIVE FORMS OF TOURISM AND SUSTAINABLE DEVELOPMENT IN URBAN, RURAL AND ISLAND AREAS** Chaired by **Associate Prof Olga-Eleni Astara** and **Assist Prof Michalis Skordoulis** (Room A5) (main building)

2nd DAY - Saturday 5 December 2026

10. 09.00 - 11.00	Session: **SUSTAINABLE ENVRONMENT, CLIMATE AND CIRCULAR ECONOMY** Chaired by **Prof Qing Yin** and **Prof Zambujal-Oliveira** (Amphitheater: Georgios Karabatzos) (main building)
11. 09.00 - 11.00	Special Session: **SOCIAL DIMENSIONS OF SUSTAINABLE DEVELOPMENT: IMPLICATIONS FOR EDUCATION AND HEALTH** Chaired by **Dr Dologlou Maria** (Room A1) (main building)
12. 09.00 - 11.00	Special session: **LANDSCAPES OF MEMORY: HERITAGE AND RESILIENCE IN CONTEMPORARY CITIES** Chaired by **Assoc Prof Maria Grigoriadou** and **Dr Elena Samourkasidou** (Room A2) (main building)
13. 09.00 - 10.00	Special Session: **"MIND THE GAP": BRIDGING ACADEMIA, PLANNING PRACTICE AND LOCAL IMPLEMENTATION** Chaired by **Lalenis Konstantinos** (Room A5) (main building)
14. 10.00 - 11.00	Special session: **"RUINS FOR ATHENS". REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY** Chaired by **Prof Riva Lava** (Room A5) (main building)
15. 09.00 - 11.00	Session: **ENTREPRENEURSHIP AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Keang Sood Teo** and **Assist Prof Briana Maria** (Room A6) (main building)
11.00-11.30	Coffee Break
16. 11.30 - 14.30	Special session: **ISLANDS IN TRANSITION: INNOVATION, SUSTAINABILITY, TOURISM AND CLIMATE RESILIENCE** Chaired by **Assoc Prof Maria P. Doumi, Assoc Prof Andreas Alexopoulos, Assist Prof Iason-Nikolaos Koufodontis, Assist Prof Ioanna Pagoni, Assist Prof Eleftheria Klontza, Em Prof Angelis Vasilis** (Amphitheater: Georgios Karabatzos) (main building)
17. 11.30 - 13.00	Special session: **CULTURE AND EDUCATION: INTERDISCIPLINARY PATHWAYS TOWARDS SUSTAINABILITY** Chaired by **Anna-Irene Tsatalmpasoglou** and **Foteini Maniou** (Room A1) (main building)
18. 13.00 - 14.30	Special session: **THE CONTRIBUTION OF THE ARMED FORCES TO SUSTAINABLE DEVELOPMENT** Chaired by **Foteini Maniou** (Room A1) (main building)

19. 11.30 - 13.00	Session: **CITY, CULTURE AND SUSTAINABILITY** Chaired by **Prof Madaleno Isabel Maria** and **Prof Moira Maria** (Room A2) (main building)
20. 13.00 - 14.30	Session: **CULTURE AND SUSTAINABLE URBAN TOURISM** Chaired by **Assist Prof Ismyrlis Vasileios** and **Prof Vlassas Grigorios** (Room A2) (main building)
21. 11.30 - 13.00	Session: **SUSTAINABLE RURAL AREAS** Chaired by **Prof Ricardo Iglesias-Pascual** and **Dr Papavasileiou Angelos** (Room A5) (main building)
22. 13.00 - 14.30	Session: **RURAL AREAS AND SUSTAINABLE ENVIRONMENT** Chaired by **Prof Salvati Luca** and **Dr Economou Agisilaos** (Room A5) (main building)
23. 11.30 - 12.45	Session: **TOURISM AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Erdei-Gally Szilvia** and **Assoc Prof Sdrali Despoina** (Room A6) (main building)
24. 12.45 - 14.30	Session: **SUSTAINABLE BUILDINGS AND INFRASTRACTURES** Chaired by **Prof Angelidis Minas** and **Dr Karametou Panagiota** (Room A6) (main building)
14.30-15.30	Conference Lunch - Finger Food
25. 15.30 - 16.30	Session: **URBAN RESILIENCE** Chaired by **Prof Eleni Sardianou** and **Dr Karytsas Spyridon** (Room A1) (main building)
26. 16.30 - 18.00	Special session: **AI, GEOAI, AND AR FOR LANDSCAPE PLANNING AND SUSTAINABILITY** Chaired by **Dr.Dr.Fivos Papadimitriou** (Room A1) (main building)
27. 15.30 - 18.00	Special session: **EDUCATION AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Kaldi Stavroula** and **Dr Nastos Georgios** (Room A2) (main building)
28. 15.30 - 17.00	Special session: **SUSTAINABLE REGIONAL DEVELOPMENT, GOVERNANCE AND COHERENCE** Chaired by **Prof Manasakis Constantine** and **Dr Dulufakis N. Evangelos** (Room A4) (main building)
29. 17.00 - 18.00	Special session: **FIRE SERVICE AND SUSTAINABLE DEVELOPMENT** Chaired by **Antonios Maniatis** (Room A4) (main building)
30. 15.30 - 18.00	Special session: **SUSTAINABLE URBAN DEVELOPMENT** Chaired by **Prof Varelidis George** and **Assoc Prof Kostakis Ioannis** (Room A5) (main building)

31. 09.00 - 11.00	Special session: **TOWARDS A HUMAN-CENTRED AI ERA - SOCIAL AND ENVIRONMENTAL SUSTAINABILITY, EMERGING TECHNOLOGIES AND EUROPEAN POLICIES: CHALLENGES, BEST PRACTICES AND FUTURE DIRECTIONS** Chaired by **Dr Vassilis Bokolas, Assoc Prof Andrea Colantoni, Assist Prof Stavros Kaperonis, Dr Efi Ntrouva** (Ceremony Hall) (New Library Building)

3rd DAY - Sunday 6 December 2026

32. 10.30 - 12.00	Online session: **EDUCATION AND SUSTAINABLE DEVELOPMENT** Chaired by **Assist Prof Pavlakis Manos** and **Dr Georgios Nastos**
33. 12.00 - 15.00	Online session: **SUSTAINABLE URBAN DEVELOPMENT, ENVIRONMENT, CULTURE AND NEW TECHNOLOGIES** Chaired by **Prof Nguyen Trung Luan** and **Dr Angelos Papavasileiou**
34. 15.00 - 17.00	Online session: **SUSTAINABLE TOURISM, SUSTAINABLE LOCAL DEVELOPMENT AND NATURAL DISASTERS** Chaired by **Prof Vukadinović Simonida** and **Dr Economou Agisilaos**

Closing of the Conference

KEYNOTE SPEAKERS



Moraitis Konstantinos

Professor, National Technical University of Athens

"PARTICIPATORY URBAN PROPOSALS: MATERIAL ENVIRONMETALLY FOCUSED COEXISTANCE AND POSSIBLE HYBRID APPROACHES"



Ricardo Iglesias-Pascual

Assoc Professor, Pablo de Olavide University

"SOCIO-ENVIRONMENTAL JUSTICE FROM THE MEDITERRANEAN TO EUROPE AND BEYOND"



Salvati Luca

Professor, Sapienza University of Rome

"MULTIDISCIPLINARY PARADIGMS BETWEEN SCIENCE AND POLICY. POSITIVE AND NORMATIVE APPROACHES FOR THE ANALYSIS OF COMPLEX ECONOMY AND ENVIRONMENTAL SYSTEMS."



Plotnic Olesea
Professor, Moldova State University

"JUSTICE, SUSTAINABILITY AND EU INTEGRATION: LEGAL PATHWAYS FOR CONSUMER-CENRED LOCAL AND REGIONAL DEVELOPMENT"



Psycharis Yannis
Professor, Panteion University of Social and Political Sciences

"SOCIOECONOMIC AND DEMOGRAPHIC CONDITIONS AND HEALTH INEQUALITIES ACROSS ATHENS METROPOLITAN AREA DURING THE PANDEMIC: LESSON LEARNED AND POLICY IMPLICATIONS"



Lalenis Konstantinos
Professor, University of Thessaly

"PLANNING AGAINST THE CLOCK: INSTITUTIONAL FRAMEWORK, NEW PLANNING TOOL AND THE RETREAT OF CONSULTATION IN THE "KONSTANTINOS DOXIADIS" URBAN PLANNING REFORM PROGRAMME"



Kaldi Stavroula
Professor, University of Thessaly

"CHILDREN AS AGENTS OF SUSTAINABLE CITIES: POLITICAL AGENCY, EDUCATION AND THE GreenComp FRAMEWORK"



Rodi Alcestis
Professor, University of Patras

"FROM IDEAL TO REAL: REVISITING URBAN UTOPIAS IN THE AGE OF SUSTAINABLE CITIES "



Angelidis Minas
Professor, National Technical University of Athens

"PRIMARY SECTOR, RURAL AREAS AND SUSTAINABLE DEVELOPMENT"



Kottaridi Constantina
Professor, University of Piraeus
"FROM CIRCULAR ECONOMY TO REGIONAL RESILIENCE: BUILDING COMPETITIVE AND SUSTAINABLE LOCAL ECONOMIES "



Dimelli Despina
Professor, Technical University of Crete
"HOUSING IN HISTORIC CITIES: COMPARING HOUSING PRESSURES AND URBAN TRANSFORMATION IN GREEK AND EUROPEAN HISTORIC CITIES"



Lava Riva
Professor, National Technical University of Athens
"RUINS for Athens - REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY"



Konstantinidou Elena
Professor, National Technical University of Athens
"THE MEMORY OF PLACES AND SUSTAINABLE HERITAGE: RETHINKING HISTORIC SETTLEMENTS THROUGH CONTINUITY, CHANGE AND LIVED EXPERIENCE"



Grigoriadou Maria
Assoc Professor, Democritus University of Thrace
"FROM INDUSTRIAL MEMORY TO COLLECTIVE LIVNG: THE ADAPTIVE REUSE OF TOBACCO WEREHOUSES IN THE CONTEMPORARY CITY"



Joseph Stefanou
Em. Professor, National Technical University of Athens
"CITIES PHYSIOGNOMY"

CONFERENCE SCHEDULE

10:00-10:30 **Registration** (Harokopio University) (main building)

10.30-11.00 Welcome introduction by **Prof. Roido Mitoula**, Dean, School of Environment, Geography and Applied Economics, Harokopio University of Athens, Head of Postgraduate Program "Sustainable Development", Chair of the Organising & Scientific Committee

Prof George Dedoussis, Rector of Harokopio University of Athens

Maria-Eleni (Marilena) Soukouli-Viliali, Deputy Minister of Environment and Energy, Greece, (Spacial Planning and Urban Environment)

Georgios Koutelakis, Mayor of the Municipality of Nea Smyrni

Prof Konstantinos Moraitis, Syros Institute

1.	**Keynote Speeches**
11.00-13.00	Chaired by Prof Malindretos Georgios and Dr Economou Agisilaos (Amphitheater: Georgios Karabatzos) (main building)
11.00-11.20	PARTICIPATORY URBAN PROPOSALS: MATERIAL ENVIRONMETALLY FOCUSED COEXISTANCE AND POSSIBLE HYBRID APPROACHES (E02031) **Moraitis Konstantinos**, Professor Emeritus, National Technical University of Athens
11.20-11.40	SOCIO-ENVIRONMENTAL JUSTICE FROM THE MEDITERRANEAN TO EUROPE AND BEYOND (E02126) **Ricardo Iglesias-Pascual**, Assoc Professor, Pablo de Olavide University
11.40-12.00	MULTIDISCIPLINARY PARADIGMS BETWEEN SCIENCE AND POLICY. POSITIVE AND NORMATIVE APPROACHES FOR THE ANALYSIS OF COMPLEX ECONOMY AND ENVIRONMENTAL SYSTEMS. (E02254) **Salvati Luca,** Professor, Sapienza University of Rome
12.00-12.20	JUSTICE, SUSTAINABILITY AND EU INTEGRATION: LEGAL PATHWAYS FOR CONSUMER-CENRED LOCAL AND REGIONAL DEVELOPMENT (E02217) **Plotnic Olesea**, Professor, Moldova State University
12.20-12.40	SOCIOECONOMIC AND DEMOGRAPHIC CONDITIONS AND HEALTH INEQUALITIES ACROSS ATHENS METROPOLITAN AREA DURING THE PANDEMIC: LESSON LEARNED AND POLICY IMPLICATIONS (E02247) **Psycharis Yannis**, Professor, Panteion University of Social and Political Sciences
12.40-13.00	PLANNING AGAINST THE CLOCK: INSTITUTIONAL FRAMEWORK, NEW PLANNING TOOL AND THE RETREAT OF CONSULTATION IN THE "KONSTANTINOS DOXIADIS" URBAN PLANNING REFORM PROGRAMME (E02037) **Lalenis Konstantinos**, Professor, University of Thessaly
13.00-14.00	Conference Lunch - Finger Food

1.	**Keynote Speeches**
14.00-17.00	Chaired by Prof Abeliotis Konstantinos and Anagnostopoulos Konstantinos (Amphitheater: Georgios Karabatzos) (main building)
14.00-14.20	CHILDREN AS AGENTS OF SUSTAINABLE CITIES: POLITICAL AGENCY, EDUCATION AND THE GreenComp FRAMEWORK (E02216) **Kaldi Stavroula,** Professor, University of Thessaly

14.20-14.40	FROM IDEAL TO REAL: REVISITING URBAN UTOPIAS IN THE AGE OF SUSTAINABLE CITIES (E02248) **Rodi Alcestis**, Professor, University of Patras
14.40-15.00	PRIMARY SECTOR, RURAL AREAS AND SUSTAINABLE DEVELOPMENT (E02032) **Angelidis Minas**, Professor Emeritus, National Technical University of Athens
15.00-15.20	FROM CIRCULAR ECONOMY TO REGIONAL RESILIENCE: BUILDING COMPETITIVE AND SUSTAINABLE LOCAL ECONOMIES (E02213) **Kottaridi Constantina**, Professor, University of Piraeus
15.20-15.40	HOUSING IN HISTORIC CITIES: COMPARING HOUSING PRESSURES AND URBAN TRANSFORMATION IN GREEK AND EUROPEAN HISTORIC CITIES (E02105) **Dimelli Despina**, Professor, Technical University of Crete
15.40-16.00	RUINS for Athens - REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY (E02111) **Lava Riva**, Professor, National Technical University of Athens
16.00-16.20	THE MEMORY OF PLACES AND SUSTAINABLE HERITAGE: RETHINKING HISTORIC SETTLEMENTS THROUGH CONTINUITY, CHANGE AND LIVED EXPERIENCE (E02225) **Konstantinidou Elena**, Professor, National Technical University of Athens
16.20-16.40	FROM INDUSTRIAL MEMORY TO COLLECTIVE LIVNG: THE ADAPTIVE REUSE OF TOBACCO WEREHOUSES IN THE CONTEMPORARY CITY (E02236) **Grigoriadou Maria**, Assoc. Professor, Democritus University of Thrace
16.40-17.00	Discussion

17.00-17.30	Coffee Break

2. 17.30 - 19.00	Special session: **"SEAS" AND "RIVERS" OF IDEAS** Chaired by **Prof Em. Konstantinos Moraitis** and **Dr. Maria Markatou** (Amphitheater: Georgios Karabatzos) (main building)
17.30- 17.45	"SEAS" AND "RIVERS" OF IDEAS: IN REFERENCE TO THE HELLENIC AND MEDITERRANEAN "WATERSCAPE" (E02214) **Moraitis Konstantinos**
17.45-18.00	SPATIAL PLANNING AND SOCIAL JUSTICE: MISLEADING PRACTICES AND DEPARTURE FROM THE PRINCIPLES OF THE "SUSTAINABLE AGENDA" (E02164) **Themou Monika, Markou Maria**
18.00-18.15	WE ARE ALL DESIGNERS: PERMACULTURE AS A FRAMEWORK FOR APPROACHING THE LANDSCAPE (E02210) **Vallianatou Voutsina Elena**
18.15-18.30	EXPLORING THE SMALL FORTIFIED SETTLEMENTS: SUSTAINABILITY, ACCESSIBILTY, HERITAGE CONSERVATION & DIGITAL TOOLS. THE CASE STUDY OF FOLEGANDROS, CYCLADES (E02174) **Katraouzou Dimitra**
18.30-18.45	ARCITECTURAL DESIGN & GENERATIVE AI (E02229) **Thomas Thomas**
18.45-19.00	FROM LEFTOVER TO LIVED IN: TERRAIN VAGUES OF LAPRAKA AS NEIGHBOURHOOD SOCIAL INFRASTRUCTURE (E02170) **Odeta Manahasa, Laora Ferati, Edmond Manahasa**

3. 19.00 - 20.00	Session: **MNEMOTECHNICS AND URBAN FORMATION: CONVENTIONAL MUSEUMS AND OPEN-AIR LANDSCAPE MUSEOGRAPHY** Chaired by **Prof Em. Konstantinos Moraitis** (Amphitheater: Georgios Karabatzos) (main building)
19.00-19.15	MNEMOTECHNICS AND PLACE FORMATION: CONVENTIONAL MUSEUMS AND OPEN-AIR (E02215) **Moraitis Konstantinos**
19.15-19.30	SELECTIVE COLLECTIVE MEMORY: THE OTTOMAN MENTZITION OF THE PARTHENON (E02117) **Lambrinou Lena**
19.30-19.45	THE MYTH OF EFYRA. REGENERATION OF THE COASTAL FRONT IN KALAMIA, CORINTH. (E02178) **Nikolaou Dimitra**
19.45-20.00	Discussion

4. 17.30 - 19.00	Special session: **CO2 CAPTURE AND STORAGE: BRIDGING TECHNOLOGY, SOCIETY AND GOVERNANCE** Chaired by **Dimitrios Mendrinos** and **Dr. Olympia Polyzou** (Room A1) (main building)
17.30- 17.45	SOCIETAL RISK GOVERNANCE STRATEGIES FOR CAPTURE, TRANSPORT, STORAGE, AND MONITORING OF CARBON DIOXIDE IN GREECE (E02047) **Mendrinos Dimitrios, Karytsas Spyridon, Oikonomou I. Theoni, Sprenkeling Marit, Terpstra Eva, Rambharos Shanita, Bannister Andrew, Wilkerson Brooke, Henrik Litlere Bentsen, Otto Danny**
17.45-18.00	CITIZENS' PERCEPTIONS REGARDING THE CAPTURE, TRANSPORT, STORAGE, AND MONITORING OF CARBON DIOXIDE IN GREECE (E02048) **Karytsas Spyridon, Mendrinos Dimitrios, Oikonomou I. Theoni, Sprenkeling Marit, Terpstra Eva, Rambharos Shanita, Bannister Andrew, Wilkerson Brooke, Henrik Litlere Bentsen, Otto Danny**
18.00-18.15	CARBON CAPTURE AND STORAGE TECHNOLOGY CHAIN PERCEPTIONS IN GERMANY: ISSUES OF DECARBONISATION JUSTICE (E02099) **Otto Danny, Mock Ricarda, Weinberger Annika, Sprenkeling Marit, Terpstra Eva, Rambharos Shanita, Mendrinos Dimitrios, Karytsas Spyridon, Oikonomou I. Theoni, Bannister Andrew, Wilkerson Brooke, Henrik Litlere Bentsen, Gross Matthias**
18.15-18.30	CITIZEN BEHAVIOUR AND FACTORS INFLUENCING THE ADOPTION OF CIRCULAR ECONOMY CONSTRUCTION PRODUCTS: A CASE STUDY FOR GREECE (E02119) **Oikonomou I. Theoni, Karytsas Spyridon, Kostakis Ioannis, Lima Ana Teresa, Karytsas Constantine, Theodoropoulou Eleni**
18.30-18.45	SOCIETAL INTEGRATION FRAMEWORK FOR TECHNOLOGY DEVELOPMENT OF CCU E-FUELS (E02127) **Mendrinos Dimitrios, Polyzou Olympia, Karytsas Spyridon, Oikonomou I. Theoni, Choropanitis John**
18.45-19.00	THE SHEETS "SORBENT BASED PROCESSES FOR HIGHLY EFFICIENT AND COMPACT CO_2 CAPTURE TECHNOLOGIES" PROJECT (E02134) **Polyzou Olympia, Oikonomou I. Theoni , Choropanitis Ioannis, Mendrinos Dimitrios, Karytsas Spyridon, Lind Anna, Bonneau Mickaële, Wickman Clara, Ibrahim Maya, Michon Thomas**

5. 19.00 - 20.00	Special session: **MARINE AND LAND SUSTAINABLE ENVIRONMENT** Chaired by **Prof Bitsani Eugenia** and **Prof Koundouri Phoebe** (Room A1) (main building)
19.00-19.15	RISK PERCEPTION AND GOVERNANCE IN THE CONTEXT OF ENVIRONMENTAL CRISIS: A CASE STUDY OF THE MASS FISHKILL IN THE PORT OF VOLOS IN 2024 (E02233) **Leventaki Myrto**
19.15-19.30	MAPPING A BIOCULTURAL SEA ROUTE: LIGHTHOUSES AND SHIPYARDS AS TANGIBLE MARITIME HERITAGE FROM THE SARONIC TO THE MESSINIAN GULF (E02081) **Thymi Isidora, Bitsani Eugenia**
19.30-19.45	THE CONSEPT OF ECOSYSTEM SERVICES IN MUNICIPAL GENERAL PLANS: EVIDENCE FROM POLISH SPATIAL PLANNING LAW (E02086) **Brzezińska-Rawa Anna**
19.45-20.00	Discussion

6. 17.30 - 18.45	Session: **CULTURAL SUSTAINABILITY AND THE CITY PHYSIOGNOMY** Chaired by **Assoc Prof Katerina Antonopoulou** and **Dr Assist Prof Poli Maria** (Room A2) (main building)
17.30- 17.45	THE FORMATION OF THE PHYSIOGNOMY OF THE CITY EPIDAURUS THE OPINION OF RESIDENTS AND VISITORS (E02238) **Ioannou Stefani**
17.45-18.00	THE PHYSIOGNOMY OF NAXOS, GREECE: LOCAL IDENTITY AND CHALLENGES FOR SUSTAINABLE DEVELOPMENT (E02241) **Argyriou Dimitra**
18.00-18.15	THE FORMATION OF THE PHYSIOGNOMY OF THE CITY OF AMFISSA. THE OPINION OF RESIDENTS AND VISITORS. (E02243) **Fouseki Eirini**
18.15-18.30	THE ORACLE OF DELPHI AS A PILLAR OF ANCIENT HISTOR: CULTURAL HERITAGE AND ITS CONTRIBUTION TO REGIONAL DEVELOPMENT (E02030) **Christou Dimitris**
18.30-18.45	READING ANO SYROS THROUGH WATER: LANDSCAPE, MEMORY AND HERITAGE ALONG A CULTURAL ROUTE (E02160) **Eleftheraki Georgia, Sougioltzi Aikaterini, Vamvakousi Evgenia**

7. 18.45 - 19.00	Session: **SOCIAL SUSTAINABILITY** Chaired by **Prof Rodi Alcestis** and **Lect Vlachadi Maria** (Room A2) (main building)
18.45-19.00	MIGRATION-REFUGEE MANAGEMENT POLICIES: THE ROLE OF LOCAL GOVERNMENT (E02066) **Vlachadi Maria, Xouris Nikolaos**
19.00-19.15	SUSTAINABLE AND ACCESSIBLE DESIGN: GREEN ENERGY AND SUSTAINABILITY IN HEALTHCARE ENVIRONMENT FOR PEOPLE WITH DISABILITIES (E02072) **Poli Maria, Zoumpopoulou Foteini, Maniou Fotini, Griva Maria, Papadaki Kalliopi, Maniou Ioanna**
19.15-19.30	EKISTICS AND DISABILITY: CONNECTING IDEAS, DESIGN AND PLANNING DEBATES (E02072) **Tomou Niovi, Rodi Alcestis**

19.30-19.45	EVALUATING EMPLOYMENT OUTCOMES FOLLOWING PARTICIPATION IN AN E-MENTORING PROGRAMME AMONG VULNERABLE GROUPS (E02156) **Spyridaki Aikaterini, Papadakaki Maria, Vassilakis Kostas, Markakis George**
19.45-20.00	BEYOND ADDICTION RECOVERY: SOCIAL AND OCCUPATIONAL REINTEGRATION AS A DIMENSION OF SOCIAL SUSTAINABILITY IN GREECE (E02242) **Belegri Chrysoula, Karametou Panagiota, Sdrali Despina**

8. 17.30 - 18.30	Session: **HEALTH AND SUSTAINABILITY** Chaired by **Assist Prof Kalogeropoulos Kleomenis** and **Assist Prof Kontodimopoulos Nikolaos** (Room A5) (main building)
17.30- 17.45	GENERO CROTON Y SU ACTIVIDAD ANTIOXIDANTE FRENTE AL ESTRES OXIDATIVO: EVIDENCIA EXPERIMENTAL, VIGILANCIA TECHNOLOGICA Y OPORTUNIDAD DE DISENO BIOMEDICO (E02028) **Laura Valentina Poveda Rodríguez, Daniel Santiago Calderón Rodríguez**
17.45-18.00	PUBLIC HOSPITAL EXPENDITURE AND SERVICE UTILIZATION IN GREECE: IMPLICATIONS FOR SUSTAINABLE AND RESILIENT HEALTH INFRASTRUCTURE (E02087) **Nassi Margarita, Roussos Sotirios, Papadatou Eleni, Kontodimopoulos Nikolaos**
18.00-18.15	FROM FLOOD SIMULATION TO URBAN RESILIENCE. ASSESSING ROAD NETWORK VULNERABILITY AND HEALTHCARE ACCESSIBILITY IN ARGOSTOLI, KEFALONIA (E02089) **Kountach Al Alexandros, Tsigdinos Stefanos, Feloni G. Elissavet, Tsatsaris Andreas, Kalogeropoulos Kleomenis**
18.15-18.30	BEYOND SAFE SWALLOWING: TEXTURE MODIFICATION, NUTRITIONAL ADEQUACY AND SUSTAINABLE NUTRITION IN PAEDIATRIC DYSPHAGIA - IMPLICATIONS FOR CLIMATE AND ENVIRONMENTAL SUSTAINABILITY (E02186) **Kritikos Antonis, Baritaki Maria, Bampa Charalampia**

9. 18.30 - 19.30	Special session: **ALTERNATIVE FORMS OF TOURISM AND SUSTAINABLE DEVELOPMENT IN URBAN, RURAL AND ISLAND AREAS** Chaired by **Associate Prof Olga-Eleni Astara** and **Assist Prof Michalis Skordoulis** (Room A5) (main building)
18.30-18.45	EDUCATIONAL TOURISM AND MUSEUMS: CONDITIONS FOR MEANINGFUL LEARNING(E02245) **Astara Olga-Eleni, Papaioannou Georgios**
18.45-19.00	SUSTAINABLE CULTURAL TOURISM & ACCESSIBILITY. CASE STUDY ACROPOLIS MUSEUM. (E02246) **Kanellaki Anna, Astara Olga-Eleni, Skordoulis Michalis**
19.00-19.15	CONSUMER BEHAVIOUR TOWARDS ORGANIC AND NATURAL BEVERAGES: CASE STUDY ON MOUNTAIN ICED TEA (E02083) **Dimpali Areti, Panagiotakopoulou Konstantina**
19.15-19.30	NEUROFRIENDLY GREECE: NEURODIVERSITY AND SOCIAL SUSTAINABILITY IN GREEK TOURISM (E02211) **Meleki Stefania Vrisıs, Skordoulis Michail, Athanasopoulou Christina, Astara Olga Eleni**
19.30-19.45	EXPERIENCING ACCESSIBILITY IN PUBLIC SPACE: A MIXED-METHODS ANALYSIS OF SURVEY DATA AND USER-GENERATED CONTENT IN CORFU (E02211) **Poulimenou Sofia Maria, Vogklis Konstantinos, Beneki Christina** (online)
19.45-20.00	Discussion

2nd DAY - Saturday 5 December 2026

10. 09.00 - 11.00	Session: **SUSTAINABLE ENVRONMENT, CLIMATE AND CIRCULAR ECONOMY** Chaired by **Prof Qing Yin** and **Prof Zambujal-Oliveira** (Amphitheater: Georgios Karabatzos) (main building)
09.00-09.15	SUMMER BENEFIT, WINTER LIABILITY: TESTING MORPHOLOGY TRANSFERABILITY ACROSS CHINA'S CLIMATES (E02061) **Jiahua Li, Yufan Lai, Yuhan Piao, Peiqi Shen, Qing Yin**
09.15-09.30	EFFECTIVE CARBON REDUCTION AMID THE TRADE-OFF BETWEEN ENERGY EFFICIENCY AND ENERGY DEPENDENCY (E02064) **Thomaidou Foteini**
09.30-09.45	ELECTING FINANCING STRATEGIES FOR CIRCULAR REAL ESTATE DEVELOPMENT UNDER UNCERTAINTY: AN AHP–REAL OPTIONS–TOPSIS APPROACH (E02076) **Zambujal-Oliveira João, Anelli Debora**
09.45-10.00	LEGAL ASPECTS OF CONSUMER PROTECTION THROUGH THE LENS OF THE CIRCULAR ECONOMY WITHIN ENTREPRENEURIAL ACTIVITY: METHODOLOGY, STATE OF RESEARCH AND THE IMPACT OF DIGITALIZATION (E02100) **Sergiu Coreţchi**
10.00-10.15	THE VALUATION IMPLICATIONS OF ENVIRONMENTAL SDG ENGAGEMENT: A TEMPORAL ANALYSIS (E02227) **Tampakoudis Ioannis, Moustaka Soultana**
10.15-10.30	AN INTEGRATION OF UPCYCLING CONSTRACTION WOOD WASTE THROUGH DIGITAL FABRICATION: A SUSTAINABLE AND SCALABLE CIRCULAR FRAMEWORK FOR INDIA (E02228) **Shirin Shahrbandi, Himanshu Kasera**
10.30-10.45	FROM ENVIRONMENTAL AWARENESS TO EDUCATIONAL PRACTICE: EXPLORING THE PERCEPTION-ACTION GAP IN EDUCATION FOR SUSTAINABLE DEVELOPMENT (E02224) **Loupas Efstathios, Martinis Aristotelis**
10.45-11.00	PHYSICAL CHEMISTRY HELPS CIRCULAR ECONOMY: FROM PYROLYSIS RESIDUES TO IMPROVEMENT OF BITUMENS IN ROAD PAVEMENT TECHNOLOGY (E02129) **Calandra Pietro**

11.00-11.30	Coffee Break

11. 09.00 - 11.00	Special Session: **SOCIAL DIMENSIONS OF SUSTAINABLE DEVELOPMENT: IMPLICATIONS FOR EDUCATION AND HEALTH** Chaired by **Dr Dologlou Maria** (Room A1) (main building)
09.00-09.15	FILM - BASED ENVIRONMENTAL EDUCATION AND THE SOCIAL DIMENSIONS OF SUSTAINABLE DEVELOPMENT: A PARTICIPATORY PEDAGOGICAL FRAMEWORK FOR SCHOOLS (E02108) **Anastasopoulou Elisavet**
09.15-09.30	ACTIVE ENVIRONMENTS FOR HEALTHIER LIVES: A MINISTRY OF ENVIRONMENT AND ENERGY CASE STUDY (GREECE) (E02135) **Paraskevopoulou Louiza, Velagia Maria**
09.30-09.45	FROM SUSTAINABLE LEADERSHIP TO SUSTAINABLE CITIES: EXPLORING EMPLOYEES' URBAN SUSTAINABILITY ATTITUDES (E02144) **Dologlou Maria, Mitoula Roido**

09.45-10.00	SUSTAINABLE LEADERSHIP AND EMPLOYEE WELL-BEING: EXPLORING THEIR RELATIONSHIP THROUGH A SOCIAL SUSTAINABILITY LENS (E02145) **Dologlou Maria, Mitoula Roido**
10.00-10.15	EMOTIONAL INTELLIGENCE AND ORGANIC SENSORY FUNCTION OF THE SCHOOL PRINCIPAL- "LEADER" IN RELATION TO SUSTAINABLE DEVELOPMENT (E02151) **Chatziangelaki Dimitra**
10.15-10.30	SOCIAL SUSTAINABILITY IN EDUCATION: FROM EQUAL ACCESS TO MEANINGFUL PARTICIPATION AND BELONGING (E02155) **Anargyrou Aikaterini**
10.30-10.45	DIGITAL EDUCATIONAL LEADERSHIP AND ARTIFICIAL INTELLIGENCE AS CATALYSTS FOR SUSTAINABLE LOCAL DEVELOPMENT: A RESEARCH IN PROGRESS FROM THE GREEK EDUCATIONAL SYSTEM (E02033) **Papanis Efstratios, Gioumouki E. Maria**
10.45-11.00	Discussion

11.00-11.30	Coffee Break

12. 09.00 - 11.00	Special session: **LANDSCAPES OF MEMORY: HERITAGE AND RESILIENCE IN CONTEMPORARY CITIES** Chaired by **Assoc Prof Maria Grigoriadou** and **Dr Elena Samourkasidou** (Room A2) (main building)
09.00-09.15	ARCHITECTURES OF INVISIBILITY IN HERITAGE SITES: EARTH-SHELTERED AND TOPOGRAPHICALLY INTEGRATED PUBLIC INFRASTRUCTURE AS STRATEGIES FOR SUSTAINABLE CONSERVATION AND RESILIENCE (E02091) **Kalampalikis V. Nikolaos, Samourkasidou Elena**
09.15-09.30	MANAGEMENT PLAN OF CULTURAL HERITAGE AND SUSTAINABLE DEVELOPMENT; THE CASE OF ANCIENT GREEK THEATRE (E02136) **Nastou P. Marina Panagiota, Zerefos C. Stelios, Samourkasidou Elena**
09.30-09.45	REFRAMING PORT LANDSCAPES AS MEMORYSCAPES: RECONNECTING COLLECTIVE MEMORY, PLACE IDENTITY AND URBAN RESILIENCE (E02161) **Samourkasidou Elena**
09.45-10.00	ADAPTIVE REUSE OF THE EOK TOBACCO FACTORY IN KAVALA: SOCIAL HOUSING, INDUSTRIAL MEMORY AND URBAN RESILIENCE THROUGH A.I. (E02185) **Polychronopoulos Dimitris, Grigoriadou Maria, Dendrinos Stavros, Kapandriti Anastasia, Samourkasidou Elena, Gkogka Eirini, Zeka Vasileia, Zoumpoulidou Anna**
10.00-10.15	THE LENS' CULTURE: PHOTOGRAPHY AS CRITICAL THINKING AND A VISUAL DIARY OF CHANGING URBAN LANDSCAPES (E02204) **Polychronopoulos Dimitris**
10.15-10.30	SCHOOL ROUTES AS CATALYSTS FOR SUSTAINABLE URBAN MOBILITY AND CHILD-FRIENDLY URBAN ENVIRONMENTS (E02148) **Samourkasidou Elena, Nikolaos V. Kalampalikis**
10.30-10.45	THE TRANSFORMATION OF DRAMA THROUGH ITS TOBACCO WAREHOUSES: NEGLECT, URBAN VOIDS AND ADAPTIVE REUSE (E02187) **Kouveli Aikaterini, Grigoriadou Maria Alexandra** (online)
10.45-11.00	Discussion

11.00-11.30	Coffee Break

13. 09.00 - 10.00	Special Session: **"MIND THE GAP": BRIDGING ACADEMIA, PLANNING PRACTICE AND LOCAL IMPLEMENTATION** Chaired by **Lalenis Konstantinos** (Room A5) (main building)
09.00-09.15	THE RIGHT TO THE CITY OF THE DEAD (E02056) **Polymenidis M. Yannis**
09.15-09.30	CORRUPTION IN PLANNING AND LAND DEVELOPMENT IN GREECE: THE NEVER-ENDINNG FIGHT WITH LERNAEAN HYDRA (E02067) **Lalenis Konstantinos**
09.30-09.45	TRANSFER OF DEVELOPMENT RIGHTS IN GREECE: THE GREEK FRAMEWORK IN COMPARATIVE PERSPECTIVE ON LAND-USE PLANNING, PROPERTY RIGHTS, AND NON-MONETARY COMPENSATION (E02154) **Zygouri Foteini**
09.45-10.00	SUSTAINABLE MOBILITY AND RURAL RESILIENCE: INTEGRATING LAND-USE AND TRANSPORT PLANNING IN A SHRINKING MOUNTAINOUS AREA – THE CASE OF STAVROUPOLI, XANTHI, GREECE (E02208) **Verani Eleni, Charalampoglou Maria, Lalenis Konstantinos**

14. 10.00 - 11.00	Special session: **"RUINS FOR ATHENS". REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY** Chaired by **Prof Riva Lava** (Room A5) (main building)
10.00-10.15	INSIDE – OUTSIDE: RUIN IN TRANSITION. A SUBTLE INTERVENTION ON FILOPAPPOU HILL (E02113) **Koukounouri Aristea Evangelia**
10.15-10.30	RUINS for Athens: A CRITICAL EXERCISE IN INTERDISCIPLINARY, PARTICIPATORY AND MULTI-STAKEHOLDER DESIGN. (E02137) **Giannakopoulou Ioanna** (online)
10.30-10.45	RUINS° FOR ATHENS – EMBEDDING UNIVERSAL ACCESSIBILITY AND "DESIGN FOR ALL" IN HISTORICAL URBAN TOPOGRAPHIES: INTEGRATING PHYSICAL MOBILITY, MULTI-SENSORY PERCEPTIBILITY AND CIRCULAR PUBLIC SPACE INTERVENTIONS (E02172) **Papanikolaou Eleni, Karagiannakis Panos**
10.45-11.00	BEYOND AESTHETICS: THE VALUE OF HIGH QUALITY ARCHITECTURAL FACADE DESIGN (E02192) **Vernadou Emmanouela – Pagona, Lava Riva**

11.00-11.30	Coffee Break

15. 09.00 - 11.00	Session: **ENTREPRENEURSHIP AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Keang Sood Teo** and **Assist Prof Briana Maria** (Room A6) (main building)
09.00-09.15	FAMILY STABILITY AS A MISSING PILLAR OF SUSTAINABLE LOCAL ECONMIC DEVELOPMENT: RETHINKING FAMILY BUSINESS CONTINUITY IN UGANDA (E02065) **Dickson Tumuramye**
09.15-09.30	COLLECTIVE SALES AS A LEGAL INSTRUMENT IN FACILITATING URBAN REGENERATION IN SINGAPORE (E02077) **Keang Sood Teo**
09.30-09.45	CHALLENGES OF SUSTAINABLE AND GREEN REGENERATION OF INDUSTRIAL BROWNFIELDS: A CASE STUDY IN PIRAEUS, GREECE (E02112) **Koronakou Elisavet, Tousi Evgenia, Kourniatis Nikolaos, Pnevmatikos Nikolaos**

09.45-10.00	AI-ENABLED DEMAND PLANNING FOR SUSTAINABLE URBAN SUPPLY CHAINS: A CONCEPTUAL FRAMEWORK FOR SUSTAINABLE URBAN DEVELOPMENT (E02140) **Malindretos George, Rekleitis Nikos**
10.00-10.15	TRACKING URBAN POLYCENTRISM OVER FORTY YEARS: RANK-SIZE AND SPATIAL ECONOMETRIC EVIDENCE FROM ITALY'S LABOUR MARKET AREAS (1981–2021) (E02173) **Sara D'Aristotile**
10.15-10.30	MARKET ACCEPTANCE OF SUSTAINABLE AVIATION FUELS: WILLINGNESS TO PAY AND PRICE SENSITIVITY ACROSS EIGHT EUROPEAN COUNTRIES (E02209) **Karytsas Spyridon, Briana Maria, Christou Myrsini**
10.30-10.45	THE ROLE OF ENVIRONMENTAL AWARENESS IN SUSTAINABLE CONSUMER CHOICES: EVIDENCE FROM THE RETAIL SECTOR (E02232) **Pentheroudaki Eirini, Malindretos George, Sardianou Eleni, Kostakis Ioannis**
10.45-11.00	Discussion

11.00-11.30	Coffee Break

16. 11.30 - 14.30	Special session: **ISLANDS IN TRANSITION: INNOVATION, SUSTAINABILITY, TOURISM AND CLIMATE RESILIENCE** Chaired by **Assoc Prof Maria P. Doumi, Assoc Prof Andreas Alexopoulos, Assist Prof Iason-Nikolaos Koufodontis, Assist Prof Ioanna Pagoni, Assist Prof Eleftheria Klontza, Em Prof Angelis Vasilis** (Amphitheater: Georgios Karabatzos) (main building)
11.30-11.45	ANTICIPATORY CAPACITY IN NATIONAL STRATEGIC PLANNING FOR FOSTERING SUSTAINABLE URBAN AND REGIONAL DEVELOPMENT: A GREECE - FINLAND COMPARATIVE STUDY (E02193) **Afentaki Maria, Alexopoulos Andreas**
11.45-12.00	MEASURING URBAN RESILIENCE AS A BASIS FOR STRATEGIC URBAN PLANNING: A FRAMEWORK FOR GREEK CITIES (E02194) **Bithas George, Angelis Vasilis**
12.00-12.15	DECENTRALIZED CIRCULAR SOLUTIONS FOR WASTE MANAGEMENT IN TOURISTIC ISLANDS FOSTERING COMMUNITY CO-CREATION AND DIGITAL COLLABORATION (E02195) **Klontza Eleftheria, Orfanou Athanasia, Lekkas F. Demetris**
12.15-12.30	WINE GEOGRAPHICAL INDICATIONS AND TOURISM INTENSITY ACROSS EUROPEAN ISLAND DESTINATIONS: A COMPARATIVE SPATIAL ANALYSIS (E02196) **Koufodontis Iason, Doumi Maria, Gaki Eleni, Stampelos Xenofon**
12.30-12.45	FROM POTENTIAL TO VALUE: A DIAGNOSTIC FRAMEWORK FOR INTEGRATING SMALL-SCALE AGRICULTURE INTO TOURISM VALUE CHAINS (E02197) **Koutsouradi Argyro, Doumi Maria, Stampelos Xenofon**
12.45-13.00	TRIPARTITE COLLABORATIVE GOVERNANCE FOR ISLAND TRANSITION (E02198) **Koutsouradi Myrsinia, Doumi Maria**
13.00-13.15	MANAGING BUSINESS TRANSFORMATION CHALLENGES IN TOURISM SERVICE ECOSYSTEMS (E02199) **Kutsikos Konstadinos, Bithas George, Angelis Vasilis, Doumi Maria**
13.15-13.30	A STOCHASTIC MARKOVIAN MODEL FOR CARGO CRANE AVAILABILITY AND FAILURE COSTS IN BULK CARRIER UNLOADING OPERATIONS (E02200) **Mennis Vangelis, Doumi Maria, Platis Agapios**

13.30-13.45	THE CONTRIBUTION OF THE WASTE GENERATION FACTOR TO THE CARBON FOOTPRINT OF THE HOSPITALITY INDUSTRY (E02201) **Orfanou Athanasia, Klontza Eleftheria, Vakalis Stergios, Voukkali Irene, Zorpas Antonis, Lekkas F. Demetris**
13.45-14.00	THE IMPACT OF LARGE-SCALE URBAN REGENERATION ON SUSTAINABLE URBAN DEVELOPMENT: THE CASE OF THE MUNICIPALITY OF ELLINIKO - ARGYROUPOLI IN GREECE (E02202) **Stavrou Agni, Alexopoulos Andreas, Angelis Vasilis, Fois Christos, Skordoulis Michalis**
14.00-14.15	THE BLIND SPOT IN THE SAFETY NET: NON-VISIBLE DISABILITIES IN INCLUSIVE AND RESILIENT GREEK ISLAND TOURISM (E02203) **Vellios Ioannis, Doumi P. Maria, Angelis Vasilis**
14.15-14.30	Discussion

14.30-15.30	Conference Lunch - Finger Food

17. 11.30 - 13.00	Special session: **CULTURE AND EDUCATION: INTERDISCIPLINARY PATHWAYS TOWARDS SUSTAINABILITY** Chaired by **Anna-Irene Tsatalmpasoglou** and **Foteini Maniou** (Room A1) (main building)
11.30-11.45	FROM ENTREPRENEURSHIP TO SUSTAINABLE TOURISM DEVELOPMENT: THE CASE OF LUISA SPAGNOLI AND PERUGIA (E02038) **Tsatalmpasoglou Anna-Irini, Maniou Fotini, Koltsikoglou Georgios, Manola Maria, Mitoula Roido, Karagianni Vilma**
11.45-12.00	THE USE OF THE CULTURAL DIMENSION IN THE TEACHING OF ITALIAN AS A FOREIGN LANGUAGE AND ITS CONTRIBUTION TO SUSTAINABLE EDUCATIONAL DEVELOPMENT: A PRELIMINARY STUDY IN GREEK HIGHER EDUCATION (E02044) **Drakouli Athanasia, Tsatalmpasoglou Anna-Irini, Grivaki Despoina**
12.00-12.15	TOURISM TERMINOLOGY AS AN EDUCATIONAL TOOL FOR SUSTAINABLE TOURISM: A PRELIMINARY CURRICULUM-BASED STUDY IN GREEK HIGHER EDUCATION (E02054) **Grivaki Despoina**
12.15-12.30	EDUCATION FOR SUSTAINABILITY IN KINDERGARTEN: LEARNING THROUGH ACTION (E02057) **Kremmyda Ifigeneia**
12.30-12.45	THE LEGASY OF ITALIAN RULE IN RHODES AS A RESOURCE FOR SUSTAINABLE CULTURAL TOURISM: RESIDENTS' PERCEPTIONS (E02060) **Koltsikoglou Georgios, Tsatalbassoglou Anna Eirini, Archavli Chrysi-Efraimia, Manola Maria, Kamaroudis Stavros, Spadidakis Ioannis**
12.45-13.00	CREATIVE WRITING AND CHILDREN'S LITERATURE AS EDUCATIONAL TOOLS FOR SUSTAINABLE DEVELOPMENT: FOSTERING CREATIVITY AND ECOLOGICAL AWARENESS (E02070) **Mitropoulou Mina, Maniou Fotini**

18. 13.00 - 14.30	Special session: **THE CONTRIBUTION OF THE ARMED FORCES TO SUSTAINABLE DEVELOPMENT** Chaired by **Foteini Maniou** (Room A1) (main building)
13.00-13.15	DEFENCE AND SUSTAINABLE DEVELOPMENT IN GREECE: A LITERATURE REVIEW OF ECONOMIC, SOCIAL, AND ENVIRONMENTAL IMPACTS (E02063) **Nentas Dimitrios, Maniou Fotini, Manola Maria, Ntalianis Klimis**
13.15-13.30	FROM FOLK CULTURE TO CULTURAL ENTREPRENEURSHIP: THE CASE OF THE WOMENS' AGRITOURISM COOPERATIVE OF MESOTOPOS, LESVOS (E02074) **Konstantidelli Artemis, Maniou Fotini**
13.30-13.45	FUNDING MODELS AND THE DEVELOPMENT OF THE DEFENCE INNOVATION ECOSYSTEM: THE ROLE OF HCDI AND CONTEMPORARY FUNDING PROGRAMMES (E02075) **Toulitsi Christina, Maniou Fotini**
13.45-14.00	FROM THE TRIREME TO THE MODERN FRIGATE: THE DESIGN AND EVOLUTION OF GREEK NAVAL POWER (E02102) **Sotiropoulou Pinelopi, Maniou Fotini, Poli Maria, Maniou Ioanna, Manola Maria, Papadomanolaki Maria**
14.00-14.15	THE LEGACY OF PHILANTHROPISTS AND BENEFACTORS IN GREECE'S HISTORICAL AND CULTURAL HERITAGE: LASKARINA BOUBOULINA AND HER ROLE IN THE NAVAL STRUGGLE OF 1821 (E02103) **Damvakeraki Anthi, Maniou Fotini, Poli Maria, Maniou Ioanna, Sotiropoulou Pinelopi, Manola Maria, Papadomanolaki Maria**
14.15-14.30	GEOPOLITICS AND SUSTAINABLE DEVELOPMENT IN THE AEGEAN SEA: THE IMPACT OF MARITIME DISPUTES ON ENVIRONMENTAL GOVERNANCE (E02090) **Xafelis Ioannis** (online)

14.30-15.30	Conference Lunch - Finger Food

19. 11.30 - 13.00	Session: **CITY, CULTURE AND SUSTAINABILITY** Chaired by **Prof Madaleno Isabel Maria** and **Prof Moira Maria** (Room A2) (main building)
11.30-11.45	FROM FRAGMENTED MEMORY SITES TO A SUSTAINABLE URBAN HERITAGE NETWORK: THE CASE OF 1940s METROPOLITAN ATHENS (E02058) **Anagnostou Ellie, Karachalis Nikolaos**
11.45-12.00	SYMBOLIC URBAN LANDMARKS IN THE MUNICIPALITY OF HERAKLION, ATTICA: TRACING HISTORICAL, ARCHITECTURAL AND SPATIAL MEMORY THROUGH THE CULTURAL LAYERS OF THE PAST (E02138) **Moira Maria, Alifragkis Stavros, Nikiforaki Charoula**
12.00-12.15	ARCHITECTURAL HERITAGE AND HISTORICAL IDENTITY UNDER SPECIAL PROTECTION REGIMES: KASTORIA IN THE CONTEXT OF SUSTAINABLE URBAN DEVELOPMENT (E02163) **Kalergis Dimitrios, Nikoli Anastasia**
12.15-12.30	SUSTAINABILITY CLAIMS AND ALTERNATIVE DISPUTE RESOLUTION ALONG MOLDOVA'S CULTURAL ROUTES (E02239) **Lazăr Diana**
12.30-12.45	TRACES OF PIRATES IN MANI: A DIGITAL CULTURAL INTERPRETATION EXPERIENCE THROUGH AN INTERACTIVE GAME (E02184) **Michelakou Areti**
12.45-13.00	THE DIGITAL PROMOTION OF NAFPLIO CITY CULTURE IDENTITY (E02258) **Stouri Vasiliki**

20. 13.00 - 14.30	Session: **CULTURE AND SUSTAINABLE URBAN TOURISM** Chaired by **Assist Prof Ismyrlis Vasileios** and **Prof Vlassas Grigorios** (Room A2) (main building)
13.00-13.15	FREDERIC BOISSONNAS'S PHOTOGRAPHS: PROMOTING GREEK TOURISM IN THE EARLY 20th CENTURY (E02039) **Vlassas Vasileios, Tsilimpolou Vasiliki, Karampelas Konstantinos, Vlassas Grigorios**
13.15-13.30	THE IMPACT OF WAR PHOTOGRAPHY ON NEWSPAPER FRONT PAGES ON THE DEVELOPMENT AND TOURISM OF CONFLICT ZONES. THE CASES OF PALESTINE AND UKRAINE (E02055) **Karampelas Konstantinos, Vlassas Vasileios, Metzitakos Rossetos**
13.30-13.45	THE ROLE OF ISO STANDARDS IN ACHIEVING SDG 12 IN THE TOURISM INDUSTRY (E02040) **Ismyrlis Vasileios**
13.45-14.00	MACHINE LEARNING APPROACHES FOR PREDICTING GENTRIFICATION: THE GAP IN TOURIST GENTRIFICATION PREDICTION (E02041) **Bousdeki Maria, Dimopoulou Efi**
14.00-14.15	MARTIM MONIZ SQUARE: TOURISTIC PLACE OR TOURISMOPHOBIA PUBLIC ENVIRONMENT, A CASE STUDY FOR THE MUNICIPALITY OF LISBON, PORTUGAL (E02114) **Madaleno Isabel Maria**
14.15-14.30	TERRAIN VAGUE THROUGH THE LENS: PHOTOGRAPHIC MEDIATIONS OF URBAN VOIDS (E02165) **Mersida Ndrevataj**

14.30-15.30	Conference Lunch - Finger Food

21. 11.30 - 13.00	Session: **SUSTAINABLE RURAL AREAS** Chaired by **Prof Ricardo Iglesias-Pascual** and **Dr Papavasileiou Angelos** (Room A5) (main building)
11.30-11.45	INTEGRATING INDIGENOUS KNOWLEDGE PRACTICES FOR SUSTAINABLE CROP PRODUCTION INTENSIFICATION: A CASE STUDY OF SMALLHOLDER FARMERS IN EASTERN UGANDA (E02043) **Haumba Eric Nelson, Dr Mzwandile Shongwe**
11.45-12.00	RURAL POPULATION MOBILITY AND SETTLEMENT RESTRUCTURING IN SEVERE-COLD NORTHEAST CHINA: HISTORICAL TRAJECTORIES, REGIONAL DIFFERENTIATION, AND A TYPOLOGICAL FRAMEWORK FOR SUSTAINABLE RURAL DEVELOPMENT (E02069) **Qing Yin, Yuhan Piao, Jiahua Li, Peiqi Shen**
12.00-12.15	LAND OF COCOA - IHÉUS, CITY OF BAHIA, IN THE TIME OF JORGE AMADO AND TODAY (E02118) **Madaleno Isabel**
12.15-12.30	CHILDREN, FORESTS, AND SUSTAINABLE RURAL AREAS: INTERGENERATIONAL STEWARDSHIP IN RURAL UGANDA (E02206) **Tumwebaze Jonathan**
12.30-12.45	CLIMATE VARIABILITY AND VEGETATIN RESPONSE IN PELION AND COMARCA DE KA SIDRA DURING 2001-2025: A PRELIMINARY INVESTIGATION (E02240) **Aftousmis Athanasios, Karagiannis Georgios, Papavasileiou Angelos**
12.45-13.00	Discussion

22. 13.00 - 14.30	Session: **RURAL AREAS AND SUSTAINABLE ENVIRONMENT** Chaired by **Prof Salvati Luca** and **Dr Economou Agisilaos** (Room A5) (main building)
13.00-13.15	CIRCULAR BIOECONOMY SOLUTIONS FOR RURAL RESILIENCE: A BIOGAS CASE STUDY ON AN ESTONIAN ISLAND (E02080) **Siret Talve**
13.15-13.30	DIGITAL FINANCIAL INCLUSION AND THE GENDERED ADOPTION OF PAY-AS-YOU-GO SOLAR ENERGY IN RURAL UGANDA (E02085) **Lorine Akinyi Otieno**
13.30-13.45	THE REGENERATIVE RURAL RESILIENCE FRAMEWORK (RRRF): OPERATIONALISING CLIMATE ADAPTATION AND SYSTEMIC TRANSFORMATION IN RURAL AREAS (E02116) **Tsatsou Alexandra, Galani Andriani, Nazos Theoharis, Malamis Simos**
13.45-14.00	AGROPHOTOVOLTAICS IN POLAND: TAX LAW AND JUDICIAL INTERPRETATION AS BARRIERS TO SUSTAINABLE ENERGY INNOVATION (E02181) **Brzezińska-Rawa Anna, Morawski Wojciech**
14.00-14.15	DIGITAL SURVEILLANCE OF WILDLIFE: EXPLORING THE TECHNOLOGICAL MEDIATION OF EMERGING TECHNOLOGIES IN GOVERNING GREY WOLVES AND RED DEER (E02191) **Valasiadi Maria-Evanthia, Bormpoudakis Dimitris**
14.15-14.30	THE CONTRIBUTION OF SMART AGRICULTURE AND SMALLHOLDERS TO SUSTAINABLE LOCAL DEVELOPMENT IN THE CONTEXT OF CLIMATE CHANGE: THE CASE OF THE REGIONS OF PELOPONNESE, WESTERN MACEDONIA AND CENTRAL GREECE (E02035) **Petridis Dimitris, Kalantonis Petros, Astara Olga-Eleni, Luca Salvati, Mitoula Roido**

14.30-15.30	Conference Lunch - Finger Food

23. 11.30 - 12.45	Session: **TOURISM AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Erdei-Gally Szilvia** and **Assoc Prof Sdrali Despoina** (Room A6) (main building)
11.30-11.45	GREEK TOURISM AFTER PEAK OIL: RESOURSE CONSTRAINTS, TRANSPORT, VULNERABILITY AND IMPLICATIONS FOR A SUSTAINABLE FUTURE (E02153) **Ovadias Nikolaos**
11.45-12.00	TOWARDS ZERO-WASTE TOURISM: ECONOMIC AND BEHAVIOURAL DIMENSIONS OF SUSTAINABLE HOSPITALITY OPERATIONS (E02162) **Karytsas Spyridon, Sardianos Christos, Kostakis Ioannis, Skoultsos Sofoklis, Briana Maria, Sardianou Eleni, Varlamis Iraklis**
12.00-12.15	HOSPITALITY AND FOOD WASTE MANAGEMENT IN THE HOTEL INDUSTRY (E02175) **Samartzi Ioanna**
12.15-12.30	TOURISM AND LOCAL VALUE CREATION IN ERMIONIDA: A SPATIAL APPROACH TO SUSTAINABLE DEVELOPMENT AND LOCAL RESILIENCE (E02180) **Sereti Evangelia - Paraskevi**
12.30-12.45	SUSTAINABLE TOURISM DEVELOPMENT IN PATMOS, GREECE: COASTAL PROTECTION AND DESTINATION MANAGEMENT (E02219) **Krikris Georgios, Sdrali Despina**

24. 12.45 - 14.30	Session: **SUSTAINABLE BUILDINGS AND INFRASTRACTURES** Chaired by **Prof Angelidis Minas** and **Dr Karametou Panagiota** (Room A6) (main building)
12.45-13.00	RAILWAY ACCESSIBILITY, REGIONAL COMPETITIVENESS AND SUSTAINABLE URBAN DEVELOPMENT (E02053) **Erdei Attila, Erdei-Gally Szilvia**
13.00-13.15	CONSTRUCTION OF MEGA INFRASTRUCTURE PROJECTS AND SUSTAINABLE DEVELOPMENT. THE CASE OF THE ATHENS RIVIERA IN ELLINIKO (GREECE) (E02034) **Alpa Natalia Maria, Karametou Panagiota, Kostakis Ioannis, Papavasileiou Angelos**
13.15-13.30	UNIVERSAL DESIGN AND SUSTAINABLE URBAN DEVELOPMENT: A COMPARATIVE ANALYSIS OF FOUR CASE STUDIES IN GREECE (E02073) **Poli Maria, Zavraka Fani Angeliki, Maniou Fotini, Griva Maria, Papadaki Kalliopi, Maniou Ioanna**
13.30-13.45	WHY IS THERMAL IMAGING NOT SYSTEMATICALLY APPLIED IN BUILDING DIAGNOSTICS? (E02177) **Ibrahim Abaji, Juan A Ferriz-Papi, Tanja Poppelreute**
13.45-14.00	FROM MICROSPATIAL DATA TO ENVIRONMENTAL DESIGN. ROOFTOPS AS CLIMATE INFRASTRUCTURE. (E02189) **Apostolou Malvina, Rodi Alcestis**
14.00-14.15	BEYOND THE PERCENTAGE: A CRITICAL ASSESSMENT OF WATER LOSS INDICATORS IN FIFTEEN GREEK WATER UTILITIES AND ITS IMPLICATIONS FOR SMALL, MOUNTAINOUS AND ISLAND SYSTEMS (E02051) **Chasiotis Angelos, Mathiou Panagiota, Chrysanthopoulos Giorgos, Bousdeki Maria, Manthos Theofanis, Nastos T. Panagiotis**
14.15-14.30	THE SILENT SUBSIDY OF LEAKAGE: COST RECOVERY, TARIFF POLICY AND THE HIDDEN ECONOMIC BURDEN OF WATER LOSSES IN GREEK WATER UTILITIES (E02052) **Chasiotis Angelos, Mathiou Panagiota, Chrysanthopoulos Giorgos, Bousdeki Maria, Manthos Theofanis, Nastos T. Panagiotis**

14.30-15.30	Conference Lunch - Finger Food

25. 15.30 - 16.30	Session: **URBAN RESILIENCE** Chaired by **Prof Eleni Sardianou** and **Dr Karytsas Spyridon** (Room A1) (main building)
15.30-15.45	COMPARATIVE ANALYSIS OF URBAN CLIMATE RESILIENCE LIVING LABS ACROSS SEVEN EUROPEAN CITIES: CHALLENGES AND PRIORITIES FOR ADAPTATION AND MITIGATION (E02042) **Koundouri Phoebe, Papadaki Lydia, Chourdaki Maria**
15.45-16.00	TRANSFORMING INFORMAL SETTLEMENTS INTO INCLUSIVE AND RESILIENT URBAN COMMUNITIES: A LIVELIHOOD-CENTRED SUSTAINABLE TOWNSHIP FRAMEWORK FOR THE GLOBAL SOUTH (E02045) **Rakesh Kumar Shami**

16.00-16.15	FROM RESILIENCE TO SUSTAINABILITY: THE ROLE OF LOCAL URBAN RESILIENCE PLANS IN ADVANCING SUSTAINABLE URBAN DEVELOPMENT (E02079) **Papadaki Kalliopi, Griva Maria, Poli Maria, Bakogiannis Efthimios**
16.15-16.30	HOW DOES A SUSTAINABLE URBAN STRATEGY BECOME DURABLE METROPOLITAN OPERATING CAPABILITY? A SOVEREIGN LIVING METROPOLITAN SYSTEM (SLMS) APPROACH (E02212) **Ahmed Taha Alhaddad**

26. 16.30 - 18.00	Special session: **AI, GEOAI, AND AR FOR LANDSCAPE PLANNING AND SUSTAINABILITY** Chaired by **Dr.Dr.Fivos Papadimitriou** (Room A1) (main building)
16.30-16.45	GEOAI AND SPATIAL AI FOR DIGITAL CITIES (E02123) **Papadimitriou Fivos**
16.45-17.00	LANDSCAPES COULD BE OTHERWISE: AI- GENERATED INVERSE LANDSCAPES AND THE VISUALIZATION OF CONTINGENCY. A NEOPRAGMATIST PERSPECTIVE ON SUSTAINABLE LANDSCAPE PLANNING (E02167) **Olaf Kühne**
17.00-17.15	SHARED LAND WITH PRIVATE HOUSES: A GeoAI WORKFLOW FOR DETECTING, DATING AND MAPPING THE CLUSTERING OF INFORMALLY PARTITIONED PARCELS IN CHALKIDIKI, GREECE (E02121) **Chalkidou Sevasti**
17.15-17.30	FROM SENSING PEOPLE TO GeoAI-INFORMED LANDSCAPE PLANNING (E02142) **Morgado Paulo**
17.30-17.45	THE POWER OF VIRTUAL LANDSCAPES: HOW SPACIAL DESIGN SHAPES CHILDREN'S EMOTIONAL AND BEHAVIOURAL RESPONSES (E02141) **Imperioso Mario, Morgado Paulo**
17.45-18.00	COUPLING GEOAI AND AUGMENTED REALITY IN EDUCATION FOR SUSTAINABILITY: THE LENS FRAMEWORK (E02124) **Sdravopoulou Konstantina**

18.00-18.30	Coffee Break

27. 15.30 - 18.00	Special session: **EDUCATION AND SUSTAINABLE DEVELOPMENT** Chaired by **Prof Kaldi Stavroula** and **Nastos Georgios** (Room A2) (main building)
15.30-15.45	UNIVERSITY INCUBATORS AS INNOVATION INTERMEDIARIES FOR SUSTAINABLE REGIONAL DEVELOPMENT IN LATIN AMERICA: FINDINGS FROM A SYSTEMATIC LITERATURE REVIEW (E02122) **Bravo Freire Paulina Elizabeth**
15.45-16.00	REFLECTIONS ON REDISCOVERING PANDEMIC PROSPERITY: EXPLORING PRE-WESTERN-HEGEMONY SCIENCES, TECHNOLOGIES, AND INNOVATIONS AS LEGACIES OF UNDIVIDED SUSTAINABLE DEVELOPMENT (E02188) **Bosco Bwambale**
16.00-16.15	THE SCHOOL THRESHOLD AS AN URBAN INTERFACE (E02131) **Bazaiou Natalia**

16.15-16.30	FROM INCLUSIVE PEDAGOGY TO IMMERSIVE LEARNING: THE VIREAL4STEM APPROACH TO GENDER EQUALITY IN STEM EDUCATION (E02234) **Georgiakakis Petros**
16.30-16.45	BRIDGING EARLY CHILDHOOD GREEN LITERACY AND AI-ASSISTED PEDAGOGY: THE GREEN MOVIES FRAMEWORK FOR SUSTAINABLE AND INCLUSIVE EDUCATION (E02235) **Georgiakakis Petros**
16.45-17.00	REFRAMING SUSTAINABILITY THROUGH CONTEXT. A HOLISTIC APPROACH TO ENVIRONMENTAL DESIGN EDUCATION (E02095) **Apostolou Malvina, Toli Maria Angeliki, Sakantamis Konstantinos, Paka Alkmini, Vasileiadis Vassilis**
17.00-17.30	Discussion

18.00-18.30	Coffee Break

28. 15.30 - 17.00	Special session: **SUSTAINABLE REGIONAL DEVELOPMENT, GOVERNANCE AND COHERENCE** Chaired by **Prof Manasakis Constantine** and **Dr Dulufakis N. Evangelos** (Room A5) (main building)
15.30-15.45	WESTERN ATTICA 2040 - KITHAIRON–AIGOSTHENA–PAGAI. A RESILIENT LANDSCAPE, HERITAGE AND URBAN REGENERATION MASTERPLAN FOR ALEPOCHORI, PSATHA, PORTO GERMENO, VENIZA AND MAVROLIMNI. (E02049) **Kampolis Dimitrios**
15.45-16.00	SECTORAL STRUCTURE, REGIONAL INEQUALITIES AND EMPLOYMENT DYNAMICS IN GREEK NUTS II REGIONS: CV, LQ AND SHIFT-SHARE EVIDENCE, 2005-2019 (E02115) **Dulufakis N. Evangelos, Xanthos J. George, Drakaki Eleni**
16.00-16.15	DEVELOPMENT OF AN INTEGRATED MATHEMATICAL CLIMATE RISK MODEL FOR STRATEGIC ADAPTATION PLANNING: AN APPLICATION TO THE REGIONAL UNIT OF KARDITSA (E02110) **Karagiannis Georgios, Economou Agisilaos**
16.15-16.30	LINKING SDG 14 WITH LEVELS: POLICY COHERENCE AND IMPLEMENTATION CAPACITY (E02096) **Moraitakis Nikolaos, Manasakis Constantine**
16.30-16.45	DETERMINING FAIR RESEARCH PARTICIPANT COMPENSATION: A DESIGN SCIENCE FRAMEWORK FOR SUSTAINABLE RESEARCH GOVERNANCE (E02159) **Ahimbisibwe Osborn, Kofi Sarpong Adu-Manu, Edward Kibikyo Mukooza, Dan Ayebale, Angella Napakol**
16.45-17.00	REGIONAL TECHNOLOGICAL CAPABILITIES FOR CLIMATE CHANGE ADAPTATION AND THE POTENTIAL FOR ENVIRONMENTAL RESILIENCE IN ATTICA (E02098) **Koundouri Phoebe, Dellis Kostas, Triantafyllidou Anni, Chourdaki Maria**

29. 17.00 - 18.00	Special session: **FIRE SERVICE AND SUSTAINABLE DEVELOPMENT** Chaired by **Antonios Maniatis** (Room A5) (main building)
17.00-17.15	THE FIRE SERVICE AS A DISTINCT SECURITY CORPS AND THE DOCTRINE OF ACTIVE BATTLE (E02046) **Maniatis Antonios**

17.15-17.30	FROM RAW DATA TO SPATIAL INTELLIGENCE: AN AI-ASSISTED GIS FRAMEWORK FOR ANALYSING WILDFIRE DISTRIBUTION AND LAND-USE DYNAMICS IN THESSALY, GREECE (E02147) **Stamatiou Christos, Matsouka Maria, Papageorgiou Grigorios**
17.30-17.45	ENERGY SECURING AND OPERATIONAL READINESS OF THE FIRE SERVICE: TOWARDS A SUSTAINABLE ENERGY MANAGEMENT MODEL (E02157) **Karsiotis Panagiotis, Adamopoulos Antonios**
17.45-18.00	Discussion

30. 15.30 - 18.00	Special session: **SUSTAINABLE URBAN DEVELOPMENT** Chaired by **Prof Varelidis George** and **Assoc Prof Kostakis Ioannis** (Room A6) (main building)
15.30-15.45	AN INTERNAL MATHEMATICAL MODEL FOR SUSTAINABLE DEVELOPMENT ASSESSMENT: EVIDENCE FROM KASTORIA, GREECE (E02109) **Karagiannis Georgios, Mitoula Roido**
15.45-16.00	FROM REFUGEE HERITAGE TO SUSTAINABLE URBAN DEVELOPMENT: MATERIAL AND INTANGIBLE CULTURAL HERITAGE IN NEA FILADEPFEIA - NEA CHALKIDONA (E02171) **Chronopoulou Georgia**
16.00-16.15	URBAN LAW IN GREECE IN THE CONTEXT OF THE HOUSING CRISIS: LEGISLATIVE AND JURISPRUDENTIAL APPROACHES (E02104) **Kouroupaki Kalliopi, Papadaki Kalliopi, Kyriakidis Charalampos, Bakogiannis Efthimios**
16.15-16.30	BLOCKCHAIN-BASED MECHANISMS FOR IMPROVING THE TRANSFER OF BUILDING COEFFICIENT PROCESS: TOWARD ALGORITHMIC FAIRNESS IN GREECE'S DIGITAL LAND BANK (E02120) **Christodoulou Dimitrios**
16.30-16.45	URBAN PARKS AND MENTAL WELL-BEING: THE CASE OF ANO PATISIA (E02128) **Tzouveleki Sofia, Mela Athina, Aslanoglou Aikaterini, Tousi Evgenia, Varelidis George**
16.45-17.00	MULTIPLE IDENTITIES IN THE URBAN FABRIC: A HUMAN GEOGRAPHY STUDY ON THE MUSLIM COMMUNITIES OF XANTHI (E02183) **Kallioupis Charalampos, Komninakidis Aggelos**
17.00-17.15	SPATIAL CONFIGURATION AND PUBLIC SPACE AMBIENCE QUALITIES: EXPLORING THE INTERACTIONS BETWEEN URBAN MORPHOLOGY, SOUNDSCAPE, AND SOCIAL BEHAVIOR (E02237) **Radji Amina, Ben KahouLeila, Djedi Hadjer**
17.15-17.30	A CINEMATIC QUEST FOR THE SUSTAINABLE CITY IN CONTEMPORARY ATHENS OF UNCERTAINTY (E02097) **Chatzifragkios Makrydakis Konstantinos**
17.30-17.45	PARTICIPATORY MAPPING OF LIVED URBAN EXPERIENCE: GENDER, EVERYDAY PRACTICES AND PUBLIC SPACE IN THESSALONIKI (E02166) **Apostolou Angelina**
17.45-18.00	SUSTAINABLE PLANNING IN FRAGILE GEOGRAPHICAL AREAS: THE EXPERIENCE OF SPECIAL URBAN PLANS OF THE COASTAL FRONT OF EPIRUS, ANTIPAROS AND SMALL CYCLADES (E02179) **Andrianos Pavlos, Bakaoukas Meletios**

31. 09.00 - 11.00	Special session: **TOWARDS A HUMAN-CENTRED AI ERA - SOCIAL AND ENVIRONMENTAL SUSTAINABILITY, EMERGING TECHNOLOGIES AND EUROPEAN POLICIES: CHALLENGES, BEST PRACTICES AND FUTURE DIRECTIONS** Chaired by **Dr Vassilis Bokolas, Assoc Prof Andrea Colantoni, Assist Prof Stavros Kaperonis, Dr Efi Ntrouva** (Ceremony Hall) (New Library Building)
09.30-09.45	DIGITAL GEOGRAPHIES AND EMERGING DIGITAL ENVIRONMENTS: OPPORTUNITIES, RISKS AND EDUCATIONAL NEEDS ACROSS FOUR EUROPEAN COUNTRIES (E02256) **Bokolas Vassilis, Kaperonis Stavros, Ntrouva Efi, Papadaki Eirini, Colantoni Andrea, Mijo Ketrina**
09.45-10.00	ENHANCING YOUTH EMPLOYABILITY THROUGH ARTIFICIAL INTELLIGENCE: A COMPARATIVE REVIEW OF GOOD PRACTICES IN GREECE AND SPAIN (E02256) **Fouskas Theodoros, Vasilakou Tonia, Koulierakis Georgios, Petraki Maria, Galanis Petros, Economou Charalampos , Aranda Luis**
10.00-10.15	GREEN ACT 4U: EMPOWERING NEETS THROUGH GREEN ENTREPRENEURSHIP (E02222) **Egidi Gianluca, Scavino Giorgio, Ozimek Anna, Colantoni Andrea**
10.15-10.30	EXPLORING THE ROLE OF SCHOOL NURSES IN MANAGING PEDIATRIC ASTHMA AMONG STUDENTS IN THE SCHOOL COMMUNITY: A SYSTEMATIC REVIEW (online) (E02176) **Tsigarida Elli, Fouskas Theodoros, Koulierakis Georgios, Liargikovinou Angeliki**
10.30-10.45	HUMAN CENTRED AI AND DIGITAL GAMIFICATION IN EARLY INCLUSIVE EDUCATION (E02252) **Manousaridou Evangelia**
10.45-11.00	PLACE-NEUTRAL GAINS: HOME REGION, HOST DESTINATION AND LENGTH OF STAY IN THE SOFT-SKILL RETURNS OF ERASMUS+ MOBILITY FOR ALBANIAN STUDENTS (E02244) **Skendaj Elton, Contardo Carlo**
11.00-11.30	Coffee Break
11.30-11.45	BOOKING HEALTH APPOINTMENTS VIA DIGITAL MEDIA APPLICATIONS: REPERCUSSIONS FOR HEALTHCARE ACCESS, HEALTH OUTCOMES, AND WORK ABILITY AMONG FEMALE IMMIGRANT WORKERS IN GREECE (E02078) **Naber Lara, Fouskas Theodoros**
11.45-12.00	METAYOUTH: ETA YOUTH – EMPOWERING YOUTH AWARENESS ON THE METAVERSE AND METAVERSE GAMING (E02223) **Egidi Gianluca, Scavino Giorgio, Ozimek Anna, Colantoni Andrea**
12.00-12.15	FIRM HETEROGENEITY AND SUSTAINABLE DOMESTIC REVENUE MOBILISATION: EVIDENCE FROM ADMINISTRATIVE CORPORATE TAX DATA IN UGANDA (E02059) **Asiimwe Richard**
12.15-12.30	FROM AI LITERACY TO HUMAN AGENCY: A PSYCHOLOGY-INFORMED FRAMEWORK FOR RESPONSIBLE AND INCLUSIVE AI USE IN HIGHER EDUCATION (E02253) **Reppa Glykeria**
12.30-12.45	HUMAN-CENTRED AI IN EU CANDIDATE COUNTRIES: ALIGNING THE AI ACT WITH CONSUMER PROTECTION AND CAPACITY BUILDING (E02253) **Plotnic Olesea**
12.45-13.00	SETTLEMENT DIVERSITY AND PEDAGOGICAL PLACE: KINDERGARTEN EDUCATION AND LOCAL SUSTAINABILITY IN MESSINIA, GREECE (E02168) **Kanakari Eleni**

13.00-13.15	SERIOUS GAMES FOR CLIMATE CHANGE IN HIGHER EDUCATION: DESIGNING A MODULAR CURRICULUM AND DIGITAL LEARNING PLATFORM (E02250) **Bokolas Vassilis, Hordecki Bartosz, Mitoula Roido, Nosova Bogdana, Rodrigues Nuno, Sakson-Boulet Anna, Silva Fernando**
13.15-13.30	FROM CULTURAL VALUE TO SUSTAINABLE LOCAL DEVELOPMENT: CULTURAL ORGANIZATIONS AS PLACE-BASED ACTORS IN THESSALONIKI, GREECE (E02106) **Tsavdaridou Despoina, Papadaki Eirini**
13.30-14.00	Discussion

SOCIAL EVENT: 18.30-20.00 - MUSIC CONCERT BY THE NATIONAL CONSERVATORY OF NEA SMYRNI, (Amphitheater: Georgios Karabatzos) (main building)

3rd DAY - Sunday 6 December 2026 online sessions

32. 10.30 - 12.30	Online session: **EDUCATION AND SUSTAINABLE DEVELOPMENT** Chaired by **Assist Prof Pavlakis Manos** and **Dr Georgios Nastos** **link:** meet.google.com/xym-ojsk-vhc
10.30-10.45	PROMOTING SUSTAINABLE DEVELOPMENT THROUGH PRIMARY SCHOOL TEXTBOOKS. CASE STUDY: URBAN AND RURAL AREAS IN GREECE (E02036) **Papadopoulou Kl. Vasiliki, Kaldi Stavroula, Sardianou Eleni, Mitoula Roido**
10.45-11.00	FROM ENTRECOMP TO CIRCULAR ENTREPRENEURSHIP: CULTIVATING SKILLS, SUSTAINABLE THINKING AND VALUE CREATION IN THE CLASSROOM (E02226) **Nikopoulos Evangelos**
11.00-11.15	DESIGN OF A MODEL ARCHAEOLOGICAL MUSEUM FOR CHILDREN AND ADOLESCENTS IN SPARTA USING IoT, 3D SCANNING AND PRINTING, AND THE MARIA MONTESSORI EDUCATIONAL METHOD (E02205) **Tatsiona Victoria**
11.15-11.30	DIETARY PROFILES AND FOUR DIMENSIONS OF SUSTAINABILITY AMONG UNIVERSITY STUDENTS IN TIRANA (E02133) **Luzi Anxhela, Kokthi Elena, Drishti Sibora**
11.30-11.45	FROM POLICY TO PRACTICE: A HUMAN-CENTERED FRAMEWORK FOR TEACHER SUPPORT AND AI GOVERNANCE IN SCHOOLS (E02230) **Kouklatzidou Maria, Papadatou Evangeloula**
11.45-12.00	LEADING INCLUSIVE AND EQUITABLE EDUCATION: A PRISMA-BASED SYSTEMATIC REVIEW (E02190) **Pavlakis Manos**
12.00-12.15	THE EXPERIENCE AND CHALLENGES OF UNIVERSITIES IN THE IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT ACTIVITIES ACROSS SECTORS: CASE STUDIES OF FACULTY OF ECONOMICS AND BUSINESS IN OSIJEK, CROATIA AND THE GERMAN UNIVERSITY OF TECHNOLOGY IN OMAN (E02084) **Ciberlin Danijela, Erceg Aleksandar, Sannegadu Rajesh**
12.15-12.30	Discussion

33. 12.30 - 15.30	Online session: **SUSTAINABLE URBAN DEVELOPMENT, ENVIRONMENT, CULTURE AND NEW TECHNOLOGIES** Chaired by **Prof Nguyen Trung Luan** and **Dr Angelos Papavasileiou** **link:** meet.google.com/xym-ojsk-vhc

12.30-12.45	AI-ENABLED DIGITAL TWINS FOR SUSTAINABLE URBAN DESIGN DECISION-MAKING: A SYSTEMATIC REVIEW AND CONCEPTUAL FRAMEWORK (E02146) **Rouini Sarre, Ouldmoumna Mohamed El-Amine**
12.45-13.00	ADAPTIVE INFRASTRUCTURE GOVERNANCE IN PERI-URBAN ZONES: OVERCOMING AGGLOMERATION SHADOWS UNDER MACROECONOMIC SHOCKS (E02149) **Nguyen Trung Luan, Doan Khanh Minh**
13.00-13.15	SUSTAINABLE CONSERVATION AND ADAPTIVE REUSE OF URBAN HERITAGE BUILDINGS; CHALLENGES AND OPPORTUNITIES. CASE STUDIES FROM MANCHESTER AND THE NORTHWEST, UNITED KINGDOM (E02101) **Yioutani-Iacovides Maria**
13.15-13.30	URBAN DIGITAL TWINS IN GREECE: OPPORTUNITIES AND PATHWAYS TOWORDS A NATIONAL FRAMEWORK (E02182) **Kalergis Dimitrios, Tsiafitsa Georgia**
13.30-13.45	TRADITIONAL URBAN FORM AND ITS INFLUENCE ON ENERGY AND MICROCLIMATIC CONDITIONS IN GREEK HERITAGE URBAN CORES (E02093) **Tsirigoti Dimitra**
13.45-14.00	SOLAR ACCESS AND URBAN MORPHOLOGY IN THE HISTORIC CORE OF XANTHI (E02094) **Tsirigoti Dimitra**
14.00-14.15	CLIMATE SECURITY AFTER THE RETURN OF WAR: EUROPEAN ARMED FORCES AND NORMATIVE FRAGILITY (E02152) **Kaloudiotis Theo**
14.15-14.30	THE ROLE OF ARTIFICIAL INTELLIGENCE IN THE DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATION FOR SUSTAINABLE DEVELOPMENT: AN EMPIRICAL STUDY OF GREEK CIVIL SERVANTS' PERCEPTIONS (E02088) **Kyritsi Maria, Koulougliotis Dionysios, Kabassi Katerina**
14.30-14.45	FROM ARISTOTELIAN EUDAIMONIA TO THE SUSTAINABLE CITIZEN: ETHICAL VIRTUES AND THIRD-GENERATION PATTERN LANGUAGES FOR SUSTAINABLE URBAN COEXISTENCE (E02132) **Giogos Ennios Eros**
14.45-15.00	SUSTAINABLE DEVELOPMENT VERSUS CIVILIZATION COLLAPSE: A CONCEPTUAL INTERDISCIPLINARY APPROACH (E02107) **Pëllumb Harizaj**
15.00-15.15	BEYOND ENGAGEMENT: EVALUATING COMMUNICATION STRATEGIES FOR CULTURAL SUSTAINABILITY (E02130) **Kitsonis Dimitrios, Dekoulou Paraskevi**
15.15-15.30	CAVE-TEMPLES IN AKRAIFNO IN BOEOTIA AND THEIR PILGRIMATE ROUTE (E02027) **Theotokatos Christos (Archimandrite Chrysostomos)**

34. 15.30 - 18.00	Online session: **SUSTAINABLE TOURISM, SUSTAINABLE LOCAL DEVELOPMENT AND NATURAL DISASTERS** Chaired by **Prof Vukadinović Simonida** and **Dr Economou Agisilaos** **link: meet.google.com/xym-ojsk-vhc**
15.30-15.45	THE VISA EXPRESS SCHEME AS A TOOL FOR CROSS-BORDER TOURISM DEVELOPMENT: EVIDENCE FROM CHIOS ISLAND (E02139) **Tora M. Ourania, Poulaki Ioulia**

15.45-16.00	THERMAL TOURISM AS A DRIVER OF SUSTAINABLE TOURISM DEVELOPMENT: THE CASE OF IKARIA. GREECE (E02071) **Loukas Loukas, Trihas Nikolaos, Valachis Ioannis**
16.00-16.15	URBAN RESILIENCE TO CRUISE-SHIP EMERGENCIES IN SMALL ISLAND PORTS: AN INTEGRATED MARITIME, FIRE AND ENVIRONMENTAL RISK ASSESSMENT OF ARGOSTOLI BAY, KEFALONIA (E02231) **Kourouklis Antonios, Balomenou Georgia, Potamianos Anastasios, Boulouta Konstantina**
16.15-16.30	FROM ADOPTION INTENTION TO INVESTMENT READINESS: CLEAN PROPULSION TECHNOLOGIES IN GREEK SHIPPING (E02068) **Kourouklis Antonios, Chatzitheodoridis Fotios, Loizou Efstratios, Spinthiropoulos Kostas, Michailidis Anastasios, Boulouta Konstantina**
16.30-16.45	ENVIRONMENT PRESSURES, NATURAL DISASTERS, AND GROWTH PATTERNS IN THE MENA REGION: EMPIRICAL ANALYSIS, 1990-2021 (E02207) **Kamel Hager Essam, Yousri Dina, Ahmad Usman, Papadas Dimitrios**
16.45-17.00	BEYOND DISASTER COUNTS: MEASURING DISASTER SEVERITY AND ITS ASSOCIATION WITH AGRICULTURAL PRODUCTION (E02220) **Ahmad Usman, Modica Marco, Kontoleon Andreas, Papadas Dimitrios**
17.00-17.15	ENTREPRENEURSHIP, SUSTAINABLE DEVELOPMENT AND INTERNATIONALIZATION: ASYMMETRIC OUTCOMES IN A PERIPHERAL EU ECONOMY (E02169) **Grigoriadi Dafni, Kottaridi Constantina**
17.15-17.30	IS THE INFRASTRACTURE DEVELOPMENT INHERENTLY GREEN? EVIDENCE FROM THE MENA REGION (E02221) **Amr Hosny Nadine, Yousri Dina, Papadas Dimitrios**
17.30-17.45	KEY INDICATORS FOR MONITORING URBAN CIRCULAR BIOECONOMY IN CITIES OF THE AUTONOMOUS PROVINCE OF VOJVODINA (E02125) **Vukadinović Simonida, Ješić Jelena, Andrejević Panić Andrea, Gajin Jelena, Kisin Jovana, Mulić Danica**
17.45-18.00	FROM DESIGN GUIDELINESS TO SIMULATION. A SIMULATION BASELINE AND MOP/POM-DRIVEN SCENARIOS FOR AUTONOMOUS VEHICLES IN PATRAS, GREECE. (E02259) **Petri G. Ioanna, Rodi P. Alcestis**
18.00-18.15	POSSIBLE BARRIERS TO BASIC SOCIAL SERVICES: AN EXPLORATORY ADMINISTRATIVE BURDEN PERSPECTIVE FROM BẮC NINH (E02060) **Nguyen Trung Luan, Doan Khanh Minh**
18.15-18.30	Discussion

Closing of the Conference

ABSTRACTS

Keynote Abstracts

PARTICIPATORY URBAN PROPOSALS: MATERIAL ENVIRONMETALLY FOCUSED COEXISTANCE AND POSSIBLE HYBRID APPROACHES

Dr. Moraitis Konstantinos
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Abstract
Let us decompose and present the 'key' references for our proposed 'keynote' speech:

- Henri Rousseau in Exarcheia, Athens and the formation of a participatory park of Green Activity: an introductory example, associated with a tendency largely developed in many Western countries.
- 'Green guerillas' and 'Le Miel du Béton': environmental proposals of social transformation, surpassing the woke agenda.
- Social conscience and the Three (possible) Ecologies, as described by Félix Guattari, in his homonymous book.
- The exceptional New York 'Highline' urban landscape design, and the participatory approach.
- Cultural and political coexistence in the context of a possible better, multiethnic society.
- Plato's Gardens and the hybrid didactics of 'transurbanity': introducing a new term to describe coexistence and participatory approaches.
- A hybrid promenade from Kerameikos archeological site to Elaionas Mosque via Plato's Academy, and…
- …a hybrid navigation to the memories of the last century Greek refugees, or the contemporary multiethnic immigrants' groups.

Keywords: Participatory urban proposals, enviromentally coexistence

SOCIO-ENVIRONMENTAL JUSTICE FROM THE MEDITERRANEAN TO EUROPE AND BEYOND

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Abstract

Pioneering analyses of environmental justice conducted in the US and northern Europe have often been mistakenly used as a theoretical framework for assessing the impact of environmental justice in southern European cities. In the US, many studies have highlighted that the most vulnerable social groups and racial/ethnic minorities live in neighbourhoods with less tree cover, poorer air quality, and lower levels of environmental justice. However, this contradicts studies conducted in European cities, which highlight different results depending on different urban structures, local climate characteristics, and the effects of gentrification and touristification processes, as well as on different road traffic patterns.

In this vein Mediterranean urban systems as frontier posts in the advance of global warming, can be considered for the rest of Europe as testing grounds for the environmental and social effects of the threats and uncertainties arising from global warming. In the Mediterranean context, the environmental aspects of the impact of climate change on cities have been widely addressed in the literature. However, many of these analyses have been based on approaches that focus on individual cities or on methodologies that overlook the importance of the spatial and multi-scale dimension in the study of environmental justice. In turn the social effects have been analysed in less depth.

In this regard, this contribution provides an overview of the analyses that I have conducted, together with other researchers, on Mediterranean cities, applying comparable and rigorous methodologies that take the spatial dimension into account, with the aim of developing assessments that can be extrapolated from the Mediterranean context to other European cities

Key words: Environmental justice, Inequality, Environmental Stress, Urban Areas

MULTIDISCIPLINARY PARADIGMS BETWEEN SCIENCE AND POLICY. POSITIVE AND NORMATIVE APPROACHES FOR THE ANALYSIS OF COMPLEX ADAPTIVE (ECOLOGICAL-ECONOMIC) SYSTEMS

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Abstract

Cognitive systems in socioeconomic networks have strongly influenced the representation of complex system dynamics, highlighting the emergence of new structures centered on adaptive actors, local interactions, the development of poles of attraction, and increased innovation capacity. In a context of urban fragmentation, economic uncertainty, and changing social attitudes and political rules, regional systems have increasingly been viewed as open systems shaped by nonlinear dynamics involving anticipatory agents and emerging types of spatial units. Relatively low-level interactions between agents produce these new spaces at two main levels of observation: the morphological and functional levels, which emerge from citizen decisions and feedback interactions, and the spatial organization of economic activities, which reflects adaptive and competitive strategies and relationships between districts, municipalities, and individual areas. Relational issues complicate the evaluation of any regional system. Isolating the interactions between different levels of organization for measurement purposes appears to be a daunting task. However, the evolutionary trajectory of regional systems reveals, in many cases, some common patterns, including selection, cooperation, imitation, and adaptation to change. These models typically reflect self-organized development rather than behavior controlled by a central institution, even in the face of exogenous stresses (e.g., climate change), which impact their sustainability characteristics and resilience potential. This seminar discusses complex systems from a multidisciplinary perspective, providing concrete environmental and economic examples, and revealing -from an operational and planning perspective- how "complex thinking and acting" is useful not only for science but also for policy implications.

Keywords: Science and policy, ecological-economic systems

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JUSTICE, SUSTAINABILITY AND EU INTEGRATION: LEGAL PATHWAYS FOR CONSUMER-CENRED LOCAL AND REGIONAL DEVELOPMENT

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Abstract

This article explores the links between justice, sustainability and European integration in the context of local and regional development. It starts from the idea that sustainable development is not only about economic growth, environmental protection or urban planning. It also depends on whether people can access justice, seek effective remedies and be adequately protected as consumers. From this perspective, strong and accessible justice systems are an important part of building inclusive and resilient communities.

The paper connects with the broader theme of sustainable local, rural and regional development and urban reconstruction by looking at sustainability through a legal and institutional lens. It considers how EU legal standards, the rule of law, participatory governance and alternative dispute resolution can support fairer markets, increase public trust and contribute to more balanced forms of regional development.

The discussion is also linked to the objectives of the Jean Monnet Chair EU4JUST-RE, particularly its focus on justice reform, European legal integration and the modernization of legal education in the Republic of Moldova. The article therefore pays particular attention to the connection between EU-oriented reforms and the realities faced by citizens at the local level. This is especially relevant in areas where consumers, public authorities and businesses interact directly and where the effectiveness of legal rules is experienced in everyday situations.

The article argues that placing consumers and citizens more clearly at the centre of local and regional development can bring the objectives of sustainability and justice closer together. In this sense, European integration should be understood not only as the approximation of legislation, but also as an opportunity to improve how legal and institutional systems respond to people's needs and contribute to more accountable, inclusive and socially responsive communities.

Keywords: justice reform; sustainability; EU integration; consumer protection; local and regional development; access to justice; rule of law; Republic of Moldova; Jean Monnet

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SOCIOECONOMIC AND DEMOGRAPHIC CONDITIONS AND HEALTH INEQUALITIES ACROSS ATHENS METROPOLITAN AREA DURING THE PANDEMIC: LESSON LEARNED AND POLICY IMPLICATIONS

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Abstract

The central objective of this paper is to examine how the COVID-19 pandemic exposed and spatially structured health inequalities within the metropolitan region of Attica, and to interpret these disparities within the broader climate-health-equity nexus. Rather than treating mortality as randomly distributed or solely demographically determined, the study investigates how structural living conditions, environmental context, and epidemic intensity interact within a metropolitan system to shape differentiated vulnerability.

This presentation is based on an empirical analysis of the variation in COVID-19 mortality risk across the 58 mainland municipalities of Attica, Greece's largest metropolitan region. The analysis is based on official data covering 2.9 million confirmed cases and 7396 deaths between October 2020 and March 2022.

Results show that while epidemic processes unfold within interconnected urban systems, the empirical analysis conducted across the Athenian Municipalities indicates that structural housing conditions and local epidemic intensity dominate the explanation of mortality disparities. Thus, the evidence suggests that metropolitan vulnerability is primarily structured through within-municipality conditions rather than strong inter-municipal spillovers. Home overcrowding and epidemic pressure emerge as the most stable correlates of mortality risk.

Urban resilience in Attica is not only an issue of health-system response; it is fundamentally a question of distributive justice, housing conditions, environmental context, and governance metropolitan coordination.

Key words: Urban health inequalities, housing and living condition in urban areas, mortality risk, pandemic, Athenian Municipalities

PLANNING AGAINST THE CLOCK: INSTITUTIONAL FRAMEWORK, NEW PLANNING TOOL AND THE RETREAT OF CONSULTATION IN THE "KONSTANTINOS DOXIADIS" URBAN PLANNING REFORM PROGRAMME

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Abstract

The "Konstantinos Doxiadis" Programme is the most extensive urban planning undertaking in modern Greek history: more than 300 contracts for Local Urban Plans (TPS) and 18 Special Urban Plans (EPS), some €400 million from the EU Recovery and Resilience Facility, and a target of covering 70–80% of national territory by the end of 2026. The presentation assesses it as an attempt to re-found a planning system against a financing deadline.

The elaboration starts with the institutional and legal framework, comparing the arrangements of Laws 1337/1983 and 2508/1997 — General Urban Plans (GPS) and Spatial and Residential Organisation Plans of Open Cities (SCHOOAP), followed by an urban planning study and an implementation act — with the two-tier system of Laws 4447/2016 and 4759/2020: a first tier of TPS and EPS, regulating land uses, building conditions and protection zones across the whole municipal territory, and a second tier of Implementation Layout Plans (RSE), translating these into plot-level street layouts and land contributions.

The analysis then turns to the planning tools introduced after the projects had been tendered — planning standards (σταθερότυπα), carrying capacity reports (EkKEFI), settlement boundary delimitation and road classification studies — and asks whether their specifications arrived in time, and were adequate for the studies expected to apply them, and whether sustainability principles were served by the specific planning process.

The planning process itself is then described, from tendering and supervision to the digital participation platform of 2024, and the adequacy of the consultation procedures is evaluated. Here the comparison with Antonis Tritsis' Urban Reconstruction Operation (EPA, 1982–84) — built on neighbourhood mobilisation rather than online submission — measures how far participatory practice has retreated.

Throughout, the argument is grounded in examples from studies currently in progress. The conclusion problematises what must be secured after 2026, when the funding ends but the presidential decrees — and the plans' real effects on the pilars of sustainability — are only beginning.

CHILDREN AS AGENTS OF SUSTAINABLE CITIES: POLITICAL AGENCY, EDUCATION AND THE GreenComp FRAMEWORK

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Abstract

Sustainable urban development is not merely an issue of environmental innovation, infrastructure, technology and governance. It also depends on the capacities of citizens to understand complex sustainability challenges, envision alternative futures, participate in collective decision-making and act for change. From this perspective, education has a fundamental role in developing the competences required for sustainable societies.

This presentation explores the potential of sustainability education to move beyond the transmission of knowledge and environmentally responsible behaviours towards the development of children's political agency. It draws on the experience and conceptual framework of the Erasmus+ GreenComp School project which aims to adapt and validate the European GreenComp sustainability competence framework for the primary school context and to develop educational and teacher-training resources that support a sustainability mindset.

Particular attention is given to the GreenComp area of *Acting for Sustainability* which includes political agency, collective action and individual initiative. The presentation examines how these competences can be connected with children's agency, teacher capacity building and a whole-school approach to sustainability. The GreenComp School training materials conceptualise education as a field in which children can develop civic learning and action, engage with sustainability issues, collaborate with their school community and, where appropriate, connect with local stakeholders and decision-making processes.

The presentation proposes a conceptual pathway from sustainability competence to political agency, from classroom learning to collective action, and from school to local community. In this perspective, schools can function as democratic learning spaces and as bridges between children and the communities in which they live.

The presentation concludes by arguing for a broader understanding of the educational foundations of sustainable cities: children should not be considered only as future citizens who will eventually inherit sustainable urban environments but also as learners and social actors who can develop the knowledge, skills, values and opportunities required to participate in shaping sustainable futures in the present.

Keywords: GreenComp; sustainability education; children's political agency; sustainable cities; whole-school approach; civic participation; primary education

FROM IDEAL TO REAL: REVISITING URBAN UTOPIAS IN THE AGE OF SUSTAINABLE CITIES

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Abstract

Throughout urban history, visions of ideal cities have shaped both the intellectual foundations and spatial practices of planning. As contemporary urbanism responds to the imperatives of sustainability, resilience, and intelligence, a fundamental question resurfaces: How do universal urban ideals evolve through their encounter with the complexities of real places and historical contingencies?

Addressing this core tension, the keynote examines the relationship between two seminal projects by Ernest Hébrard: the World Centre of Communication (1913), conceived in collaboration with Hendrik Christian Andersen as a visionary capital of international unity, and the Reconstruction Plan for Thessaloniki (1918), developed following a catastrophic fire.

A comparative analysis of their ideological premises and urban morphology reveals a process of spatial and conceptual transformation. The universalist aspirations of the World Centre acquire a distinctly situated expression in Thessaloniki, where the ideal of international unity is reinterpreted within the cultural complexity of a Mediterranean metropolis. Through the adaptation of spatial hierarchies, modular geometries, and the relationships among civic landmarks, Hébrard translates an ideal urban framework into a historically grounded and site-specific urban structure. The analysis further reveals striking spatial and temporal affinities between Hébrard's early twentieth-century configurations of pedestrian accessibility and contemporary principles of chrono-urbanism, including the 15-minute city.

Hébrard's legacy demonstrates that urban utopias are capable of intellectual and spatial adaptation. The transition from ideal to real thus emerges as an enduring challenge for successive generations of urban thought, offering a historical perspective on contemporary sustainable urbanism and the continuous negotiation among visionary aspirations, spatial organization, cultural context, and the lived experience of cities.

Keywords: Urban Utopias, Ernest Hébrard, Urban Morphology, Sustainable Cities, Chrono-Urbanism, 15-Minute City.

PRIMARY SECTOR, RURAL AREAS AND SUSTAINABLE DEVELOPMENT

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Abstract
The primary sector remains a fundamental component of territorial development, food security, environmental management, and social cohesion, particularly in rural areas. Agriculture, livestock farming, forestry, and fisheries continue to shape rural economies and landscapes, while also being directly affected by climate change, demographic decline, market volatility, technological transformation, and increasing pressure on natural resources. This paper examines the relationship between the primary sector, rural areas, and sustainable development, focusing on the economic, social, environmental, and spatial dimensions of this interaction.

The analysis highlights the need to move beyond a narrowly production-oriented model towards an integrated approach that combines economic viability with environmental protection, social inclusion, and territorial resilience. Sustainable rural development requires the modernization of agricultural production, the efficient use of water, soil, and energy resources, the adoption of climate-smart and circular practices, and the strengthening of local value chains. At the same time, it depends on improving access to infrastructure, digital technologies, public services, education, finance, and markets.

Particular attention is given to the diversification of rural economies through agri-food processing, renewable energy, rural tourism, ecosystem services, and small-scale entrepreneurship. These activities can generate employment, support younger populations, reduce regional inequalities, and reinforce the multifunctional role of rural areas. The paper also underlines the importance of governance, participatory planning, producer cooperation, and coordination between agricultural, environmental, regional, and social policies.

It concludes that the primary sector can become a central driver of sustainable development when supported by place-based strategies that recognize the specific characteristics of rural territories. Such strategies should balance competitiveness with ecological responsibility, strengthen rural communities, protect natural and cultural resources, and enhance their capacity to respond to future economic, climatic, and demographic challenges.

Key words: Primary sector, rural areas, rural territories, sustainable development, European Union

FROM CIRCULAR ECONOMY TO REGIONAL RESILIENCE: BUILDING COMPETITIVE AND SUSTAINABLE LOCAL ECONOMIES

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Abstract

Cities and regions are increasingly expected to combine environmental sustainability with economic development and competitiveness. The circular economy has an important role to play in this transition, but its potential goes well beyond waste management and the more efficient use of resources. It also concerns the way local economies are organised, how firms interact, and how value can be retained and created locally.

The keynote will discuss the links between circular economy, competitiveness and regional resilience, focusing particularly on SMEs, industrial symbiosis and the development of new business models. It will also consider the role of local and regional authorities and the importance of cooperation between firms, universities and other local stakeholders.

A central issue is what is actually needed for circularity to work at the local level. Governance, access to knowledge and finance, appropriate skills and business capabilities all matter, while local conditions can significantly affect both the opportunities and the barriers firms face. Drawing on these issues, the keynote will discuss how circular economy policies and business practices can become part of a broader regional development strategy, supporting local value creation while improving the capacity of local economies to respond to environmental and economic pressures.

Key words: Sustainable Local Economies, Circular Economy, Regional Resilience, Sustainable Building

HOUSING IN HISTORIC CITIES: COMPARING HOUSING PRESSURES AND URBAN TRANSFORMATION IN GREEK AND EUROPEAN HISTORIC CITIES

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Abstract
Housing is becoming one of the most critical challenges affecting the sustainability and social resilience of historic cities. While historic urban areas are increasingly promoted as cultural and tourism destinations, the growing pressure of tourism, short-term rentals, property investment, rising rents and changing housing markets can progressively undermine their residential function. This paper investigates how these processes affect housing affordability, residential stability and social diversity in historic cities, focusing on Greek historic cities in comparison with selected European counterparts.

The research adopts a comparative mixed-method methodology combining literature and policy review, statistical analysis, spatial analysis and comparative case-study assessment. Selected historic cities in Greece are examined alongside European historic cities that face comparable tourism, housing and heritage pressures. The analysis focuses on a set of indicators related to housing affordability, rent and property-price trends, short-term rental intensity, residential population change, housing tenure, tourist accommodation, land-use transformation and accessibility to everyday services. GIS-based spatial analysis is used to investigate the geographical concentration of housing and tourism pressures within historic centers and their surrounding neighborhoods. The comparative analysis is complemented by an examination of planning and housing policies, identifying different approaches to regulating tourism accommodation, protecting residential uses and maintaining affordable housing.

Greek historic cities provide a particularly relevant context because their historic centers frequently combine high heritage value, strong tourism dependence, limited housing capacity and rapidly changing real-estate markets. Cities such as Rethymno, Chania, Rhodes, Corfu and Nafplio illustrate different manifestations of the tension between the conservation of historic urban character and the need to maintain vibrant residential communities. The European comparison aims to identify common patterns as well as differences in governance and policy responses, including housing regulation, short-term rental controls, adaptive reuse, social housing, heritage-sensitive regeneration and measures supporting permanent residents.

The paper argues that the sustainability of historic cities cannot be measured only through the conservation of their physical and cultural heritage. Maintaining housing as a living and affordable function is equally fundamental to preserving the social resilience, authenticity and vitality of historic urban landscapes. The study therefore proposes a shift towards integrated heritage and housing policies that place residents and everyday urban life at the center of historic-city planning.

Keywords: historic cities; housing affordability; short-term rentals; tourism; gentrification; urban resilience; housing policy; Historic Urban Landscape; European cities.

"RUINS for Athens – REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY

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Abstract
RUINS° for Athens presents an innovative pilot intervention in public space and a model of good practice, reflecting on the principles of the circular economy, participation and sustainability. Through the reuse of stone materials from an 80-year-old house under demolition on Apolloniou Street, at the foot of the Philopappos Hill, the project designs and delivers a pedestrian street directly in front of the site, along with a staircase at its end, creating a physical connection between Ano Petralona and Philopappou Hill.

The project is implemented through a combination of participatory and educational design, with a strong emphasis on preserving collective memory and reducing the environmental footprint of the built environment. Its methodology includes Living Lab–type workshops with architecture students, a pilot implementation through a hands-on workshop, the development of a methodological guide to support contemporary urban policy-making, a detailed implementation study, the realisation of the intervention, and a set of dissemination and outreach actions.

RUINS° for Athens is implemented and co-developed by the School of Architecture of the National Technical University of Athens (NTUA) and the ENA Institute for Alternative Policies, with the active support of the Municipality of Athens and the contribution of the Ephorate of Modern Monuments of Attica.

Key words: RUINS for Athens, urban sustainability

THE MEMORY OF PLACES AND SUSTAINABLE HERITAGE: RETHINKING HISTORIC SETTLEMENTS THROUGH CONTINUITY, CHANGE AND LIVED EXPERIENCE

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Abstract

Historic settlements are complex environments in which material heritage, spatial structures, everyday practices and memory interact across different temporal and spatial scales. Their sustainable future therefore depends not only on the conservation of historic buildings and monuments, but also on the recognition of the relationships, experiences and meanings through which communities continuously interpret and inhabit their places.

This keynote explores the concept of the memory of places as a critical dimension of sustainable heritage. Moving beyond an understanding of heritage primarily based on material persistence or institutional recognition, it considers how memory is embedded in spatial configurations, routes, landscapes, everyday practices, social relationships and lived experience. Particular attention is given to the different temporalities of continuity and change: material and morphological continuity may coexist with social or functional discontinuity, while places that have been transformed, abandoned or partially erased may continue to carry significant mnemonic meanings.

The discussion draws on research in historic settlements and cultural landscapes, with particular reference to the Vasilikos Valley in Cyprus, where long-term processes of habitation, production and mobility intersect with demographic change, displacement, transformation and different forms of heritage recognition. Historical and cartographic documentation, spatial and morphological analysis, and qualitative evidence from local narratives and lived experience provide complementary perspectives on how memory is spatially expressed, transformed or contested.

The paper argues that acknowledging the memory of places can broaden current approaches to sustainable heritage by connecting the conservation of material fabric with the social, cultural and experiential dimensions of place. Such an approach can contribute to more context-sensitive strategies for the interpretation, management and future transformation of historic settlements, understanding sustainability not simply as the preservation of inherited structures, but as the capacity to accommodate continuity, change and multiple meanings over time.

Keywords: memory of place; sustainable heritage; historic settlements; cultural landscapes; collective memory; lived experience; spatial continuity

FROM INDUSTRIAL MEMORY TO COLLECTIVE LIVNG: THE ADAPTIVE REUSE OF TOBACCO WEREHOUSES IN THE CONTEMPORARY CITY

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Abstract

Urban transformation often creates a rupture between contemporary development and cultural heritage, threatening the continuity of local identities and collective memory. Yet historic industrial buildings offer significant opportunities to reconnect past and present, contributing to urban resilience, social cohesion, and sustainable development. Beyond the preservation of architectural fabric, their adaptive reuse raises a fundamental question: how can industrial heritage become an active part of contemporary urban life and a shared resource for the future of cities?

This presentation explores the relationship between industrial memory, architectural transformation, and collective living through the study of former tobacco warehouses in Kavala and Xanthi, in northeastern Greece. From the nineteenth century, tobacco cultivation, processing, and trade shaped the economic, architectural, and cultural development of both cities. The tobacco warehouses that emerged from this historical context constitute not only significant architectural landmarks, but also material repositories of a complex, multicultural urban past. The decline of the tobacco industry transformed their economic role, leaving many buildings abandoned or disconnected from contemporary urban life.

Focusing on a former tobacco factory in Kavala, the study examines the potential of these industrial structures to support new relationships between architectural heritage, public life, and urban regeneration. An interdisciplinary approach brings together historical research, architectural documentation, conservation, and design exploration.

The educational dimension of this investigation is further developed through the Interdepartmental Postgraduate Programme "Local History, Culture and the Protection of Architectural Heritage: Interdisciplinary Approaches and Digital Applications," offered by the Department of Architecture at Democritus University of Thrace. Within this framework, this former tobacco warehouse in Kavala serves as a subject of architectural investigation and design, enabling postgraduate students to explore the relationships between historical documentation, heritage values, conservation, and adaptive reuse. The design process provides an opportunity to critically examine how the architectural character and collective memory embodied in industrial buildings can inform contemporary interventions and new uses, while addressing the challenges of integrating historic structures into the evolving urban fabric.

By bringing together heritage research, architectural design, and postgraduate education, this presentation approaches adaptive reuse as both a material and a social process. It argues that the future of industrial heritage lies not only in preserving the memory of former productive landscapes, but also in reactivating their spatial, cultural, and social potential. In this perspective, the transformation of tobacco warehouses becomes an opportunity to imagine more inclusive, resilient, and culturally grounded urban futures, in which the memory of the past remains an integral part of collective life.

Keywords - phrases: tobacco warehouses, Kavala, collective memory, collective living, adaptive reuse, cultural heritage

Special session: **"SEAS" AND "RIVERS" OF IDEAS**

Chaired by Prof Em. Konstantinos Moraitis
and Dr. Maria Markatou

"SEAS" AND "RIVERS" OF IDEAS: IN REFERENCE TO THE HELLENIC AND MEDITERRANEAN "WATERSCAPE"

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Abstract

The well-known international term "landscape" emphasizes its relationship to "land," to solid ground. However, the need for a conceptual expansion of our practical and theoretical interests has introduced the complementary terms "seascape" and "waterscape."

In a country like ours, Greece, endowed with the quality of the eastern Mediterranean and its idyllic network of islands, the first of these references, the "seascape", has, most obviously, a central interest. It appears to be environmentally, naturally central, but also culturally and politically central. Ideas of cultural and political reference emerge or sink in our seas, litter our coastlines, and embrace our islands. Let us refer to them by relating environmental sustainability to their cultural and political sustainability, the one that has saved our existence and kept us active and intelligent for millennia.

As for the "water landscape"? We are, of course, referring to water formations that may complement our landscape design, as well as the need for environmental protection and the promotion of wetlands, lakes, and river routes, in contact with or within urban areas or in the countryside. The recent, continuous catastrophic episodes convince us of the need to refer to their protection. However, our environmentally oriented "rivers of ideas" should not distance us from a second direction of interest. The one which, perhaps, still hosts nymphs and aquatic mythical deities in our lakes and rivers and which, certainly, constantly refers to references that run through our oldest and most recent history.

In our presentation we shall refer to a number of relevant projects: a branding strategy concerning the seascape of the northeastern part of the Aegean Sea, and two design projects (the first of them awarded in a panhellenic architectural competition) concerning cultural landscape interventions in the vicinity of rivers of Greece, in the territory of Thessaly and in the island of Crete.

Key words: seascape, waterscape, conventional museums, environmental sustainability, cultural and political sustainability, eastern Mediterranean, rivers of ideas in Thessaly and Crete.

SPATIAL PLANNING AND SOCIAL JUSTICE: MISLEADING PRACTICES AND DEPARTURE FROM THE PRINCIPLES OF THE "SUSTAINABLE AGENDA"

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Abstract

"Words have degenerated to the point of ultimate humiliation—bearing no responsibility whatsoever" (Ch. Missios). Over the last decade, a rapid departure of spatial planning from its social and environmental objectives has been observed. This has occurred due to the constantly changing institutional framework of spatial planning, its intense complexity, and the merely nominal participation of citizens. Consequently, serious questions arise regarding the new objectives of spatial planning amidst these multiple transformations, and the extent to which they align with the goals of socially just and democratic planning.

Regarding the new Local Urban Plans (TPS in Greek), a fragmentation of the planning process is evident, alongside a "technocratic and ostensibly pro-environmental procedure" that hinders meaningful understanding by citizens.

Processes for translating and interpreting the plan objectives are required so that citizens can participate substantively rather than merely formally. Significant spatial changes with serious social and environmental consequences are often concealed behind attractive titles and positive phrasing.

The country's reliance on tourism, combined with the weakening of the primary and secondary sectors, creates new challenges for spatial planning. Vested interests constrain the process, placing it at the service of specific entities and undermining the broader goals of sustainable development.

This article examines the rationale behind the complexity and ambiguity characterizing the plans and discourses associated with the "Local Urban Plans" currently under development—factors that directly foster citizen skepticism regarding new spatial planning announcements for their local areas.

Transparency and clarity in the language of the institutional framework and intervention plans are essential prerequisites for ensuring consistency in meeting the objectives of the sustainability agenda.

Key words: Spatial planning, Local Urban Plans, distortion of objectives, public discourses

WE ARE ALL DESIGNERS: PERMACULTURE AS A FRAMEWORK FOR APPROACHING THE LANDSCAPE

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Abstract
The presentation of permaculture, an innovative theoretical approach, proposes a way of thinking and designing based on observation, on understanding relationships and interdependencies, and on seeking solutions that connect people with the environment. Within this framework, design is not an exclusive domain of experts, but a process in which we all participate through our everyday choices and interventions.

The presentation focuses on the concept of "we are all designers" and approaches design through three fundamental questions: Where are we? Where do we want to get to? How can we move from one point to the other? This process is transferred from the level of everyday life to the level of spatial design and, more specifically, landscape design.

Through key principles of permaculture, such as observing systems, recognising relationships, working with natural patterns, understanding inputs and outputs, and using feedback, the landscape is approached as a dynamic and interconnected system, rather than as a predetermined form. Particular emphasis is placed on observing the actual use of space, as illustrated by the concept of desire lines, where people's movement patterns can become a starting point for design.

The presentation therefore explores the potential of permaculture to function as an educational and design framework for architecture and landscape, fostering a more systemic, participatory, and ecological understanding of design among students.

Keywords: permaculture, landscape design, systems thinking, participatory design, natural patterns, sustainable urban development

EXPLORING THE SMALL FORTIFIED SETTLEMENTS: SUSTAINABILITY, ACCESSIBILTY, HERITAGE CONSERVATION & DIGITAL TOOLS. THE CASE STUDY OF FOLEGANDROS, CYCLADES

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Abstract

Greece and the sea are two closely intertwined notions. The appearance and character of Cycladic settlements are in harmony with the endless variety of the Greek landscape, the extensive and intricate coastline, and its rich topographical variation. However, the natural environment is inseparably linked not only to the visual and spatial attributes of these settlements, but also to their cultural and historical dimensions. This synthesis is particularly pronounced in the small fortified settlements known as '*castra*' perched on precipitous cliffs which represent living cultural landscapes embodying historical evolution, collective memory and local identity.

The paper proposes a holistic approach to the historic urban landscapes of traditional settlements, focusing specifically on the small fortified villages of the Cyclades through a case study of Chora, Folegandros. Grounded in UNESCO's framework for urban heritage preservation and socioeconomic integration, this research examines cultural heritage enhancement as a catalyst for public space revitalization, improving the quality of life for both residents and visitors through inclusive practices.

The final outcome promotes the concept of an open-air Eco-museum and a process of reclaiming the public places of the contemporary Chora, which over the last eight years has experienced rapid urbanization, driven by prevailing planning policies to the detriment of the historic core. Furthermore, it advocates the integration of innovative technologies, such as digital applications and AI systems, to support: *material & immaterial* heritage protection, preservation and promotion, sustainability, accessibility, inclusive design, and immersive user experiences. Ultimately, technology should never replace authenticity for a destination; rather, it should serve to enhance it.

Key words: Folegandros, fortified settlements, sustainability, accessibility, Eco-museum, AI-Artificial Intelligence

ARCITECTURAL DESIGN & GENERATIVE AI

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Abstract

This research examines how Generative AI transforms the architectural design process, particularly the distribution of design activities and decisions between humans and AI. Within a shared academic architectural case study, three workflows are compared: Human-led, AI-heavy/AI-led, and Mixed-initiative/Hybrid. The comparison focuses not only on the final design outputs but also on their production process, including the generation and variation of alternatives, time and iterations, adherence to the design brief, and the relationship with the site and design intent. The findings indicate that Generative AI can significantly accelerate the production and exploration of alternatives; however, the speed and visual quality of its outputs do not necessarily ensure an understanding of the architectural problem. Human evaluation and design judgment therefore remain essential, while the Hybrid workflow emerges as a form of selective collaboration in which AI is used at specific stages of the design process.

Keywords: Generative AI, architectural design, design workflow, Research by Design, Human–AI collaboration, design agency.

FROM LEFTOVER TO LIVED IN: TERRAIN VAGUES OF LAPRAKA AS NEIGHBOURHOOD SOCIAL INFRASTRUCTURE

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Abstract

Rapid urbanization and uneven spatial development have contributed to the increase of underused spaces commonly described as terrain vague. In Tirana, the combination of planning permission and housing, informal building, and residual fragments of the city has contributed to a complex, complicated and fragmented urban fabric. This study considers Laprake in Tirane, Albania as a case study to analyze and explore the relationship between community and neighborhood scale wellbeing and the terrain.

A mapping-based analysis has been implemented to identify and categorize the different forms of vague terrain across the study area; questionnaires and observation then documented residents' perceptions, patterns of use, emotional responses, and everyday experiences of these spaces. A sample of 50 participants was surveyed in each study zone. A more in-depth understanding and reasoning of how these terrains are viewed and experienced has been made possible by walking through conversations with residents and nonresidents.

The results demonstrate that, in the Lapraka's context, terrain vague develops alongside planned urban environments and, through informal appropriation and adaptive use, gradually becomes a part in everyday neighborhood life. The research highlights out how these spaces shape perceptions of safety, accessibility, social interaction, and neighborhood well-being more broadly. According to the findings, terrain vague can serve as an informal neighborhood social infrastructure that facilitates daily movement, contact, adaptability, and shared use in addition to being interpreted as abandoned or leftover land. Bringing spatial analysis together with lived, experience-based observation, the thesis argues for urban development strategies that are both sensitive to context and oriented toward the community.

Key words: Terrain vague, well-being, informal development, social infrastructure.

Special Session:

MNEMOTECHNICS AND URBAN FORMATION: CONVENTIONAL MUSEUMS AND OPEN-AIR LANDSCAPE MUSEOGRAPHY

Chaired by **Prof Em. Konstantinos Moraitis**

MNEMOTECHNICS AND PLACE FORMATION: CONVENTIONAL MUSEUMS AND OPEN-AIR LANDSCAPE MUSEOGRAPHY

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Abstract

In his book *Writing and Difference* (French: *L'écriture et la différence*) the French philosopher Jacques Derrida describes memory as the key mental function that forms human cognition, on an individual as well as collective level. Nevertheless, he notes, memory cannot be stabilized. It is, continuously, in a state of transformation, not because of the continuous change of the surrounding socio-cultural context solely, but also because of the intentional political control.

It is in this context that place references have always been important receptors for the formation or contestation of collective memory. Monumental structures, buildings, sculptures, and monumental open-air public urban places intend to stabilize, present, and promote historical memory. At the same time, symbolic landscape references, 'Arcadias', dispersed all over the world, may also contribute to the emplacement of collective, cultural, and political imagery. In the opposite direction, it is in the open-air public urban places that social dispute, the embodied 'discourse', the collective debates, often aggressive, nevertheless socially important, are presented.

Concluding: In what ways could we promote critical 'mnemotechnics', critical reference to social memory, to social historic past and social future, using place formation? Could we re-'place' conventional monumentality and conventional museums, could we 'place' critical memory and open-air museography, in the urban-scape or in the out-of-cities landscape? In what ways could we invigorate critical discourse, using real material landscape formation or navigation to immaterial associations? Could this last immaterial voyage be invigorated through digital approaches, or would it be mutilated through the disembodiment of cultural relations?

Key words: mnemotechnics, place formation, conventional museums, open-air landscape museography

SELECTIVE COLLECTIVE MEMORY: THE OTTOMAN MENTZITION OF THE PARTHENON

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Abstract
Following the Parthenon's destruction 1687 by a Venetian bombardment during a siege of the Acropolis, the Ottomans constructed a small new mosque within the ruined temple, known as the "Mentzition" (Little Mosque), which stood inside the Parthenon until the first decades of the modern Greek state in the 19th century.

On 26 May, 1843, at the 7th meeting of the Archaeological Society of Athens, held on the Acropolis, the Society's secretary, Alexandros Rizos Ragavis, reported that the Mentzition, "having fallen into disrepair", had finally been removed the previous year, thus completing the "cleansing" of the Parthenon from this last remnant of Ottoman occupation. Ragavis attributed a powerful symbolism to this event, suggesting the Ottoman Mosque inside the 5th-century BC Greek temple had constituted a material and visible measure of comparison between Greece's ancient ancestors and "the tyrants, from whom we have shaken off the yoke."

The removal of the Mentzition clearly had not only practical but ideological significance, as it constituted another step in the larger process of restoring and presenting the Acropolis as the preeminent symbol of ancient Greece and of the newly established Greek state. The disparaging language found in Ragavis' report also reveals the way in which 19th-century Greek society dealt with its remaining physical traces of Ottoman culture. Today, we know the appearance of the Mentzition mainly from the drawings and engravings of European travellers and artists who visited Athens prior to Greek Independence and the Mentzition's subsequent disappearance.

This presentation examines the duality evident in the treatment of cultural remains in 19th-century Greece, and especially the determination with which certain periods of history and their material traces were deemed unworthy of preservation or even rejected and removed as undesirable. This selective cultural management of Greece's past was not limited to the destruction of single structures, but contributed also to the disappearance of entire historical phases from the visible cultural landscape, leaving centuries-long gaps in the archaeological record and historical continuity of the place. At the same time, it shaped a selective collective memory, in which certain periods emerged as fundamental, while others were silenced, downgraded or literally erased from public spaces and the public narrative.

Key words: Athens, Acropolis, Parthenon, Mentzition, Mosque, Neoclassicism, Ottoman period, collective memory.

THE MYTH OF EFYRA. REGENERATION OF THE COASTAL FRONT IN KALAMIA, CORINTH.

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Abstract

The paper presents an integrated plan for the regeneration of the coastal front of Kalamia, in the city of Corinth, developed and approved as the 1st prize, in the context of architectural competition.

'To dwell first in this land, Efyra daughter of Oceanus." It all started from the sea and Corinth owes its birth to it.

The coastal axis highlights the topographical peculiarity of the city. The area of "Kalamia" is part of the overall coastal front of Corinth, which extends from the area of ancient Diolkos and the Isthmus, to the area of the Ancient Port of Lechaio.

The proposal combines contemporary principles of urban-environmental design with a focus on high-quality spatial, aesthetic, and ecological outcomes, aiming to transform the coastal area into a cohesive and vibrant urban landscape.

The project addresses approximately 1,750 meters of coastline, using greenery as a unifying element that mediates between the urban environment, the transitional seaside zone, and the sandy beach.

Six distinct zones are identified, each with unique physical characteristics and boundaries. These zones are composed into a modular yet cohesive system,employing consistent design vocabulary while adapting materials and scale to the functional and temporal needs of each space.

Movement networks and programmatic activities connect the zones internally and link Kalamia to broader cultural landscapes, including Poseidonia, the ancient Diolkos, and the port of Lechaio, forming a potential continuous cultural route.

Ecological design strategies restore and enhance the coastal environment, highlighting its natural beauty while supporting biodiversity and public accessibility. The zones function as active nodes for social interaction, leisure, and cultural engagement, reinforcing both environmental quality and urban vitality.

The project demonstrates the potential of landscape architecture to balance ecological resilience, cultural heritage, and urban functionality. By integrating environmental, historical, and social dimensions, the Kalamia coastal front is transformed into a landmark landscape that strengthens local identity and provides a vibrant, engaging space for residents and visitors alike.

Keywords: Coastal regeneration; Landscape architecture; Urban ecology; Cultural landscapes; Public space; Coastal connectivity; Sustainable design;

Special session:

CO2 CAPTURE AND STORAGE: BRIDGING TECHNOLOGY, SOCIETY AND GOVERNANCE

Chaired by **Dimitrios Mendrinos** and **Dr. Olympia Polyzou**

SOCIETAL RISK GOVERNANCE STRATEGIES FOR CAPTURE, TRANSPORT, STORAGE, AND MONITORING OF CARBON DIOXIDE IN GREECE

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Abstract

Carbon Capture and Storage (CCS) is a critical decarbonisation technology, yet its deployment is frequently delayed by social, regulatory, and financial risks. This contribution presents a set of risk governance strategies tailored to the Greek CCS sector, addressing six interlinked risks: siting opposition, leakage concerns, monitoring credibility, regulatory immaturity, negative public opinion, and inability to reach Final Investment Decision (FID). The work is intended to benefit policymakers, regulators, project developers, and researchers by translating generic risk analyses into a country-specific, actionable governance framework that clarifies who is responsible for which measures and when they should be triggered.

Methodologically, the most salient risks and causes for Greece were first identified through two focus group meetings and a nationwide opinion survey conducted in 2025. Risk diagrams (bow-ties) originally developed by the RamonCO consortium were then adapted to retain only these Greek relevant risks and causal branches. The refined bow-ties were subsequently validated and enriched during a second pair of risk dynamic workshops in spring 2026, and the resulting insights were consolidated into structured governance strategies for each risk.

The findings show that effective governance requires combining preventive controls addressing root causes with tiered, escalating consequence-management measures, most often organised into four or five parallel response domains (e.g., monitoring and verification, emergency preparedness, regulatory and financial assurance, and public communication). Notable ownership decisions, such as assigning seismicity communication to universities rather than developers, highlight the role of credible, non-project actors in building public trust. These outputs provide a transferable template for structuring CCS risk governance in emerging deployment contexts.

Key words: Carbon Capture and Storage (CCS), Risk governance, Bow-tie risk analysis, Public perception and acceptance, Regulatory framework, Stakeholder engagement, Final Investment Decision (FID)

CITIZENS' PERCEPTIONS REGARDING THE CAPTURE, TRANSPORT, STORAGE, AND MONITORING OF CARBON DIOXIDE IN GREECE

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Abstract

Public acceptance is a decisive factor in the deployment of Carbon Capture and Storage (CCS), yet empirical evidence on citizens' perceptions in Greece has been limited. This contribution presents the design and results of a nationwide opinion survey conducted in Greece as part of the RamonCO project, examining public awareness, concerns, and support regarding the capture, transport, storage, and monitoring stages of CCS. The findings are intended to benefit policymakers, project developers, and researchers seeking an evidence-based understanding of societal attitudes that can inform risk governance, communication strategies, and siting decisions for CCS infrastructure in Greece and comparable national contexts.

Methodologically, a representative and random sample of the Greek population (n = 1010) was surveyed in December 2025 using a structured Greek-language questionnaire of approximately 60 questions, jointly developed by CRES, NORCE, TNO, and UFZ and administered with a professional survey company. The same instrument was concurrently deployed in Germany, the Netherlands, Norway, and Romania, enabling cross-country comparison. Respondents were profiled by demographic and attitudinal characteristics (age, gender, region, education, industry proximity and experience, political orientation), and regression models were used to identify predictors of overall CCS opinion, stage-specific concerns, and voting intentions.

Findings indicate that while most respondents recognise CO2 emissions reduction as the primary benefit of CCS, leakage-related risks dominate spontaneous concerns. Concern rises from capture to transport and peaks at storage, being marginally higher offshore than onshore. Support for CCS implementation in Greece is moderate with a mixed pattern of responses. Most respondents want to be informed about CCS developments, while a smaller share seeks active participation in decision-making, underscoring the need for transparent, staged public engagement.

Key words: Carbon Capture and Storage (CCS), Public perception, Social acceptance, Risk perception, Stakeholder engagement, Opinion survey.

CARBON CAPTURE AND STORAGE TECHNOLOGY CHAIN PERCEPTIONS IN GERMANY: ISSUES OF DECARBONISATION JUSTICE

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Abstract

Carbon Capture and Storage (CCS) is framed by experts as essential for global climate neutrality – yet its deployment is shaped not by technical feasibility alone. Rather, understanding societal embeddedness of CCS requires a multidimensional perspective that considers societal, political, economic and environmental aspects. Drawing on comparative case studies in Norway, the Netherlands, Germany, and Greece, this study examines how CCS risks are not merely "perceived" by a seemingly homogenous public but emerge in national contexts of regulatory culture, past technology experiences, geological formations, and group-specific (climate) vulnerabilities. Fears, concerns and goals that arise from these societal constellations are not simply an issue of CCS "acceptance" but pose questions of decarbonisation justice. Using mixed methods (survey, interviews, focus groups) and a transdisciplinary approach, we find that Germany's CCS risk profile features many concerns – among them the delay of decarbonisation is especially prominent. This concern is particularly pronounced in the German case study and shows that risks are framed in relation to broader environmental crises and climate governance goals and by whether institutions demonstrate responsiveness to societal concerns by considering and including affected citizens in risk management processes.
Our multidimensional framework acknowledges different CCS configurations and that one does not need to "solve" public resistance, but to map the conditions under which risk governance can be just in terms of decarbonisation. We reject the idea that better communication or risk-benefit calculations alone will "fix" public acceptance. Instead, we argue that societal risks must be taken seriously and addressed through policies and governance that acknowledge publics as relevant actors in risk negotiation. CCS is not a technology to be "accepted", but a socio-technical process whose legitimacy requires inclusive, accountable, and context-sensitive engagement rather than expert authority alone.

Key words: Carbon Capture and Storage (CCS), Risk governance, Public perception, Regulatory framework, Decarbonisation Justice

CITIZEN BEHAVIOUR AND FACTORS INFLUENCING THE ADOPTION OF CIRCULAR ECONOMY CONSTRUCTION PRODUCTS: A CASE STUDY FOR GREECE

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Abstract

Adopting circular economy strategies in the construction sector is vital for achieving a more sustainable environment, since this sector is a major CO_2 emitter and a significant consumer of energy and raw materials. Such strategies include reusing, repairing and recycling construction materials and components. To enhance the adoption of these strategies, it is important to investigate citizens' perceptions, attitudes, and behaviour towards the use of circular economy construction products (i.e., reused, repaired, and recycled) and their willingness to pay for them compared to conventional products.

To achieve this objective, a quantitative social survey was conducted, involving approximately 500 citizens in Greece, to analyse their perceptions and attitudes towards circular economy aspects and practices in the construction sector. The survey was conducted in December 2023, and the questionnaires were collected through a public opinion surveying company. Statistical analysis of the dataset revealed that Greek citizens, although they have positive intentions and attitudes towards circular economy construction products, would be willing to pay less for reused materials/components than for other non-conventional materials/components. Using regression models, the study also investigates the factors that

affect citizens' decisions to select and pay for these materials and components, such as demographic and socioeconomic characteristics, perceived benefits and risks, market strategies, social norms, perceived behavioural control and environmental concerns.

The findings of this study are expected to contribute to a better understanding of Greek citizens' behaviour, enabling the design of appropriate policies to enhance circularity and the use of reused, repaired, and recycled materials, with the aim of creating a sustainable construction environment.

Keywords: Circular economy, construction sector, citizens, behaviour, attitudes, perceptions, willingness to pay

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SOCIETAL INTEGRATION FRAMEWORK FOR TECHNOLOGY DEVELOPMENT OF CCU E-FUELS

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Abstract

Carbon Capture and Utilization (CCU) converts CO_2 from industrial sources or direct air capture into synthetic fuels capable of directly replacing fossil-based alternatives in aviation, shipping and heavy transport. While CCU pathways are technically advancing, as illustrated by pilot-scale production of e-DME, e-methanol and e-jet fuel within the EU-funded Horizon Europe project STEROPE (Grant Agreement No. 101235659), their deployment also depends on navigating public scepticism, regulatory frameworks originally designed for fossil systems, market immaturity, multi-actor stakeholder complexity, financial risk and concerns over environmental credibility.

This paper presents the Societal Integration Framework (SIF), developed to help technology developers, policymakers and stakeholders assess and manage this non-technical dimension of CCU deployment. Building on the Societal Embeddedness Level (SEL) method originally devised for carbon capture and storage, the SIF adapts and extends it specifically to CCU synthetic e-fuels. Methodologically, it structures assessment around the following six societal dimensions: Environmental Impact, Impact to Society, Public & Stakeholders, Policy & Regulations, Market, and Financial Resources. Each dimension is evaluated across five Societal Integration Levels (SIL 0–4, from opposition/ignorance to trust), mapped against the Technology Readiness Level (TRL 1–9) scale and its development phases (Concept, Testing/Validation, Demonstration, Commercial Deployment).

For each dimension, subdomains and milestones are defined, with achievement verified through yes/no research-question checklists answerable via expert interviews, focus groups or public surveys. The main result is a detailed, dimension-by-dimension milestone framework, covering aspects such as lifecycle impact assessment, stakeholder mapping, permitting, certification and business-case maturity, which offers a structured, replicable tool for tracking

societal readiness alongside technical progress. The SIF framework has been validated with the STEROPE consortium.

Key words: Carbon Capture and Utilization; e-Fuels; Societal Integration Framework; Technology Readiness Level; Societal Readiness Levels; Stakeholder Engagement; STEROPE

THE SHEETS "SORBENT BASED PROCESSES FOR HIGHLY EFFICIENT AND COMPACT CO_2 CAPTURE TECHNOLOGIES" PROJECT

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SHEETS "Sorbent based processes for highly efficient and compact CO_2 capture technologies" is a research and demonstration project funded by the Clean Energy Transition Partnership-2023 (CETP-2023 HORIZON EUROPE program), which started in April 2025 with a duration

of 33 months. The SHEETS consortium involves 4 Research Organisations [SINTEF (Coordinator) CNRS, CRES and RISE], 3 Large Enterprises (Saint-Gobain, TotalEnergies and KANFA), a municipal enterprise (BIR) and a non-profit organization (Axel' One) from 4 countries (Norway, France, Sweden and Greece). The SHEETS project involves the following development steps: 1) preparation and testing of structured sorbents, 2) adsorption process cycle design and process optimization, 3) design and construction of a proof-of-concept demonstrator (in Norway) to validate the technology at TRL5 for both DAC/low CO2 industrial emissions and post-combustion scenarios, and 4) sustainability assessment through Techno-economic Analysis (TEA), Life Cycle Assessment (LCA) and an assessment of social impact, to maximize societal impact. The overall objective of the SHEETS project is to develop cheap and scalable sheet-shaped sorbent modules for CO_2 capture processes having optimal volumetric sorption capacities and fast sorption kinetics giving CO_2 purities above 95% and capture rates above 90% using sorption/desorption cycle times below 2 minutes for end-of-pipe/post-combustion contexts to assure a reasonable footprint of the process. The main aim of the project is to optimize the production and performance of sheet-shaped sorbents for a limited number of selected sorbents for CO_2. Successful development in the project will contribute to minimizing or avoiding adverse impact on human health and the environment since solid sorbent-based processes are considered to have less emissions to the atmosphere and less waste issues than state-of-art amine scrubbing-based technologies.

Key words: Carbon Capture, structured sorbents, low temperature sorbents, Direct Air Capture

Special session:

MARINE AND LAND SUSTAINABLE ENVIRONMENT

Chaired by **Prof Bitsani Eugenia** and **Prof Koundouri Phoebe**

RISK PERCEPTION AND GOVERNANCE IN THE CONTEXT OF ENVIRONMENTAL CRISIS: A CASE STUDY OF THE MASS FISHKILL IN THE PORT OF VOLOS IN 2024

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Abstract

This paper aims to capture the public risk perception surrounding a mass fishkill that occurred in the port of Volos, Greece and the neighbouring areas during 2024. This event is viewed as a cascading risk resulting from the severe storms "Daniel" and "Elias" and the floods that struck the city of Volos in 2023. This study is grounded in risk theory and examines media coverage of the event and the dissemination of information, residents' trust in administration and organizations, vulnerability and exposure to negative impacts, risk characterization and signal value. To review the dissemination of information, content analysis was performed on Greek articles published online, interviews were conducted with members of the local scientific community and local management officials, and finally, questionnaires were distributed to residents of Volos to map social perceptions. The results showed that there was agreement regarding the immediate cause of death -the difference in salinity and the lack of oxygen- with residents also citing pollution as a cause. As for the root cause, the event is attributed more to the management of the extreme natural event than to the extreme event itself. The negative consequences were found to be primarily economic and social, while the environmental impacts could have potentially been significant but were mitigated. Experts characterize the risk as complex, while residents' responses are roughly evenly divided between complex, uncertain, and ambiguous risks. Residents' trust in the administration is generally low and decreases from decentralized to centralized administration. Lastly, during coverage of the incident, there was an increase in uncertainty and emotional charge in statements prior to the incident's peak.

Keywords: social research, risk perception, risk governance

MAPPING A BIOCULTURAL SEA ROUTE: LIGHTHOUSES AND SHIPYARDS AS TANGIBLE MARITIME HERITAGE FROM THE SARONIC TO THE MESSINIAN GULF

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Abstract
Within the theoretical framework of the Biocultural City model, this paper examines the maritime cultural heritage of the southern Peloponnese as a network of tangible and intangible elements linking coastal communities along a sea route extending from the Saronic Gulf to the Messinian Gulf. Building on earlier research into the intangible heritage of wooden shipbuilding and traditional boats in Piraeus, the study widens the scope to include the historic shipyards (*karnagia*) of Hydra and Spetses, and extends southward to the lighthouses of Cape Tainaron, Gytheio, and Kitries on the Messinian Gulf. It is argued that the pairing of *shipyard* and *lighthouse* constitutes a distinctive dipole of intangible and tangible culture: the craft knowledge of wooden shipbuilding, transmitted across generations, corresponds functionally and symbolically to the fixed, visible landmark of the lighthouse, together forming a network of navigation points, collective memory, and local identity along the coast. Adopting a qualitative, literature and case-based methodology, the paper maps this dipole across successive gulfs of the southern Peloponnese, proposing a **Biocultural Map** as both an analytical tool and a visual output of the research a single cartographic representation locating each shipyard–lighthouse pair along the route and making visible their combined contribution to place-based identity. The analysis proposes that the coastal southern Peloponnese be approached as a single biocultural maritime corridor, offering benefits for readers engaged in cultural heritage management, sustainable coastal tourism, and regional development policy. Findings suggest that pairing endangered intangible craft heritage with protected tangible monuments can support cross-sectoral strategies for local economic development, employment, and safeguarding of intangible cultural heritage under the UNESCO 2003 Convention, while the proposed Biocultural Map offers a replicable tool for identifying and communicating similar heritage corridors elsewhere.

Keywords (7): Biocultural City, Biocultural Mapping, Wooden Shipbuilding,Lighthouses, Maritime Cultural Heritage, Southern Peloponnese, Sustainable Cultural Tourism

THE CONSEPT OF ECOSYSTEM SERVICES IN MUNICIPAL GENERAL PLANS: EVIDENCE FROM POLISH SPATIAL PLANNING LAW

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Abstract
The ecosystem services concept highlights the links between socio-economic systems and ecosystems and their contribution to human well-being. Spatial planning is widely regarded as a field particularly suited to the application of this concept to enhance urban and regional environmental sustainability. This article examines the extent and manner of the reception of the ecosystem services concept in Polish spatial planning law. The analysis focuses on municipal general plans, a new mandatory planning instrument of key importance for local environmental management and spatial structure. The study is based on a linguistic analysis of the statements of reasons accompanying adopted municipal general plans, conducted using the doctrinal legal method. The aim was to determine whether the concept of ecosystem services is present in these documents and how it has been incorporated into them.

This study provides valuable insights for international researchers and planners by illustrating the practical barriers encountered when translating environmental theories into binding local regulations. The findings show that the term "ecosystem services" appears only sporadically, while related terms are also rare. The concept is used to justify planning decisions but does not constitute a significant component of them. It is addressed primarily in the context of traditional environmental protection, leaving critical aspects like water management, climate adaptation, and biodiversity regulation underrepresented. No evidence was found of its use in public participation processes. The study confirms that the potential of the ecosystem services concept has not yet been fully reflected in planning practice, which may limit the effectiveness of local policies in building resilient and sustainable municipal environments.

Keywords: ecosystem services, spatial planning, municipal general plans, environmental law, environmental management, green infrastructure, Poland.

Session:

CULTURAL SUSTAINABILITY AND THE CITY PHYSIOGNOMY

THE FORMATION OF THE PHYSIOGNOMY OF THE CITY EPIDAURUS THE OPINION OF RESIDENTS AND VISITORS

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Abstract

The present paper refers to the physiognomy of the city and is a study carried out by the Department of Economics and Sustainable Development of Harokopio University. The aim is to investigate the factors that contribute to the formation of this physiognomy and the opinion of residents and visitors on the issues in question. As a case study, the city of Epidaurus of the Region Peloponesse is chosen.

In order to answer the main questions of the work and to investigate the main factors that shape the physiognomy of the city of Epidaurus a survey was carried out aimed at the residents of and visitors to the city. For the needs of the research, a questionnaire was created which included 20 (19) closed-type structured response questions, was anonymous and distributed to 150 people. The research was carried out in the months of October and November 2026. The questionnaire was addressed exclusively to adults, aged 18 to 70. The paper concludes with interesting conclusions and proposals. An important conclusion is that in order to protect the special physiognomy of the city of Epidaurs strategies related to the more general protection of all issues related to its sustainable development should be implemented. It is proposed that both the local government, as well as the businesses of all service and production branches, work towards the protection and highlighting of the special
character of the city Epidaurus.

Key words: Physiognomy of the city, sustainable development, the city Epidaurus.

THE PHYSIOGNOMY OF NAXOS, GREECE: LOCAL IDENTITY AND CHALLENGES FOR SUSTAINABLE DEVELOPMENT

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Abstract

The character of a place is defined as its unique identity, encompassing its distinct natural, cultural, social, economic, and architectural features. Understanding these elements is essential for achieving sustainable local development, particularly in island destinations that face mounting economic, social, and environmental pressures. In this paper, we aim to explore the distinct character of Naxos—an island in the Cyclades—by focusing on the relationship between local identity, contemporary development, and the quality of life of its inhabitants in the modern era.

Naxos is the largest island in the Cyclades archipelago. Its geographical location and natural environment have been pivotal to its economic development since ancient times. The island's traditional settlements, architectural heritage, and cultural and economic activities remain vibrant to this day. All of this creates opportunities for local development, as well as challenges regarding the sustainability of the area.

This study will focus on both bibliographic references and field research. It's aim is to map all the elements that constitute the physiognomy of the island. At the same time, through the use of questionnaires, the project will try to uncover how the residents perceive the features that define their home, the changes occurring on the island, and the social, environmental, economic, and cultural impacts of its development. Particular emphasis will be placed on the changes brought about by the rapid growth of tourism in recent years.

Therefore, the research aims to identify the elements that shape the physiognomy of Naxos, as well as to highlight the voices of its citizens regarding contemporary challenges surrounding the concept of sustainable development in this island setting.

Key words: Naxos island, physiognomy of place, cultural heritage, local identity, sustainable development, island development, tourism

THE FORMATION OF THE PHYSIOGNOMY OF THE CITY OF AMFISSA. THE OPINION OF RESIDENTS AND VISITORS.

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Abstract

The present paper refers to the physiognomy of the city and is a study carried out by the Department of Economics and Sustainable Development of Harokopio University. The aim is to investigate the factors that contribute to the formation of this physiognomy and the opinion of residents and visitors on the issues in question. As a case study, the city of Amfissa of the Region Central Greece administrative region (*Stereá Elláda*) is chosen.

In order to answer the main questions of the work and to investigate the main factors that shape the physiognomy of the city of Amfissa a survey was carried out aimed at the residents of and visitors to the city. For the needs of the research, a questionnaire was created which included ten (10) closed-type structured response questions, was anonymous and distributed to 100 people. The research was carried out in the months of October and November 2026. The questionnaire was addressed exclusively to adults, aged 18 to 75+.

The paper concludes with interesting conclusions and proposals. An important conclusion is that in order to protect the special physiognomy of the city of Amfissa strategies related to the more general protection of all issues related to its sustainable development should be implemented. It is proposed that both the local government, as well as the businesses of all service and production branches, work towards the protection and highlighting of the special character of the city of Amfissa.

Key words: Physiognomy of the city, sustainable development, the city of Amfissa

THE ORACLE OF DELPHI AS A PILLAR OF ANCIENT HISTOR: CULTURAL HERITAGE AND ITS CONTRIBUTION TO REGIONAL DEVELOPMENT

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Abstract
The present study examines the Oracle of Delphi as one of the most significant pillars of ancient history, analyzing the dynamic relationship between cultural heritage and contemporary regional development. The first part approaches the historical, religious, and diplomatic role of the Oracle as the "Navel of the Earth" (Omphalos) in the ancient world, as well as its designation as a UNESCO World Heritage Site.

Subsequently, the research focuses on the mechanisms through which the archaeological site functions as a driver of economic and social development for the wider region of Phocis and Central Greece. Through the analysis of cultural tourism, the impact of visitor flows on local entrepreneurship, employment, and the improvement of regional infrastructure is examined. Finally, the study addresses the challenges of sustainable management, proposing strategies for preserving the natural and archaeological beauty, while enhancing the modern role of Delphi as a global center for cultural and conference meetings.

Keywords: Ancient History, Cultural Heritage, Regional Development, Cultural Tourism

READING ANO SYROS THROUGH WATER: LANDSCAPE, MEMORY AND HERITAGE ALONG A CULTURAL ROUTE

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Abstract

Water is a fundamental natural element, inextricably linked to the landscape, people's daily lives, memory, and cultural heritage. Cultural routes represent a practical application of cultural heritage interpretation aimed at education, raising awareness, and recreation. A place's unique identity is a palimpsest of spatial and social phenomena as they evolve and transform over time.

This study emphasizes water as an interpretive lens and the cultural route as an analytical tool for interpreting the character of Ano Syros. The cultural route is examined as a "spatial narrative" that connects materiality, everyday practices, memories, and symbolic meanings.

To adopt a multi-layered approach to the settlement's cultural landscape, the study draws upon field surveys, archival and contemporary photographs, mapping, documentation of points of interest, and narratives. Existing creative visualizations, such as video art, collages, and maps, are also utilized as supporting interpretive media. The route's stops create a multi-layered "mapping" that captures the relationships between the landscape's interconnected dimensions: the spatial-material, the social, the mnemonic, and the intangible. The aforementioned exploration highlights the heritage of Ano Syros as a network of relationships between material remains and intangible experiences.

Beyond highlighting the identity of Ano Syros, the aim is to showcase the relationship between water and this specific place, while also presenting the cultural route as both a conceptual and physical thread that organizes the landscape's chaotic information, serving as a means to synthesize and publicly interpret its multiple layers. Furthermore, the objective is to underscore the potential of multimedia representations to facilitate the perception of the place as a lived and dynamic cultural experience.

Key words: Place Physiognomy, Heritage, Creative Mapping, Cultural route, Landscape, Water, Ano Syros

Session:

SOCIAL SUSTAINABILITY

MIGRATION-REFUGEE MANAGEMENT POLICIES: THE ROLE OF LOCAL GOVERNMENT

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Abstract

This study examines the role of Local Government in the management of the migration issue, with emphasis on both the European and national institutional framework and the perceptions of citizens. The contemporary migration and refugee flows, the European policy framework, as well as the position of Greek local government and the basic integration structures, such as the Migrant Integration Centers and the Migrant and Refugee Integration Councils, are presented. The institutional limitations, the financial dependence on European programs and the need for multi-level governance are highlighted. The research part is based on quantitative research using a structured questionnaire. The results show that citizens display a somewhat cautious attitude towards the management of migration by Local Government, evaluating its actions as mainly "moderate" or "insufficient". At the same time, the majority believes that the presence of immigrants also negatively affects the local society, a fact that is associated with a fairly low intention of personal participation in integration actions, while a significant core of citizens with a positive disposition for active involvement is also recorded. In conclusion, the study highlights that the effective management of immigration at the local level requires institutional strengthening of municipalities, stable funding and strengthening of social cohesion through participatory policies.

Keywords: Local Government, Migration Flows, Social Integration, KEM, Social Cohesion, ACCMR, MIPEX, UNHCR

SUSTAINABLE AND ACCESSIBLE DESIGN: GREEN ENERGY AND SUSTAINABILITY IN HEALTHCARE ENVIRONMENT FOR PEOPLE WITH DISABILITIES

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Abstract
This study explores sustainable, accessible design in healthcare environments, focusing on how green energy and sustainable practices improve services and quality of life for people with disabilities. It emphasizes the role of interior architecture in creating spaces that promote equality, health, well-being, and environmental responsibility, while incorporating therapeutic and human-centered design principles.

The research links sustainability with Universal and Accessible Design principles, which provide a foundation for including people with disabilities in built environments. By employing thoughtful spatial planning, ergonomic and user-friendly materials, and well-organized interior spaces, interior architecture can improve the functionality, safety, and psychological comfort of healthcare users.

A key focus is on integrating renewable energy sources, sustainable materials, and modern technologies that reduce buildings' environmental impact while enhancing indoor environmental quality. Natural lighting, biophilic design elements, and adaptable spaces promote well-being and a therapeutic atmosphere, supporting users' connection to the natural environment and aiding functional and psychological recovery.

The study draws on selected case studies to highlight a holistic, human-centered approach to healthcare design, where accessibility and sustainability work together to create resilient, user-friendly, and environmentally responsible spaces. This approach ensures that healthcare environments remain effective and inclusive over time.

Ultimately, the study concludes that sustainable and accessible design is more than a technical or aesthetic choice; it is an ethical and social responsibility. Prioritizing equal access, health protection, and quality of life for healthcare users makes such design essential to a fair, human-centered, and sustainable healthcare system. This underscores the importance of integrating sustainability and accessibility as fundamental components in healthcare architecture and interior design

Keywords: Healthcare Architecture; Universal Design; Accessibility; Sustainability & Bioclimatic Design; Persons with Disabilities (PwD); Smart Hospitals & IoT; Biophilic Design; Building Management Systems (BMS); LEED Certification; Human-Centered Architecture; Evidence-Based Design (EBD); UN Sustainable Development Goals (SDGs); Interior Architecture;

EKISTICS AND DISABILITY: CONNECTING IDEAS, DESIGN AND PLANNING DEBATES

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Abstract
A close collaborator of Constantinos A. Doxiadis, Panayis Psomopoulos addressed the relationship between disability and the built environment in his article "Disabled People in Disabling Settlements." His argument that human settlements could themselves create disabling conditions raises questions about how disability was understood within Ekistics, and how such concerns entered architectural and planning debates at a time when established assumptions about disability were increasingly being challenged.

This paper examines the emergence of disability-related thinking within Doxiadis's intellectual circle, considering its relationship to the wider social and political developments of the 1960s and 1970s. Particular attention is given to the extent to which ideas associated with emerging disability movements found expression in Ekistics, whether through direct engagement or through broader exchanges within international planning networks. Drawing on archival material, the research follows Psomopoulos's involvement in international conferences, the Delos Eleven Declaration, and discussions that continued after Doxiadis's death, including those surrounding the 1976 United Nations Conference on Human Settlements in Vancouver. These sources provide a basis for examining how questions of disability entered discussions about the organization of human settlements, and whether they challenged prevailing approaches to planning or remained peripheral to them.

Rather than treating accessibility as a self-evident concern of contemporary design, the paper considers its historical emergence within a field primarily concerned with the spatial, social, and environmental organization of settlements. In doing so, it seeks to establish the place of disability within the history of Ekistics and to examine the tensions between its universal ambitions and the diverse needs and experiences of the people for whom settlements were planned.

Keywords: disability, accessibility, Ekistics, human settlements, Panayis Psomopoulos

EVALUATING EMPLOYMENT OUTCOMES FOLLOWING PARTICIPATION IN AN E-MENTORING PROGRAMME AMONG VULNERABLE GROUPS

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Abstract

Background: The increasing digitalisation of employment services creates new opportunities to support the employability and labour-market integration of vulnerable populations. At the same time, it highlights the need for personalised and socially oriented digital interventions.
Aim: This study examined the effectiveness of an e-mentoring programme in improving employment-related outcomes among vulnerable population groups.
Methods: An e-mentoring application was developed by the Hellenic Mediterranean University. Participants attended a series of e-mentoring sessions. The intervention was evaluated using a six-point Likert-scale questionnaire assessing satisfaction with the platform, skills acquisition, job-search outcomes, and emotional changes. An exit questionnaire was administered at least six months after completion of the e-mentoring process to assess employment-related outcomes.
Results: A total of 105 individuals completed the exit questionnaire. Of these, 71 participants (67.6%) were women, and 77 (73.3%) had an educational level below upper secondary education. Seventy-four participants (70.5%) reported on finding a job or improving their employment position following the programme. In addition, 90 participants (85.7%) stated that they would participate again in a similar e-mentoring programme. No, statistically significant differences in employment outcomes were found by sex (p=0.370) or educational level (up to secondary education versus above secondary education; p=0.723). However, satisfaction, self-esteem, professional development, and perceived ability to use the platform were significantly higher among participants who reported finding a job or a better job than among those who did not ($p < 0.001$).
Conclusion: E-mentoring may be an effective approach for supporting vulnerable populations seeking employment or wishing to improve their employment position. Positive employment-related outcomes may be associated with increased self-esteem, skills acquisition, and positive emotional changes following the intervention. Longer-term follow-up studies are needed to determine whether these employment outcomes are sustained over time.

Keywords: vulnerable populations; e-mentoring; employability; satisfation

BEYOND ADDICTION RECOVERY: SOCIAL AND OCCUPATIONAL REINTEGRATION AS A DIMENSION OF SOCIAL SUSTAINABILITY IN GREECE

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Abstract

Social and occupational reintegration of individuals recovering from substance use disorders is an important dimension of social sustainability, as it relates to equal opportunities, social inclusion, and participation in economic and social life. This study explores the challenges associated with reintegration and examines how support services contribute to this process, with particular emphasis on access to employment, workplace experiences, and the persistence of social stigma and discrimination.

The study employed a qualitative research approach based on semi-structured interviews with beneficiaries and staff members of two services operated by the Greek Organization Against Drugs (OKANA): the Social Reintegration Unit and the Athens Treatment Support and Education Unit. The research involved 31 participants, including beneficiaries, employees and heads of the two services. The collected data were analysed thematically, focusing on participants' experiences with support services, access to employment, social inclusion and the factors influencing long-term occupational stability.

The findings indicated that, despite the perceived contribution of reintegration programmes, achieving stable and equitable social and occupational integration remains a significant challenge. Social stigma, discrimination, adverse socioeconomic conditions, increasing labour market demands and limited workplace awareness of substance use disorders emerged as major barriers. Furthermore, access to employment did not necessarily ensure equal treatment, social acceptance or long-term job security.

The study concluded that social reintegration constitutes an essential dimension of social sustainability, extending beyond individual recovery and therapeutic support. Effective and lasting reintegration requires supportive institutional frameworks, inclusive labour market practices and broader societal efforts to reduce stigma and discrimination. Promoting equal employment opportunities, strengthening social acceptance and ensuring continued support for individuals in recovery are therefore crucial to fostering social cohesion, and advancing sustainable and inclusive development.

Keywords: Social reintegration; substance use recovery; social exclusion; occupational integration; social sustainability; sustainable development.

Session:

HEALTH AND SUSTAINABILITY

GENERO CROTON Y SU ACTIVIDAD ANTIOXIDANTE FRENTE AL ESTRES OXIDATIVO: EVIDENCIA EXPERIMENTAL, VIGILANCIA TECHNOLOGICA Y OPORTUNIDAD DE DISENO BIOMEDICO

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Abstract

Introduction. Oxidative stress results from an imbalance between the production of reactive oxygen and nitrogen species (RONS) and the capacity of endogenous antioxidant systems to neutralize them. This mechanism is central to the progression of chronic diseases including diabetes, cardiovascular pathologies, neurodegeneration, and impaired cutaneous wound healing. The genus Croton (Euphorbiaceae), comprising over 2,000 pantropical species, has attracted attention as a source of bioactive metabolites—particularly flavonoids, phenolic compounds, and terpenoids—with demonstrated antioxidant potential. From a Biomedical Engineering perspective, the interest extends beyond cataloguing phytochemical activity: the objective is to translate that evidence into a concrete design opportunity for a controlled-release topical biomedical device.
Methodology. A narrative review with technology intelligence was conducted. Databases consulted included Scopus, ScienceDirect, and PubMed, using the search equation: ("Croton" OR "Croton lechleri" OR "Euphorbiaceae") AND ("antioxidant activity" OR "oxidative stress") AND ("bioactive compounds" OR "biomedical application"). Patent analysis was performed via Google Patents and WIPO. Inclusion criteria favored indexed original articles, in vitro or in vivo experimental studies, and works with quantitative antioxidant evaluation. The selection process followed PRISMA logic, narrowing from 2,035 initial records to 40 studies included in the final synthesis. Benchmarking, Quality Function Deployment (QFD), and intellectual property analysis were applied to identify the design gap and define engineering specifications.
Results. Antioxidant activity was consistently documented across multiple species. C. sphaerogynus yielded EC50 values comparable to commercial quercetin via flavonoid-enriched fractions. C. blanchetianus showed antioxidant potential without acute, subacute, or genotoxic toxicity in murine models. C. gratissimus herbal infusion elevated hepatic SOD and catalase while suppressing MDA in iron-induced oxidative injury. C. matourensis supercritical CO2 extract reached 83.26% DPPH inhibition with anti-inflammatory and neuroprotective effects. C. caudatus demonstrated DPPH IC50 of 305.39 µg/mL with in vivo ROS reduction in yeast oxidative stress models. Patent analysis identified five relevant technology families (KR20130045451A, TWI792573B, WO2020191384A1, US12150970B2, US9597279B2), all focused on topical cosmetic or pharmaceutical compositions, revealing a clear gap: no existing technology simultaneously integrates standardized extraction, controlled release kinetics, mechanical performance, and explicit antioxidant function in a single biomedical platform.
Conclusion. The evidence supports Croton as a viable phytochemical platform for biomedical applications. The technology intelligence analysis defines a design opportunity: a biocompatible antioxidant hydrogel—chitosan or alginate-based—loaded with a standardized Croton extract, designed for topical application on oxidative stress-compromised cutaneous wounds. QFD metrics establish target antioxidant activity (IC50 < 50 µg/mL), cell viability above 90%, sustained release over 8 hours, and chemical stability exceeding 12 months. Future work requires species selection, extract standardization, biomaterial formulation, and preclinical biocompatibility validation to advance this concept toward a regulatory pathway under INVIMA.

PUBLIC HOSPITAL EXPENDITURE AND SERVICE UTILIZATION IN GREECE: IMPLICATIONS FOR SUSTAINABLE AND RESILIENT HEALTH INFRASTRUCTURE

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Abstract

Public hospitals constitute essential social and economic infrastructure, with a central role in sustainable urban and regional development and equitable access to healthcare and their sustainability depends not only on controlling expenditure but also on maintaining adequate and resilient service capacity. This study examines whether the growth of public hospital expenditure in Greece was accompanied by proportional changes in hospital service utilization over a ten-year period spanning fiscal consolidation, the COVID-19 pandemic and the subsequent recovery. A descriptive national time-series analysis was conducted using routinely collected administrative data from Greek public hospitals for 2014–2023. Hospital expenditure was converted into constant 2023 euros using the Harmonised Index of Consumer Prices and compared with inpatient admissions, inpatient days, scheduled outpatient visits and emergency department visits. Changes in expenditure composition and real expenditure per hospital contact were also examined. Real public hospital expenditure increased by 40.7% between 2014 and 2023, while inpatient admissions increased by 12.1%. In contrast, inpatient days decreased by 3.7%, scheduled outpatient visits by 7.1% and emergency department visits by 6.1%. Real expenditure per inpatient admission increased by 25.5%, while expenditure per outpatient visit increased by 51.5%. Particularly large increases were observed in expenditure on pharmaceuticals, medical supplies and additional or temporary staffing. The divergence between expenditure growth and service volumes became especially pronounced during the pandemic and persisted during the subsequent recovery period. These findings should not be interpreted as direct evidence of inefficiency, as they may reflect changes in input prices, treatment intensity, workforce pressures and case complexity. Nevertheless, they demonstrate the importance of integrating financial and service-activity indicators when assessing the sustainability and resilience of public health infrastructure. Such integrated monitoring can support more informed resource allocation, capacity planning and health-system management at national and regional levels and contribute to socially equitable and territorially balanced development.

Keywords: public hospitals; hospital expenditure; service utilization; sustainable health infrastructure; health-system resilience; resource allocation; Greece

FROM FLOOD SIMULATION TO URBAN RESILIENCE. ASSESSING ROAD NETWORK VULNERABILITY AND HEALTHCARE ACCESSIBILITY IN ARGOSTOLI, KEFALONIA

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Abstract

This study aims to expand the scope of flood vulnerability assessments from urban land units to critical infrastructure by examining the impact of simulated flood events on the road network and, consequently, on the accessibility of healthcare services in an emergency in Argostoli, Kefalonia, Greece. Based on a previous GIS-based flood simulation in ArcGIS Pro, two 24-hour rainfall scenarios were created using ESRI and open-source elevation data. These scenarios produced outputs relating to flood depth, flow velocity and flow direction across twelve successive time steps. Flood hazard and flood risk were then estimated at the urban-block level by combining inundation depth with population exposure. This study uses these flood depth and risk layers to conduct a network-based vulnerability analysis. Road segments are intersected with flood extent and depth classes to identify impassable or high-risk sections. Network analysis tools are then applied to evaluate the resulting disruption to connectivity. Particular attention is given to service areas and the shortest paths to hospitals, health centres, and emergency response facilities to detect road segments that disproportionately isolate specific city blocks from health infrastructure during flooding. This methodology reveals spatial patterns of infrastructural vulnerability that extend beyond the flood extent itself, identifying road segments that act as critical bottlenecks during flood events. The results aim to support local authorities and civil protection planning by identifying priority roads for drainage improvement, early warning measures and alternative emergency routing. This will contribute to the sustainable and resilient design of urban transport infrastructure in flood-prone coastal settlements.

Key words: urban flood vulnerability, GIS, road network analysis, healthcare accessibility, emergency response, sustainable infrastructure.

BEYOND SAFE SWALLOWING: TEXTURE MODIFICATION, NUTRITIONAL ADEQUACY AND SUSTAINABLE NUTRITION IN PAEDIATRIC DYSPHAGIA - IMPLICATIONS FOR CLIMATE AND ENVIRONMENTAL SUSTAINABILITY

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Abstract

Paediatric dysphagia is a multi-dimensional clinical condition impacting on swallowing safety, nutrition and fluid intake, growth, feeding efficiency and quality of life. Texture modified foods and viscosity modified liquids are routinely used as compensatory postures used to reduce aspiration risk and maximize swallowing safety. Nevertheless, such interventions are likely to affect food acceptance, dietary intake, preparation requirements but also food wastage and additional issues for nutritional adequacy and sustainable nutrition.

This paper describes a systematic review protocol investigating the effects of texture-modified foods and thickened liquids in weighed children or young people with dysphagia, focusing on swallowing safety and nutritional adequacy. A further aim is to assess how practice of dysphagia management correlates with indicators of sustainable nutritional practices and environmental sustainability.

A systematic review and meta-analysis will be conducted according to established methodological standards for systematic reviews. Electronic searches will be performed in major biomedical, health and multidisciplinary databases, including PubMed/MEDLINE, Embase, Scopus, Web of Science, CINAHL and Cochrane CENTRAL. Eligible studies will include children and adolescents aged 0–18 years with documented dysphagia and studies evaluating texture-modified foods, thickened liquids or other viscosity/consistency modifications. Primary outcomes will include swallowing safety indicators, such as aspiration, penetration and Penetration–Aspiration Scale scores, as well as nutritional and hydration outcomes, including energy intake, fluid intake, weight and growth. Secondary outcomes will include food acceptance, consumed volume, feeding efficiency, caregiver burden, food waste, preparation requirements, resource use, cost and environmental impact.

For cases of sufficient methodological and clinical homogeneity, a random-effects meta-analysis will be conducted. Heterogeneity, risk of bias and certainty of evidence will be independently and systematically evaluated. For environmental and sustainability-related outcomes, data will be quantitatively synthesised (using meta-analysis methods where appropriate), or a systematic narrative synthesis will be provided of the findings when available data from comparable evaluations cannot be pooled.

This review will provide a consolidated viewpoint on the trade-off between feeding safety and nutritional adequacy with sustainable food practices in paediatric dysphagia. This study aims to link clinical dysphagia management with food consumption and waste, resource use and environmental impacts to contribute to the growing dialogue on sustainable nutrition and environmentally sound healthcare practice.

Key words: Paediatric dysphagia, texture modification, thickened liquids, nutritional adequacy, sustainable nutrition, food waste, environmental sustainability

Special session:

ALTERNATIVE FORMS OF TOURISM AND SUSTAINABLE DEVELOPMENT IN URBAN, RURAL AND ISLAND AREAS

Chaired by **Associate Prof Olga-Eleni Astara**
and **Assist Prof Michalis Skordoulis**

EDUCATIONAL TOURISM AND MUSEUMS: CONDITIONS FOR MEANINGFUL LEARNING

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Abstract

A museum visit offers opportunities to learn, but what helps turn those opportunities into a meaningful educational tourism experience? This narrative review examines twelve publications on museum learning, heritage tourism, interpretation and sustainability. It brings their findings together around four themes: visitors' motivations and characteristics; the design of learning experiences; guided tours and digital media; and outcomes for knowledge, cultural understanding and sustainability. Across the literature, visitors emerge as active participants whose interests, previous knowledge and reasons for visiting shape what they take away from the experience. School groups, adult learners and tourists encountering unfamiliar histories may need different forms of support. Recognising these differences can help museums create experiences that are relevant to their audiences while leaving room for curiosity and personal discovery.

The way a visit is organised also matters. Preparation can give visitors a starting point, while close observation, questions and discussion help them make sense of what they encounter. Reflection afterward provides an opportunity to connect the visit with everyday life. Guides can support these connections through dialogue and explanations that respond to visitors' questions. Digital tools can also contribute, provided they suit the audience and help visitors understand the collections. Their presence alone does not demonstrate that learning has occurred. The reviewed literature points to outcomes that include knowledge, emotional engagement and reconsideration of cultural perspectives. Some studies also suggest that museum interpretation can encourage intentions to consume more sustainably. These findings require careful interpretation, since intentions do not necessarily lead to lasting changes in behaviour. The review concludes that meaningful educational tourism depends on connections between visitors, learning activities and interpretation. Respect for the heritage and communities represented is also essential. These conditions offer a starting point for designing visits whose educational value can extend beyond the museum.

Keywords: educational tourism; museums; museum learning; visitor motivations; heritage interpretation; cultural understanding; sustainability

SUSTAINABLE CULTURAL TOURISM & ACCESSIBILITY. CASE STUDY ACROPOLIS MUSEUM.

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Abstract

This study examines the relationship between cultural tourism and accessibility through a case study of the Acropolis Museum in Athens. It aims to assess the extent to which the museum responds to the principles of universal accessibility and contributes to inclusive cultural tourism in Greece. The analysis focuses on physical and digital access, visitor communication, and opportunities for cultural participation. Cultural tourism connects leisure, learning, and engagement with cultural heritage; consequently, equitable access for people with different abilities and needs is essential to its sustainable development. The research combines qualitative and quantitative approaches, drawing on content analysis of the museum's official website and digital applications, together with data collected from visitor reviews. These sources are used to explore accessibility practices, the provision of visitor information, and aspects of the museum experience. The study also considers how museums adapt to social and technological developments to broaden their audiences and support participation.

The findings indicate progress in the provision of physical and digital accessibility and in communication strategies that facilitate engagement with cultural heritage. Nevertheless, the analysis identifies areas requiring further development, particularly facilities for visitors with sensory or mobility impairments and specialised educational activities. These findings suggest that accessibility requires continuing attention across infrastructure, communication, and educational provision to support a more inclusive visitor experience. The study concludes that accessibility is a substantive dimension of cultural and tourism experience and an essential component of inclusive cultural policy. The Acropolis Museum case highlights both existing practices and opportunities for improvement, offering insights for other cultural institutions. By linking universal accessibility with cultural participation, the study contributes to the discussion of how museums can support more equitable engagement with heritage and the development of sustainable cultural tourism in Greece.

Keywords: Cultural tourism; Universal accessibility; Acropolis Museum; Universal design; Cultural participation; Inclusive museums.

CONSUMER BEHAVIOUR TOWARDS ORGANIC AND NATURAL BEVERAGES: CASE STUDY ON MOUNTAIN ICED TEA

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Abstract

The organic iced mountain tea represents an innovative product that combines Greek tradition with modern global trends in organic beverage consumption. In an era marked by heightened environmental awareness and a growing emphasis on sustainable development, consumers are increasingly seeking high-quality products that align with values such as health, environmental consciousness, and the vital support for local production economies.

This paper investigates consumer behaviour towards organic iced mountain tea, aiming to understand the factors influencing preferences and purchasing decisions within this specialized market. The study employed a quantitative methodology, utilizing an electronic questionnaire administered to 152 participants.

The results highlighted the paramount importance of sensory attributes like taste, alongside stringent food safety standards, and the clear presence of an "organic" label on packaging as primary determinants for product selection. Crucially, the study revealed a significant consumer willingness to pay a premium for products that not only champion local production initiatives but also proudly display verifiable environmental certifications. This finding strongly emphasizes the growing influence of ecological consciousness and ethical sourcing on consumer behaviour. While digital marketing and social media platforms emerged as potent strategies for product promotion, actual online purchasing behaviour for this specific category was observed to be relatively limited.

In conclusion, this research underscores the imperative for modernizing production processes and implementing highly targeted marketing strategies. These enhancements are essential to significantly boost the recognition and market penetration of organic iced mountain tea, both domestically and internationally, by prominently featuring its inherent environmental sustainability and its tangible contribution to local development and the support of local organic produce.

Key words: Organic iced mountain tea, Consumer preferences, Food safety, Local production, Environmental certifications, Digital marketing, Online purchasing behavior

NEUROFRIENDLY GREECE: NEURODIVERSITY AND SOCIAL SUSTAINABILITY IN GREEK TOURISM

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Abstract

Sustainable tourism requires equal access, participation and a quality experience for all travellers. For neurodivergent individuals, both preparation and the journey itself are often associated with significant challenges. Clear information, predictability, management of sensory stimuli, proper preparation, interactions with staff, and adaptation to unfamiliar environments affect the travel experience of adults with autism spectrum disorder (ASD) Level 1 or attention-deficit/hyperactivity disorder (ADHD). The paper presents ongoing doctoral research, which aims to examine the experiences and needs of neurodivergent travellers themselves, rather than those of their families or their social environments. The research will seek to document the travellers' experience, their interaction with tourism businesses and their staff, and the role that Public Administration could play in shaping conditions for equal access.

Methodologically, the paper is based on an analysis of institutional documents and a literature review. The narrative review identified five dimensions of the research gap: empirical, theoretical, methodological, policy-related and geographical. International literature focuses primarily on families with autistic children, while no studies specifically addressing neurodivergent adults themselves were identified in Greece. The National Strategy for the Rights of Persons with Disabilities includes accessible tourism but makes no explicit reference to neurodiversity.

Based on these findings, the social model of disability was adopted, focusing on external barriers and recognising neurological diversity as a valid form of human difference. The double empathy problem was also employed, according to which neurodivergent people should not be held solely responsible for communication difficulties. Regarding Public Administration, collaborative governance was adopted, since equal access requires cooperation between public bodies and relevant stakeholders. The analysis is situated within the framework of social sustainability, with the ultimate aim of formulating proposals for the design of inclusive tourism services.

Keywords: Neurodiversity, Social Sustainability, Accessible Tourism, Public Administration, Inclusion, ASD, ADHD

EXPERIENCING ACCESSIBILITY IN PUBLIC SPACE: A MIXED-METHODS ANALYSIS OF SURVEY DATA AND USER-GENERATED CONTENT IN CORFU

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Abstract

Public and open spaces constitute a fundamental component of the tourism experience, particularly in historic and island destinations where streets, squares, waterfronts and cultural sites function simultaneously as spaces of everyday life, cultural interaction and visitor activity. Their accessibility therefore represents not only a matter of urban design and social inclusion, but also an important dimension of sustainable and inclusive tourism development.

This study investigates accessibility in public and open spaces in Corfu through a mixed-method approach combining survey data with user-generated content. The survey examines perceptions of physical accessibility, ease of movement, usability, inclusiveness and participation in cultural and recreational activities. These findings indicate a gap between individual accessibility experiences and perceptions of whether public spaces are accessible to all users, while concerns also emerge regarding supporting infrastructure and the usability of public spaces under different conditions. The combination of structured survey responses and unsolicited online visitor narratives allows the study to distinguish between perceived, planned and actually experienced accessibility.

These findings are complemented by an analysis of online reviews referring to major public spaces in the examined area. Accessibility-related comments are classified according to mobility barriers, surfaces, stairs and ramps, seating, signage, parking, pedestrian movement, disability access, safety and comfort. The analysis examines whether dimensions identified through the survey are also reflected in visitors' spontaneous accounts and supports the development of a location-based Accessibility Experience Index, enabling comparisons across different public spaces and identifying areas where accessibility is consistently experienced positively or negatively.

By combining structured perceptions with experienced accessibility, the study conceptualizes accessibility as an integral dimension of sustainable heritage destination management. By integrating tourism studies, cultural management, public-space research and user-generated content analysis, the study proposes accessibility as a key component of the cultural-tourism experience and of socially sustainable destination development. The findings can support destination managers and local authorities in identifying priority interventions to create public spaces that are more inclusive, culturally accessible, and visitor-friendly, while enhancing the everyday quality of life of local communities

Key words: accessible tourism; public space; user-generated content; cultural management; inclusive tourism; Corfu; sustainable destinations

Session:

SUSTAINABLE ENVRONMENT, CLIMATE AND CIRCULAR ECONOMY

SUMMER BENEFIT, WINTER LIABILITY: TESTING MORPHOLOGY TRANSFERABILITY ACROSS CHINA'S CLIMATES

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Abstract
Settlement forms associated with summer cooling may intensify winter cold or reverse direction when transferred across climates. Yet sustainable planning lacks a direct test of where and when a morphology-temperature association remains valid. We tested the climate-season transferability of built-surface fraction, a planning-relevant morphology indicator, across 10,225 spatially balanced urban and rural settlement locations in China's arid, temperate, and cold Köppen classes. We linked 2020-2022 summer daytime and winter nighttime land-surface temperatures to Global Human Settlement Layer morphology. Climate-conditioned nonlinear models quantified within-climate seasonal associations, and leave-one-climate-out tests assessed whether relationships learned elsewhere preserved their direction in the held-out climate. The analysis revealed two distinct failures of one-size-fits-all planning. Within arid climates, moving from the 10th to the 90th percentile of built-surface fraction was associated

with a 3.11 °C lower summer heat burden but a 4.50 °C higher winter cold burden. Across climates, the same arid-summer association reversed: the apparent 3.11 °C benefit became a 3.02 °C penalty when inferred from temperate and cold climates. Thus, morphology benefits were conditional on both season and climate, rather than stable properties that could be transferred nationally. By reframing the planning question from which morphology performs best to where and when its benefit remains valid, this study converts local morphology-temperature associations into a climate-by-season transferability screen. The screen distinguishes candidates that may transfer from those requiring local recalibration or carrying an opposing seasonal burden. It therefore offers sustainable settlement planning an evidence-based way to avoid importing maladaptive design rules and to reduce summer heat without increasing winter cold across both urban and rural regions

Keywords: Built-surface fraction; Land-surface temperature; Köppen climate classification; Seasonal trade-offs; Cross-climate generalization; Climate adaptation; Sustainable settlement planning.

EFFECTIVE CARBON REDUCTION AMID THE TRADE-OFF BETWEEN ENERGY EFFICIENCY AND ENERGY DEPENDENCY

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Abstract
As countries navigate the transition from fossil fuels to renewable energy, they face structural decisions, such as balancing emissions mitigation, energy efficiency, and energy security. This paper examines the theoretical trade-off between energy efficiency and energy dependency within economies undergoing green energy transitions. Focusing on Greece and the EU27, we formalize the composition and structure of national energy mixes by constructing a closed accounting system using internationally standardized energy balance data from the Standard International Energy Product Classification (SIEC).

Building on these empirical insights, we construct a partial equilibrium macroeconomic model that links energy supply structures, import dependency, and carbon policy instruments, specifically carbon taxation and green subsidies, to macro-economic performance. In this setting, energy efficiency and energy intensity are connected, while the State's optimization problem is formulated under explicit energy dependency constraints. Crucially, the model evaluates policy outcomes when carbon pricing revenues are recycled to directly finance renewable energy and the greening of the domestic energy infrastructure. Our preliminary theoretical results illustrate the conditions under which revenue recycling mitigates the dependency penalty without compromising energy efficiency or carbon reduction targets.

Key words: carbon pricing, energy efficiency, energy dependency, energy transition, green subsidies

SELECTING FINANCING STRATEGIES FOR CIRCULAR REAL ESTATE DEVELOPMENT UNDER UNCERTAINTY: AN AHP–REAL OPTIONS–TOPSIS APPROACH

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Abstract

Companies investing in large circular economy projects face a hard question: How to choose a financing strategy that balances circularity goals, financial value, uncertainty, and flexibility. This is especially true for large building projects, where high costs, uncertain operating expenses, and stricter circularity rules make financing decisions harder.

This study will build a combined AHP–Real Options–TOPSIS framework to help choose financing strategies for circular investments under uncertainty. AHP will rank how important circularity and flexibility criteria are. A two-factor real options model will estimate investment value under uncertain maintenance costs and resale value. TOPSIS will then combine these results to rank the financing options.

The framework will be tested using a real European case: The Ellinikon in Athens, Greece, which is turning the former Athens airport into a green commercial, residential, and hotel district. Developer Lamda Development is investing over €6 billion and aims for LEED Gold or BREEAM "Very Good" certification. The case compares two financing choices: a Green Bond backed by the EBRD, with circularity requirements tied to green certification and climate targets, and a Corporate Loan with a lower interest rate and more flexible terms. Instead of valuing the real options separately, the study will build investment value, option value, and flexibility scores directly into the TOPSIS ranking, alongside circularity criteria such as material reuse, waste reduction, energy efficiency, adaptability, and regulatory compliance.

The framework is expected to show that while the Green Bond may align better with circularity, the Corporate Loan could offer lower costs and more flexibility, leading to a higher investment value. The option to delay the investment is expected to add further value to the flexible loan. These results would show that combining real options with a multicriteria approach reveals trade-offs that simpler methods miss, offering useful guidance for financing large circular construction projects.

Keywords: green building; circular economy; sustainable finance; AHP; TOPSIS; real options; financing strategy

LEGAL ASPECTS OF CONSUMER PROTECTION THROUGH THE LENS OF THE CIRCULAR ECONOMY WITHIN ENTREPRENEURIAL ACTIVITY: METHODOLOGY, STATE OF RESEARCH AND THE IMPACT OF DIGITALIZATION

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Abstract

The transition from the linear "produce–consume–dispose" economic model to a circular economy is reshaping the legal mechanisms governing consumer protection within entrepreneurial activity. This paper examines the legal aspects of consumer protection through the lens of the circular economy, drawing on the methodological, historiographic, and doctrinal foundations of an ongoing doctoral research project in business law. The purpose of the study is threefold: to justify a combined research methodology integrating comparative-legal analysis, systemic interpretation of norms, and teleological reasoning; to map the current state of doctrinal research on consumer protection, the circular economy, and entrepreneurship, identifying gaps in national scholarship; and to analyze how digitalization is transforming legal mechanisms of consumer protection. The research employs comparative legal analysis of European Union instruments (including the European Green Deal and the Circular Economy Action Plan) against the national legislation of the Republic of Moldova, supplemented by a critical review of national and international doctrine. Findings show that the circular economy generates new consumer rights extending beyond traditional product safety and conformity, including the right to accurate information on product durability, guaranteed access to repair services, and protection against environmentally deceptive practices ("greenwashing"). Digitalization compounds these challenges through platform-based commerce, algorithmic personalization, and manipulative interface design ("dark patterns"), amplifying information asymmetries between entrepreneurs and consumers. The study concludes that consumer protection is becoming a constitutive element of contemporary business law rather than a parallel field, and that Moldova's regulatory and doctrinal framework requires substantial development to meet EU standards, offering concrete directions for legislative reform and doctoral contribution.

Keywords: consumer protection, circular economy, entrepreneurial activity, business law, digitalization, right to repair, Republic of Moldova

THE VALUATION IMPLICATIONS OF ENVIRONMENTAL SDG ENGAGEMENT: A TEMPORAL ANALYSIS

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Abstract

This study investigates the temporal relationship between environmental Sustainable Development Goal (SDG) engagement and corporate financial performance, focusing on SDG 7 (Affordable and Clean Energy), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action). Using a sample of 1225 U.S. publicly listed firms over the period 2019–2024, the analysis employs a dynamic panel econometric framework with firm and year fixed effects which is fully implemented in Python.

The results indicate that the financial benefits of environmental SDG engagement do not materialize immediately but emerge progressively over time, with statistically significant positive effects on return on equity observed at the third lag. By isolating environmentally and financially material SDGs, the study clarifies the channels through which sustainability engagement translates into long-term profitability and helps reconcile previously mixed empirical evidence.

The findings are robust across alternative SDG index constructions, outlier treatments, lag structures, and component-specific exclusions. Overall, the results underscore the importance of a long-term perspective in evaluating SDG-related investments and offer relevant insights for managers, investors, and policymakers concerned with the financial implications of corporate sustainability strategies.

Keywords: Corporate Financial performance, SDG disclosure, Environmental Sustainability

AN INTEGRATION OF UPCYCLING CONSTRACTION WOOD WASTE THROUGH DIGITAL FABRICATION: A SUSTAINABLE AND SCALABLE CIRCULAR FRAMEWORK FOR INDIA

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Abstract

This research investigates the intersection of circular economy principles and digital fabrication technologies within the Indian wood industry, addressing the urgent need for scalable, sustainable, and resource-efficient solutions. It critically examines the potential of advanced digital fabrication methods such as 3D printing, CNC machining, and robotic assembly to optimise resource utilisation, enable the recycling of wood waste, and facilitate the regeneration of wood-based products. The primary objective is to identify existing gaps in current wood waste processing practices and to propose technologically advanced, industrially scalable solutions that align with circular economy frameworks. The study articulates how these emerging technologies can support the transition from a linear to a circular production model, with a particular focus on their implications for the design industry, environmental sustainability, and economic development in the Indian context.

The research methodology integrates both qualitative and quantitative approaches such as university research labs and different Fablabs in India; including policy analysis, industry reviews, and life cycle assessment (LCA). Data sources include Scopes-indexed literature using targeted keywords, Open Government Data (OGD) ofthe Government of India, and strategic policy documents such as India's first Circular Economy Action Plan and the National Circular Economy Framework (NCEF) 2024.The research culminates in the development of a strategic implementation framework for the effective utilisation of wood waste through digital technologies.

Keywords: wood waste, Circular economy, digital fabrication, scalability and sustainability , Upcycling construction wood waste , circular framework , Material Efficiency.

FROM ENVIRONMENTAL AWARENESS TO EDUCATIONAL PRACTICE: EXPLORING THE PERCEPTION-ACTION GAP IN EDUCATION FOR SUSTAINABLE DEVELOPMENT

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Abstract

Education for Sustainable Development (ESD) requires more than environmental knowledge and favourable attitudes; it depends on educators' capacity to translate sustainability principles into consistent pedagogical practice. This study investigates the perception–action gap in ESD by examining the extent to which positive perceptions of environmental education are reflected in educational implementation and by identifying the factors that facilitate or constrain this transition. The analysis draws on quantitative data collected through a structured questionnaire administered to 500 educators. The instrument addressed perceptions of environmental education, anticipated educational and social benefits, dimensions of pedagogical implementation, and perceived institutional, organisational, and practical barriers. Multivariate statistical procedures and exploratory factor analysis were employed to identify the underlying structure of these dimensions. Sampling adequacy and factorability were supported by a Kaiser–Meyer–Olkin value of 0.845 and a statistically significant Bartlett's test of sphericity ($p < 0.001$), while the extracted factor solution accounted for 67.1% of the total variance. The findings reveal a clear distinction between strong recognition of the educational and social value of ESD and its systematic incorporation into teaching practice. Positive perceptions therefore appear to constitute a necessary, but not sufficient, condition for sustained educational action. Institutional, organisational, and operational constraints emerge as important elements shaping educators' capacity to move from intention to implementation. These findings support a systemic interpretation of the perception–action gap: strengthening environmental awareness alone is unlikely to secure meaningful educational change unless educators are simultaneously supported by enabling pedagogical and institutional conditions. The study highlights the need for ESD policies that move beyond awareness-raising towards structures that strengthen educators' agency and implementation capacity. Bridging this gap can reinforce the transformative role of education, promote active environmental citizenship, and contribute to the transition towards more sustainable and resilient communities.

Keywords: Education for Sustainable Development; Environmental Education; perception–action gap; educators; educational practice; environmental citizenship; sustainable development

PHYSICAL CHEMISTRY HELPS CIRCULAR ECONOMY: FROM PYROLYSIS RESIDUES TO IMPROVEMENT OF BITUMENS IN ROAD PAVEMENT TECHNOLOGY

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Abstract

Scope of Contribution: This study integrates municipal waste management with road infrastructure materials by repurposing pyrolysis residues (specifically char and bio-oil) as functional additives for bitumen. The work establishes a circular economy strategy that targets both the reduction of landfill waste and the conservation of natural resources in pavement manufacturing and asphalt rejuvenation.

Methods Used: The physicochemical interactions between carbonaceous fillers and bitumens were investigated using two distinct char types derived from the pyrolysis of refuse solid waste (RDF) and waste tire rubber (WTR). Given char's porous, fibrous structure and chemical compatibility with bitumen matrices, its structural reinforcement capabilities were evaluated. The mechanical and thermal behaviors of neat versus char-modified bitumen samples were assessed using rheological characterization across temperature sweeps to measure viscoelastic response (expressed via tan δ) and anti-aging resistance.

Findings: Preliminary rheological results demonstrate that char addition significantly reinforces the overall binder structure and improves high-temperature resistance. The tight molecular interactions between the char particles and bitumen act as a barrier that slows aging dynamics. These findings confirm that low-cost, waste-derived char can effectively replace expensive carbonaceous nanomaterials (such as carbon nanotubes or graphene) to enhance asphalt durability.

Intended Benefits for Reader: Practitioners and researchers will gain actionable insights into formulating multi-functional bitumen additives from recycled feedstocks. This offers actionable pathways to extend pavement service life, lower raw material costs, reduce fatigue cracking, and advance sustainable waste-to-resource engineering practices.

Key words: Char, Pyrolysis, Waste disposal, Anti-aging, Bitumen

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Special Session:

SOCIAL DIMENSIONS OF SUSTAINABLE DEVELOPMENT: IMPLICATIONS FOR EDUCATION AND HEALTH

Organized by **Dr Dologlou Maria**

FILM - BASED ENVIRONMENTAL EDUCATION AND THE SOCIAL DIMENSIONS OF SUSTAINABLE DEVELOPMENT: A PARTICIPATORY PEDAGOGICAL FRAMEWORK FOR SCHOOLS

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Abstract

The social dimensions of sustainable development goals highlight the importance of addressing health, well-being, equality, and participation alongside environmental challenges. In this context, education plays a significant role in fostering the knowledge, values, and competences that enable young people to understand sustainability challenges and participate in shaping more inclusive and sustainable societies. Schools provide important spaces for exploring these interconnected dimensions, while the use of environmental films can offer an accessible and engaging pedagogical approach for addressing complex environmental and social issues. The conceptual paper develops a theoretically informed participatory pedagogical framework for the use of environmental films in school settings, drawing on principles of Education for Sustainable Development, experiential and dialogic learning, critical reflection, and student agency. Rather than treating film screening as an isolated educational activity, the framework conceptualises it as the starting point of a broader learning process connecting environmental issues with health, well-being, social inequalities, and civic participation. The framework is structured around five interconnected pedagogical stages: engagement, reflection, dialogue, contextual connection, and action. These stages form an iterative process through which students engage with a film, reflect critically on the issues presented, exchange perspectives, connect global sustainability challenges with their lived experiences and local contexts, and explore possibilities for action. Building on this framework, an illustrative educational scenario for a school-based environmental film screening is proposed, focusing on the interconnections between climate change, health, and social inequalities. The scenario outlines key elements of the educational process, including pre-screening preparation, guided reflection, collaborative discussion, contextual connection, and the development of possible actions. The paper positions film-based environmental education as a pedagogical approach with the potential to foster critical thinking, social awareness, student agency, and inclusive participation, while contributing to interdisciplinary and socially oriented sustainability education.

Key words: Social Sustainability, Participatory Learning, Environmental Education, Critical Reflection.

ACTIVE ENVIRONMENTS FOR HEALTHIER LIVES: A MINISTRY OF ENVIRONMENT AND ENERGY CASE STUDY (GREECE)

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Abstract

Well-being, health and environmental quality are interconnected dimensions of sustainable development: the design of natural and urban spaces shapes people's opportunities for physical activity and, through them, their quality of life.

HEPA (Health-Enhancing Physical Activity) is a European policy framework for promoting physical activity to improve public health and quality of life, through cross-sectoral cooperation across health, education, sport, transport, the environment and local government, supported by WHO Europe and the European Commission. International evidence indicates that supportive environments and their infrastructure—walkable public space, accessible routes, access to nature—enable people to be more active and thereby support their health. This paper is a case study of how that framework is applied in practice by the Ministry of Environment and Energy in Greece, through specific infrastructure delivered on the ground.

The case study covers the following delivered works: a national network of walking trails of approximately 6,325 kilometres, delivered through 54 beneficiary bodies across mainland and island Greece, largely within Natura 2000 protected areas; the Athenian Riviera urban walk of approximately 3 kilometres; and urban regeneration and green-network projects delivered through 73 interventions, comprising 100 main and 78 accompanying works and benefiting 4,990,757 residents, with accessibility for people with disabilities secured in every one. Alongside these works, European Mobility Week grew from 6 participating municipalities in 2010 to 86 in 2019.

Taken together, these works make the case study an application of theory in practice: each intervention turns a recommendation of the literature—walkability, accessibility, contact with nature—into a physical asset available to millions of residents. Cross-sectoral governance, through the recently re-established national HEPA Working Group, allows this to be sustained and extended, and the approach is transferable to other countries and regions pursuing active, healthy and more inclusive living.

Key words: physical activity, well-being and happiness, quality of life, nature-based recreation, environment, social inclusion, sustainable development

FROM SUSTAINABLE LEADERSHIP TO SUSTAINABLE CITIES: EXPLORING EMPLOYEES' URBAN SUSTAINABILITY ATTITUDES

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Abstract

As sustainability challenges increasingly extend beyond organizational boundaries, greater attention is being directed toward the potential role of organizations and leadership in shaping employees' broader sustainability orientations. Sustainable leadership, characterized by a long-term perspective and a commitment to balancing organizational, social, and environmental considerations, may be associated not only with workplace-related outcomes but also with employees' attitudes toward sustainability in the wider urban context. Against this background, the present study investigates the relationship between sustainable leadership and employees' urban sustainability attitudes.

A quantitative research design is employed, using data collected from employees through a structured questionnaire. The study examines employees' perceptions of sustainable leadership practices within their organizations and explores their relationship with attitudes toward urban sustainability. Statistical analyses are conducted to assess the direction and strength of the association between the examined constructs and to provide empirical evidence regarding the potential connection between organizational leadership and employees' sustainability-related attitudes beyond the immediate workplace environment.

The study further considers the broader implications of this relationship for the interaction between organizational and urban sustainability. Although the research does not directly measure organizational contributions to the Sustainable Development Goals (SDGs), its findings may offer insights into how sustainability-oriented leadership within organizations relates to employees' awareness, values, and attitudes concerning sustainable urban living and development. Such a perspective may contribute to discussions surrounding the social and environmental dimensions of sustainable cities and communities.

By connecting sustainable leadership with employees' urban sustainability attitudes, this research seeks to extend the discussion of sustainable leadership beyond traditional organizational outcomes and highlight the potential relevance of the workplace as a context in which broader sustainability orientations may be reinforced. The study therefore contributes to the emerging dialogue on the interconnected roles of leadership, employees, organizations, and urban sustainability.

Key words: Sustainable Leadership, Urban Sustainability Attitudes, Employees, Urban Sustainability, Sustainable Development, Sustainable Organizations

SUSTAINABLE LEADERSHIP AND EMPLOYEE WELL-BEING: EXPLORING THEIR RELATIONSHIP THROUGH A SOCIAL SUSTAINABILITY LENS

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Abstract

As organizations face increasing pressure to pursue sustainability while maintaining healthy and supportive working environments, sustainable leadership has gained attention as a leadership approach that integrates long-term organizational objectives with responsibility toward people and society. Within this context, employee well-being represents a key dimension of organizational sustainability. This study investigates the relationship between sustainable leadership and employee well-being, focusing on employees' perceptions of leadership practices and their association with well-being in the workplace.

A quantitative research design is employed, based on data collected from employees through a structured questionnaire. The study examines sustainable leadership as a key organizational factor and explores its relationship with different dimensions of employee well-being. Statistical analyses are conducted to identify the direction and strength of these relationships and to provide empirical evidence regarding the potential role of sustainable leadership in fostering a healthier and more supportive work environment.

Beyond the organizational level, the study considers the broader implications of this relationship within the social dimension of sustainable development. Rather than directly measuring organizational contributions to the Sustainable Development Goals (SDGs), the research discusses how leadership practices that support employee well-being may align with broader sustainability priorities related to health and well-being, decent working conditions, social inclusion, and responsible organizational practices. In this way, the study provides a basis for considering employee well-being not only as an organizational outcome but also as an important component of socially sustainable workplaces.

The study contributes to the emerging discussion on sustainable leadership by connecting leadership practices and employee well-being with the broader social sustainability agenda, while offering practical implications for organizations seeking to integrate human-centered approaches into their sustainability strategies.

Keywords: Sustainable Leadership, Employee Well-Being, Social Sustainability, Sustainable Development Goals, Workplace Sustainability, Quantitative Research

EMOTIONAL INTELLIGENCE AND ORGANIC SENSORY FUNCTION OF THE SCHOOL PRINCIPAL- "LEADER" IN RELATION TO SUSTAINABLE DEVELOPMENT

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Abstract

The object of the present study is to examine the factors that ensure the effective administration and quality education of a school unit. The existing theoretical review has demonstrated that the School Principal can play a significant role in achieving this goal (Grissom et al., 2021), provided that he acts as a "leader," that is, possesses leadership skills (Gregori, 2025) and assumes the role of a guide and mentor (Chatziangelaki, 2018).

The primary objective of this study is to present the personality traits, capabilities, and skills of the school principal-"Leader" necessary to fulfill their work effectively, with the ultimate goal of improving education in Greece. Furthermore, quality education constitutes an important social dimension of the Sustainable Development Goals (SDGs).

For the requirements of this study, a literature review is initially conducted regarding the characteristics of the principal-"Leader" and the concept of Emotional Intelligence (Goleman, 2020; Petrides et al., 2020). Additionally, an innovative theory is examined (Tsatsaris, 2006), which constitutes the "anatomy of the organic sensory function of the individual" - and by extension, of the principal - and its relationship with the dimension of the soul.

The results indicate that the principal-"Leader" exercises effective administration when possessing high emotional intelligence, a deep self-awareness, and a balance of their subjective senses. Moreover, the principal-"Leader" ought to act as a "social worker" toward teachers, enabling them, in turn, to provide students with a meaningful social education. In this way, a harmonious social climate is created, contributing to effective management and the transformation of the educational community into a hub of learning, health, and social well-being, while simultaneously contributing to the upgrading of Greek education and social Sustainable Development (SDGs).

Keywords: Principal-"Leader", Emotional Intelligence, Organic Sensory Function, Education, Sustainable Development

SOCIAL SUSTAINABILITY IN EDUCATION: FROM EQUAL ACCESS TO MEANINGFUL PARTICIPATION AND BELONGING

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Abstract

Social sustainability has emerged as an increasingly important dimension of sustainable development, drawing attention to equity, inclusion, participation, well-being, and the conditions that enable individuals and communities to flourish. Within education, however, sustainability is often approached primarily through questions of access and equal educational opportunities. While ensuring access remains fundamental, socially sustainable education requires a broader understanding of inclusion that considers not only whether students are present in educational settings, but also whether they are able to participate meaningfully, develop supportive relationships, experience recognition, and feel that they belong within the school community.

This conceptual paper explores social sustainability in education through the interconnected dimensions of equity, meaningful participation, inclusion, and school belonging. Drawing on interdisciplinary literature on social sustainability, inclusive education, educational equity, student participation, and belonging, the paper examines how these concepts can contribute to a more comprehensive understanding of socially sustainable schooling. Particular attention is given to the transition from formal access to substantive participation and to school belonging as an important dimension of students' educational experiences and well-being.

The paper argues that access alone cannot ensure socially sustainable education when students experience marginalisation, limited opportunities for participation, or weak connections to their school communities. Social sustainability therefore calls for educational environments in which diversity is recognised, students' voices are valued, relationships and participation are fostered, and all learners have meaningful opportunities to become members of the school community. By bringing these dimensions together, the paper proposes a conceptual perspective on education that positions participation and belonging not as supplementary educational outcomes, but as integral components of socially sustainable and inclusive schools.

Key words: social sustainability, education, educational equity, inclusion, student participation, school belonging, well-being

DIGITAL EDUCATIONAL LEADERSHIP AND ARTIFICIAL INTELLIGENCE AS CATALYSTS FOR SUSTAINABLE LOCAL DEVELOPMENT: A RESEARCH IN PROGRESS FROM THE GREEK EDUCATIONAL SYSTEM

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Abstract

Digital transformation and Artificial Intelligence (AI) are reshaping educational systems worldwide, creating new opportunities and challenges for school leadership and sustainable development. Educational institutions play a pivotal role in fostering resilient, inclusive, and innovative communities, making digital leadership a key component of sustainable educational ecosystems. Within this context, school leaders are increasingly expected to integrate digital technologies strategically, promote innovation, and ensure the ethical and effective use of AI while supporting the achievement of the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), and SDG 16 (Peace, Justice and Strong Institutions).

This paper presents the theoretical framework and research design of an ongoing doctoral study investigating the relationship between digital transformation, Artificial Intelligence, and educational leadership in Greece. The study is grounded in contemporary theories of digital transformation, educational leadership, and sustainable development, proposing a conceptual framework that examines how digital leadership contributes to institutional effectiveness, innovation, and educational sustainability.

The quantitative phase of the research has been completed, with data collected from **650 educational professionals** across Greece through a structured questionnaire. The subsequent stages include statistical analysis of the quantitative data and a qualitative phase designed to provide a deeper understanding of educational leaders' experiences and perceptions regarding digital transformation and AI integration.

Rather than presenting final findings, this paper outlines the study's conceptual model, methodological approach, and anticipated contribution to the international discourse on sustainable education. By examining the role of digital educational leadership in fostering resilient educational institutions, the study aims to contribute to policy development and support the design of sustainable educational systems capable of responding to the demands of the digital era.

Key words: Sustainable Development, Digital Educational Leadership, Artificial Intelligence, Sustainable Educational Ecosystems, Local Development, Educational Policy, Digital Governance, SDG 4

Special session:

LANDSCAPES OF MEMORY: HERITAGE AND RESILIENCE IN CONTEMPORARY CITIES

Organized by **Assoc Prof Maria Grigoriadou**
and **Dr Elena Samourkasidou**

ARCHITECTURES OF INVISIBILITY IN HERITAGE SITES: EARTH-SHELTERED AND TOPOGRAPHICALLY INTEGRATED PUBLIC INFRASTRUCTURE AS STRATEGIES FOR SUSTAINABLE CONSERVATION AND RESILIENCE

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Abstract

Cultural heritage sites constitute complex spatial systems in which the material presence of monuments, historical memory, collective identity, and the natural landscape form an inseparable whole. Their conservation and contemporary activation often require the introduction of public infrastructure, including museums, visitor centers, cultural and educational facilities, and spaces providing services for the public. However, the insertion of new building volumes into archaeological sites, historic environments, and cultural landscapes may compromise the authenticity of place, disrupt the continuity of topography and historic vistas, and compete with the visual and symbolic primacy of heritage monuments.

The present research examines "architectural invisibility" as a strategy for designing and integrating contemporary public infrastructure within heritage sites. Invisibility is not equated with the literal concealment or disappearance of architectural form; rather, it is defined as the controlled visual, morphological, and environmental presence of a new intervention. From this perspective, architecture deliberately recedes as an autonomous object in order to reinforce the legibility of the monument, the continuity of the cultural landscape, and the experiential perception of historical memory.

Particular emphasis is placed on earth-sheltered, underground, and topographically integrated structures, in which the ground is approached not as a passive background but as an active form-generating and environmental parameter. The integration of new construction into the terrain may reduce its visual impact, preserve critical sightlines, and contribute to thermal stability and the protection of sensitive archaeological remains. At the same time, the transition from the surface to the subterranean realm, the modulation of light and shadow, and the alternation between concealment and revelation can function as instruments of spatial narration and as means of interpreting memory.

Methodologically, the study combines a literature review with the comparative analysis of selected Greek and international cases. Their evaluation is structured through a common analytical framework that considers the degree of integration into the ground, the relationship between the new intervention and the monument, the preservation of historic topography, microclimatic protection, energy and environmental performance, reversibility, accessibility, and the formation of the visitor experience. The comparative approach is further associated with the principles of the Historic Urban Landscape (HUL), treating cultural heritage as a dynamic resource for sustainable and place-based transformation.

The research also critically examines the inherent contradictions of architectural invisibility. Reduced visual presence does not necessarily entail a limited environmental footprint. Excavation, intervention in the ground, waterproofing requirements, mechanical

ventilation and artificial lighting, as well as archaeological and geotechnical risks, may generate substantial environmental and material impacts. Architectural invisibility is therefore assessed as a multidimensional relationship between visual discretion, heritage protection, functionality, environmental performance, and the potential reversibility of the intervention.

The study aims to formulate an initial framework of design principles for public infrastructure introduced into heritage sites without diminishing their historical legibility. Architectural invisibility is thus proposed as a strategy for sustainable conservation and resilience, through which contemporary functional requirements can be incorporated into landscapes of memory while reinforcing the preservation, accessibility, and intergenerational transmission of their cultural values.

Key words: architectural invisibility, cultural heritage, landscapes of memory, earth-sheltered architecture, public infrastructure, resilience.

MANAGEMENT PLAN OF CULTURAL HERITAGE AND SUSTAINABLE DEVELOPMENT; THE CASE OF ANCIENT GREEK THEATRE

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Abstract

Culture and heritage values are in jeopardy due to the effects of climate change in an era of environmental and societal transition. As there are diverse kinds of heritage, there is a need for tailor-made approach for their protection from the damage and the risks of climate change, which affects differently each place. Especially for the open-air monuments, the surrounding environment plays a significant role in the overall composition, which creates a cultural landscape.

The case of ancient Greek Theatre represents a type of heritage with immediate exposure to the climate and the effects of climate change. With the specific architectural structure and the profound connection to the history and the society, ancient Greek theatres require a management plan for their protection and sustainable development in the contemporary world. The basis of this plan is the strategy of mitigation and adaptation for interpretation of the heritage values, the safeguarding of architectural parts and the transmission to the next generations. Through literature review, the main tools are the risk assessment and the vulnerability approach so as to create a heritage management plan, with the ability to take into account the unique identity of each monument.

While studying the threats of theatres and their landscape, stakeholders are a major pillar of the implementation of the management plan. Climate experts, culture specialists and local communities can form a multidisciplinary approach respecting the uniqueness of the heritage and identifying the appropriate conservation and adaptation measures.

To sum up, the cultural landscape is under risk due to climate change. This study proposes the framework of a dynamic management plan dedicated to the architectural structure, the cultural landscape, the imprint on cultural diversity and sustainability and comprehension and dissemination of the effects of climate change. So, the creation of an adaptable heritage management plan can promote universal cooperation and constant evaluation of the results of the application.

Key words: Management plan, heritage values, cultural landscape, stakeholders, cultural sustainability, adaptation mitigation strategy

REFRAMING PORT LANDSCAPES AS MEMORYSCAPES: RECONNECTING COLLECTIVE MEMORY, PLACE IDENTITY AND URBAN RESILIENCE

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Abstract

From antiquity to the present day, people have chosen to settle close to water. Modern ports, with the growth of international trade and the introduction of new technologies, have significantly transformed the urban landscape and the function of cities' waterfronts. In short, contemporary cities are seeking a new form of urbanity that can restore the relationship between the city and water.

The relationship between coastal cities and the sea has always been close, as the port has historically constituted the most important factor in their development. Both the land-based port zone, where the cities' socioeconomic activity took place, and the maritime zone, where ships docked, formed a vital part of the urban fabric, concentrating much of their function and everyday life.

The discussion on waterfronts, or more precisely on the zones of contact between the city and water, is obviously not a new issue in urban planning discourse. The enduring importance of trade, along with other sea-related activities, endowed these zones with multiple functions. Throughout the historical development of port cities, these areas have been particularly open to transformations, which also influenced the overall restructuring of the city.

The aim of the present paper is therefore to highlight the dimension of port landscapes as memoryscapes, namely, spaces within the urban landscape where collective memory has been spatially inscribed and continues to be reproduced through buildings, routes, infrastructure, place names, practices, narratives, and residents' lived experiences. The methodology followed is based on the presentation and comparative evaluation of three case studies: the ports of Patras, Piraeus, and Thessaloniki, which constitute the most dynamic and recognizable ports in the country. The conclusion drawn is that the preservation, reinterpretation, and integration of these layers of memory into contemporary urban planning can strengthen components such as place identity, sense of belonging, social cohesion, and adaptive capacity, ultimately contributing to the safeguarding of cities and the enhancement of their resilience.

Key words: Port landscapes, collective memory, sense of belonging, urban resilience, memoryscapes.

ADAPTIVE REUSE OF THE EOK TOBACCO FACTORY IN KAVALA: SOCIAL HOUSING, INDUSTRIAL MEMORY AND URBAN RESILIENCE THROUGH A.I.

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Abstract

Industrial heritage constitutes a fundamental component of cultural memory, urban identity, and collective experience. In Greece, tobacco factories represent a distinctive industrial typology associated with economic development, labour, and urban transformation. The former tobacco factory of the National Tobacco Organization (EOK) in Kavala exemplifies this heritage, currently affected by partial abandonment and functional obsolescence.

This paper investigates the adaptive reuse of the EOK factory as social housing, exploring how contemporary residential functions can preserve industrial identity, authenticity, spatial continuity, and structural legibility. It examines the potential of continuous occupation to sustain collective memory, reconnect heritage with urban life, and strengthen urban resilience, while considering the contribution of artificial intelligence and smart technologies to conservation and environmental performance.

The methodology combines historical and architectural documentation, typological and structural analysis, and contemporary conservation principles, emphasising authenticity,

reversibility, minimum intervention, and material legibility. The design concept, "living within the industrial shell," introduces distinguishable residential units within the existing reinforced-concrete framework, respecting its structural grid, industrial scale, and fenestration. Double-height spaces, mezzanines, and communal areas reinterpret the collective dimension of the former workplace.

The study proposes adaptive reuse as a strategy for transforming an obsolete industrial structure into an active component of contemporary urban life. Social housing promotes everyday engagement and reduces the risks of abandonment and museification. Reversible interventions preserve architectural authenticity, while artificial intelligence supports digital documentation, condition assessment, environmental monitoring, energy management, and heritage interpretation. The research highlights how integrating social housing, conservation, and intelligent technologies can preserve industrial memory, address contemporary social needs, and contribute to resilient urban environments.

Key words: industrial heritage, adaptive reuse, social housing, artificial intelligence, urban resilience

THE LENS' CULTURE: PHOTOGRAPHY AS CRITICAL THINKING AND A VISUAL DIARY OF CHANGING URBAN LANDSCAPES

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Abstract

In an era of rapid urbanization and continuous transformations, photography emerges not merely as a means of documenting change, but as a way of observing, interpreting and critically engaging with the evolving city and landscapes.

At the same time, smartphones and digital image-making has transformed photography into an everyday Visual Diary. Millions of images are produced and shared each day, driven by the desire to record experiences, preserve moments and very often construct, a way that we wish to were, of personal and collective memories. In this context, of everything might exists to be photographs, questions emerge about the role of the image in contemporary culture.

The paper explores photography as a form of visual thinking through which the changing urban landscape can be read, interpreted and questioned. Moving between documentary observation, personal experience and cultural memory, photographic images reveal not only what has changed, but also what may otherwise remain unseen: traces of everyday life, transformations of place, disappearing landscapes and emerging forms of urban identity.

Rather than treating images as static records of the past, the paper approaches them as active carriers of memory and interpretation, visual fragments through which the city and its landscapes can be understood as processes in continuous transformation.

Through a visual journey across changing urban environments, the paper examines the relationship between photography, critical thinking and memory, proposing the photographic image as both a record of transformation and a way of thinking about the landscape.

Key words: photography, landscape, urban landscape, memory, culture

SCHOOL ROUTES AS CATALYSTS FOR SUSTAINABLE URBAN MOBILITY AND CHILD-FRIENDLY URBAN ENVIRONMENTS

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Abstract

This article examines the complex relationship between urban resilience and sustainable mobility in modern cities, focusing on the contribution of school routes to the creation of child-friendly cities. In doing so, it achieves a threefold set of goals—inclusion, resilience, and sustainable mobility—which is also linked to climate change mitigation.

It is clear that sustainable mobility is one of the most important prerequisites for the proper functioning of the city, given the constantly increasing need for urban travel. In particular, routes to schools and sports facilities contribute to both the mental and physical health of citizens and the social and cultural development of the area by encouraging the use of alternative modes of transport.

The research examines key concepts and models governing modern urban mobility and resilience in the face of environmental and social challenges, highlighting the critical role of school routes as fundamental pillars for promoting sustainable mobility. This entire approach is supported by the presentation of two cities (case studies): the first, Piraeus, is more advanced in its planning efforts in this direction, while the second, Kavala, is attempting—through participatory initiatives involving the school community—to implement placemaking interventions that encourage safe, sustainable travel to schools.

Modern urban development is characterized by mounting pressures related to traffic congestion, environmental degradation, and social inequalities, making it imperative to create cities that combine sustainable mobility with urban resilience. Consequently, this article aims to assess the status of Greek cities in this regard and to highlight the importance of integrating this dimension into spatial planning and urban development.

Key words: school routes, sustainable urban mobility, walkability, child-friendly cities, public space.

THE TRANSFORMATION OF DRAMA THROUGH ITS TOBACCO WAREHOUSES: NEGLECT, URBAN VOIDS AND ADAPTIVE REUSE

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Abstract

Eastern Macedonia and Thrace developed a strong identity around tobacco cultivation and trade during the first half of the 20th century. The most significant urban centers that produced tobacco were Drama, Kavala and Xanthi. This article explores the urban transformation of Drama through the surviving traces of tobacco warehouses spread throughout the cityscape.

Specifically, the research focuses on some of the most important tobacco buildings, examining their structural attributes, architectural characteristics and functions while revealing the contrasts between their past condition and their present state. It also examines how the neglect and abandonment of tobacco structures have contributed to the formation of the urban voids and affected the surrounding urban fabric. At the same time, the paper focuses on the potential of the tobacco warehouses to be integrated to the contemporary urban environment through adaptive reuse. The Spierer warehouse is presented as a successful example of adaptive reuse, having been transformed from a warehouse into a five-star hotel.

Finally, the article provides evidence of the transformation of Drama's tobacco warehouses and examines their impact on the urban landscape from social, economic and spatial perspectives. The results showcase the significance of tobacco warehouses not only as industrial structures but also as important elements of the city's forthcoming urban and economic transformation. Their different outcomes, from neglect and abandonment to adaptive reuse, reflect the transformation from an industrial economy to new forms of urban identity.

Key words: Tobacco Warehouses, Drama, Urban Voids, Adaptive Reuse

Special Session:

"MIND THE GAP": BRIDGING ACADEMIA, PLANNING PRACTICE AND LOCAL IMPLEMENTATION

Organized by **Lalenis Konstantinos**

THE RIGHT TO THE CITY OF THE DEAD

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Abstract

The phrase "the right to the city" remains perennially relevant and is frequently invoked as a rallying slogan, particularly in recent years. It was originally articulated by the French philosopher and sociologist Henri Lefebvre as a response to the urban crisis of the 1960s. Lefebvre viewed this period—most notably the events of May '68 in Paris—as parallel to those of the Paris Commune of 1871.

This paper examines the enduring, reciprocal, and intertwined relationship between the city of the living and the necropolis, expanding Lefebvre's concept of "the right to the city" into the realm of the cemetery. Grounded in the theory that space is a social construct, this study demonstrates how the cemetery functions as a microcosm of society, reflecting power structures, class antagonisms, and cultural shifts.

Historically, the cemetery served as the nucleus of organized human settlement. In the Middle Ages, its integration into the urban fabric via the churchyard endowed it with the character of a public gathering space. However, during the spatial turn of the 18th and 19th centuries, rapid urbanization and public health crises led to the expulsion of cemeteries outside city limits. Their rational redesign—guided by the "medical" metaphor of circulation and geometric spatial planning alongside Haussmann's boulevards—acted as a instrument of social control and gentrification.

Under emerging capitalism, the democratic rhetoric surrounding individual ownership of the "final abode" masked deep class distinctions. The spatial arrangement of monuments, the industrialization of materials, and the rise of funerary sculpture transformed cemeteries into sites of consumption, social display, and the material affirmation of bourgeois hegemony.

By examining the management of deceased migrants' bodies, the analysis extends to the contemporary condition of "urban marginality" and "necro-slums," revealing a system of systematic spatial and social exclusion.

Finally, the paper contends that cemeteries are contested spaces where dominant power interacts with heterotopias and counter-monuments of resistance, concluding with a call for "the right to difference" and "the right to space" within the necropolis.

Kew words: Space, City, Necropolis, Cemetery, Urbanity, Class Stratification, Urban Planning, Gentrification.

CORRUPTION IN PLANNING AND LAND DEVELOPMENT IN GREECE: THE NEVER-ENDINNG FIGHT WITH LERNAEAN HYDRA

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Abstract

In June 2026, Greek authorities dismantled a bribery network embedded in the planning departments of Kifissia and other Attica municipalities: six arrests, twenty-nine documented payments of €1,000–€30,000 for building permits, legalisations of illegal constructions, reduced fines and favourable opinions of architectural councils — and -according to the mass media- family ties reaching the top of the planning administration, forcing the resignation of high ranking officials of the Ministry of Environment.

To the author this is déjà vu: our mid-2000s research on corruption in Greek planning and implementation system opened with the prosecution of the Director of the Rhodes Planning Department, for various reasons related to corruption, among them being the granding of building permits, while the related permit files were completely empty. Between the two scandals lies a profound transformation of the Greek anti-corruption and planning landscape: inspection bodies consolidated into the National Transparency Authority (2019), building permits digitalized through the e-Adeies platform (2018), the cadastre nearing completion, successive laws on illegal construction and spatial planning reform. Greece's Corruption Perceptions Index score has improved (50/100 in 2025) yet remains among the lowest in the EU, and planning services generated over 5,300 complaints to the Transparency Authority in 2024 alone.

This paper initially describes a theoretical framework concerning corruption, and specifically corruption in spatial planning and implementations. Next, it compares the empirical picture then and now, through inspection reports, attitude surveys and case studies. Drawing on scholarship reframing systemic corruption as a collective-action rather than a principal-agent problem, it argues that digitalization and institutional consolidation displaced rather than eliminated corruption opportunities, relocating them where discretion survives: exceptions, land-use changes, enforcement, and collective advisory bodies. It concludes by correlating planning corruption with national socio-political processes and EU influence, and by examining the transferability of reforms across Mediterranean countries.

Key words: Corruption in spatial planning, National Transparency Authority, social capital in planning, bribes, sweeteners

TRANSFER OF DEVELOPMENT RIGHTS IN GREECE: THE GREEK FRAMEWORK IN COMPARATIVE PERSPECTIVE ON LAND-USE PLANNING, PROPERTY RIGHTS, AND NON-MONETARY COMPENSATION

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Abstract

Transfer of Development Rights (TDR) is a land-use planning instrument through which development potential that is restricted or cannot be exercised at its original location may be transferred, subject to the applicable legal and planning framework, to another property or designated receiving area. By redistributing development potential spatially, TDR pursues broader planning objectives, including the protection of cultural heritage, the natural and urban environment, and other areas subject to public-interest restrictions. It may also operate as a form of non-monetary compensation by enabling affected property owners to preserve or partially recover the economic value associated with restricted development potential, rather than receiving direct monetary compensation.

In Greece, TDR has long constituted an ambitious yet controversial planning mechanism. It seeks to reconcile the constitutional protection of cultural heritage and the natural and urban environment under Article 24 of the Constitution with the protection of property under Article 17. Earlier legislative frameworks, including Laws 880/1979, 2300/1995, and 3044/2002, became largely ineffective owing to structural deficiencies, administrative inertia, and the annulment of essential provisions by the Council of State, notably in Decisions 1071/1994 and 2367/2007. The Court identified, inter alia, the absence of objective spatial-planning criteria, insufficient integration of TDR into the planning system, and inadequate safeguards for the transparent and controlled allocation of transferred rights.

Subsequent reforms, introduced between 2017 and 2020 and consolidated principally by Law 4759/2020, sought to address these deficiencies. They established the Digital Land Bank, introduced procedures for designating receiving zones through presidential decrees based on planning and environmental criteria and supported by Strategic Environmental Assessment, and abolished mechanisms raising constitutional concerns, particularly those associated with the regularisation of unauthorised constructions. The Digital Land Bank was implemented in March 2026.

This article examines the legal and practical operation of TDR in Greece, identifies continuing institutional and planning obstacles, and proposes legislative and procedural reforms to enhance its effectiveness, legal certainty, and compatibility with sustainable development. It further adopts a comparative perspective, examining selected European systems, particularly Spain and France, as well as the United States.

Key words: Transfer of Development Rights; Greek planning law; property rights; non-monetary compensation; constitutional protection; Digital Land Bank; comparative planning law.

SUSTAINABLE MOBILITY AND RURAL RESILIENCE: INTEGRATING LAND-USE AND TRANSPORT PLANNING IN A SHRINKING MOUNTAINOUS AREA – THE CASE OF STAVROUPOLI, XANTHI, GREECE

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Abstract

Mountainous and rural areas across Europe face significant demographic and socio-economic challenges, including population decline, ageing, dispersed settlement patterns, limited accessibility and the deterioration of transport infrastructure. At the same time, these areas often possess considerable natural and cultural resources that can provide opportunities for new forms of local development. This paper explores how integrated spatial and transport planning can contribute to transforming these challenges into opportunities for rural resilience, focusing on the Municipal Unit of Stavroupoli in the Municipality of Xanthi, Greece.

Stavroupoli is characterised by population decline, a dispersed network of settlements, limited public transport provision and severe constraints in the existing road network, while the former railway connection is currently inactive. These conditions contribute to reduced accessibility and connectivity between settlements, services and local activity centres. Nevertheless, the area possesses substantial natural and cultural capital, including the Nestos River, mountainous landscapes, forests, traditional settlements and opportunities for hiking, nature-based recreation and alternative tourism.

The paper examines the potential of the Urban Local Plan (ULP) as an opportunity to address these challenges through an integrated planning approach that combines land-use planning, transport infrastructure and sustainable mobility. Rather than treating transport infrastructure as an isolated technical component, the study considers its role in supporting the spatial organisation of settlements, improving accessibility to services and connecting natural and cultural assets with local economic activities.

Particular emphasis is placed on the potential of coordinated interventions across three scales: improving local road connections and inter-settlement accessibility; developing walking and hiking networks linked to natural and cultural sites; and providing low-impact mobility infrastructure supporting sustainable tourism. The paper argues that such an approach, embedded within the framework of the ULP, can strengthen spatial connectivity, support local development and enhance the resilience and long-term attractiveness of shrinking mountainous areas — with implications transferable to comparable contexts across southern Europe.

Key words: Sustainable mobility, land-use planning, local development, Stavroupoli in the Municipality of Xanthi

Special session:

"RUINS FOR ATHENS". REPURPOSING URBAN INITIATIVE FOR NEIGHBORHOOD SUSTAINABILITY

Organized by **Prof Riva Lava**

INSIDE – OUTSIDE: RUIN IN TRANSITION. A SUBTLE INTERVENTION ON FILOPAPPOU HILL.

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Abstract

This presentation attempts to outline and evaluate the process of producing an architectural proposal within the framework of the pilot research program "RUINS for Athens", focusing on the role of coordination and the Living Lab methodology. The central objective of the project was the creative and sustainable reuse of the building material from the demolition site on Apolloniou Street, with the aim of creating a sustainable, safe, and inclusive public space that reconnects the neighbourhood of Ano Petralona with Filopappou Hill.

Through a co-creation and hands-on workshop, the working group (composed of students from different academic years and fields of study) was tasked with bridging the technical precision of circular reconstruction with the social needs of the community. By applying participatory tools and actively listening to residents of the neighborhood the design approach treated demolition materials not merely as a material resource, but as carriers of collective memory and the neighborhood's historical identity.

The design proposal of the team I coordinated focused on the sensitive management of the landscape's materiality and textures, the vegetation and the resolution of complex spatial discontinuities and accessibility issues to create an inclusive core of gathering in the heart of Athens. With the above in mind, and with the aim of proposing solutions, we sought to seamlessly integrate new design elements into the study area, complementary to the existing ones, preserving the scale and the authentic character of the neighborhood.

A critical evaluation of the process could highlight the educational and practical value of interdisciplinary Living Labs like "RUINS for Athens". It confirms that the combination of the sustainable reuse of materials with participatory design constitutes an essential, resilient model of urban regeneration, capable of transforming urban fragments into vibrant spaces for gathering and cultural continuity.

Key words: sustainability, reuse, reconstruction, Living Lab, neighbourhood, participatory design

RUINS for Athens: A CRITICAL EXERCISE IN INTERDISCIPLINARY, PARTICIPATORY AND MULTI-STAKEHOLDER DESIGN

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Abstract

The presentation will narrate the experience of the "RUINS for Athens" pilot research program and will analyze valuable instances of collaboration between academic institutions, non-profit research organizations, and public and private stakeholders. The main objective of the project was the critical reuse of the demolition material from a traditional Athenian house, through the design of an inclusive and pleasant public space that would act as a passage from the neighborhood of Ano Petralona towards Philopappos Hill.

The research project was realized over a period of two months, through a series of intensive workshops and design sessions. Three student teams were formed, each led by a dedicated coordinator. Each team experimented with traditional construction methods, was trained in the principles of inclusive and participatory design, engaged with the local ecosystem, and visited material extraction and processing sites. At every step of this journey, the students were guided by local craftsmen, field experts, landscape architects, and industry professionals, thus developing hands-on experience with every facet of the project.

The participatory design process meaningfully informed all three design proposals. Following the careful crafting of questionnaires, the students walked through the neighborhood of Ano Petralona to gather local responses. In doing so, they conversed directly with residents and gained valuable insights into the neighborhood's history, as well as the community's aspirations and concerns.

Finally, this pilot project illuminates the potential of impactful civic partnerships. The substantive and consistent collaboration between the National Technical University of Athens, the ENA Institute for Alternative Policies, the Municipality of Athens, and a private partner offers a compelling example that yielded well-researched and actionable results.

Key words: sustainability, circular economy, local materiality, urban ruins, living lab, participatory design, civic partnership

RUINS° FOR ATHENS – EMBEDDING UNIVERSAL ACCESSIBILITY AND "DESIGN FOR ALL" IN HISTORICAL URBAN TOPOGRAPHIES: INTEGRATING PHYSICAL MOBILITY, MULTI-SENSORY PERCEPTIBILITY AND CIRCULAR PUBLIC SPACE INTERVENTIONS

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RUINS° for Athens redefines public space intervention by centering on the principles of Universal Design and "Design for All" within complex urban and historic environments. Presented as part of a special session dedicated to RUINS° for Athens, the project prioritizes autonomous, secure, and comfortable physical and sensory access for all community members, ensuring equitable participation across diverse mobility, visual, auditory, and cognitive user profiles. Rather than treating accessibility as a secondary technical adaptation, the intervention integrates inclusive infrastructure as a foundational element of public space functionality, spatial communication, and civic autonomy.

To navigate challenging topographies and sensitive heritage surroundings, the project employs non-intrusive, fully reversible design solutions that uphold the historical character of the locus while systematically eliminating physical barriers. Incorporating continuous, slip-resistant pathways, low-gradient transitions, and ergonomic resting elements ensures low physical effort and safe spatial negotiation for wheelchair users, elderly individuals, and pedestrians with reduced mobility.

Complementing physical movement, the design embeds multi-sensory wayfinding and accessible communication systems to enhance overall spatial perceptibility. Through tactile ground indicators, high-contrast visual signage, intuitive iconographic cues, and alternative audio and visual information modes, the intervention addresses the specific needs of visitors with sight, hearing, or cognitive impairments. By harmonizing physical access with multi-layered perceptual guidance, RUINS° for Athens establishes a replicable methodology for creating barrier-free, inclusive, and welcoming public spaces within historic urban fabrics.

Key words: RUINS° for Athens, Universal accessibility, Design for All, Physical mobility, Sensory perceptibility, Barrier-free urban design, Historical topographies

BEYOND AESTHETICS: THE VALUE OF HIGH QUALITY ARCHITECTURAL FACADE DESIGN

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Abstract

From Jane Jacobs' (1961) observation that buildings "cannot turn their backs or blank sides" on the street "and leave it blind", highlighting their influence on the public realm, to David Throsby's (1999) conception of cultural capital as an asset embodying cultural value while generating cultural and economic benefits, architectural façade design emerges as more than a private matter. Although façades are elements of private property, their architectural quality is experienced far beyond their owners and occupants. Through their presence in the built environment, building frontages can generate positive or negative externalities, creating or diminishing aesthetic, cultural, social, environmental and economic value for occupants, neighbors, pedestrians and the wider urban community. High-quality façade design may enhance people's well-being, streetscape quality, neighborhood identity, commercial vitality and property values, while creating lasting urban value for future generations; conversely, poor design may impose corresponding costs.

Drawing on architecture, environmental psychology and economics, this paper identifies and maps key façade-design attributes - including composition, proportions, materiality, color, transparency, complexity, greenery, maintenance and human scale - and examines their potential aesthetic, psychological, social, environmental and economic effects, establishing the conceptual basis for a preliminary framework for assessing the wider value generated by architectural façade design.

Aligned with the United Nations 2030 Agenda for Sustainable Development and the New European Bauhaus (NEB), this multidisciplinary perspective recognizes high-quality architecture as more than an aesthetic endeavor, highlighting its social, cultural, environmental and economic value and reinforcing its importance in urban policy, investment and sustainable regeneration.

Key words: Architecture, Externalities, Cultural capital, Value, Well-being

Session:

ENTREPRENEURSHIP AND SUSTAINABLE DEVELOPMENT

FAMILY STABILITY AS A MISSING PILLAR OF SUSTAINABLE LOCAL ECONMIC DEVELOPMENT: RETHINKING FAMILY BUSINESS CONTINUITY IN UGANDA

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Abstract

Family businesses form the backbone of national economies globally. In Uganda, they account for over 70-90% of SMEs that make a huge contribution to the private sector, employment, innovation, GDP, and economic stability. Despite their economic significance to livelihoods and local economic resilience, sustainable development research has largely explained enterprise sustainability through economic, environmental, and institutional drivers, while undermining the stability of family systems that govern many enterprises in developing economies like Uganda.

This paper argues that family stability is a missing pillar of sustainable local economic development. Existing family business literature is mostly rooted in developed economies with formal governance structures, succession planning, and documented ownership. Yet research is scarce in Uganda, where enterprises operate informally, with governance deeply ingrained in marriage, kinship ties, customary institutions, patriarchal and religious norms. Marital conflicts should be understood not merely as a private family event but as governance disruption affecting enterprise continuity and resilience.

Drawing on Family Systems Theory, this paper conceptualizes the family as an economic governance institution. It develops a context-sensitive framework linking family system stability to family governance, enterprise continuity mechanisms, and resilience. The framework proposes that governance operates ownership continuity, leadership succession, conflict management, and intergenerational business survival, influencing an enterprise's capacity to absorb disruption, maintain operations, and sustain livelihoods.

This paper contributes a family-governance perspective to sustainable development by positioning family stability as a social infrastructure for resilient enterprises and inclusive local economic development. It provides a conceptual basis for empirical research and policy interventions where family and enterprises remain interconnected and enhance continuity and resilience.

Keywords: Sustainable development; Family business continuity; Uganda.

COLLECTIVE SALES AS A LEGAL INSTRUMENT IN FACILITATING URBAN REGENERATION IN SINGAPORE

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Abstract

In 1999, the collective sales regime in Singapore was given legal force when sections 84A to 84G of the Land Titles (Strata) Act 1967 (hereinafter 'the LTSA') (currently the 2020 Revised Edition) were enacted. The primary objectives are two-fold: to (i) facilitate optimal use of prime land; and (ii) promote urban regeneration. Popularly referred to as *en bloc* sales, a collective sale is a sale, usually to a single purchaser (such as a property developer) where completion (namely, the sale) of all the units in a strata development is effected at the same time. This paper will consider and discuss the following main areas: (i) the constitutionality of the collective sales regime in light of the right to equal protection before the law enshrined in the Singapore Constitution (2020 Revised Edition); (ii) the adequacy of the majority consent threshold to be satisfied for a collective sale to proceed; (iii) the protection afforded to unit owners who object to a collective sale; (iv) the duties owed by the collective sale committee to unit owners in a collective sale; (v) the factors to consider by the courts before approving a collective sale; and (vi) the pending proposals currently before Parliament to amend and improve on the LTSA so as to better achieve the twin national objectives in a collective sale as set out above. Relevant caselaw and statutory provisions will be referred to and discussed.

Keywords: land law, strata title legislation, collective sales of strata developments, *en bloc* sales, urban regeneration

CHALLENGES OF SUSTAINABLE AND GREEN REGENERATION OF INDUSTRIAL BROWNFIELDS: A CASE STUDY IN PIRAEUS, GREECE

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Abstract

The regeneration of brownfields provides opportunities for supporting the compact city perspective, being aligned with circular economy, reuse and preservation. Avoiding land consumption for new uses, sets also barriers to the phenomenon of urban sprawl. Taking into account the existing knowledge, the current study sheds light on the challenges met in greening ageing industrial brownfields while implementing new uses. The study delves into industrial Piraeus of the 1960s, using as a pilot case study a typical metalworking facility. The location and the case study building itself are representative of their type and construction period and pave the way for further discussion on the challenges of this kind of adaptive reuse. To be more specific, the case study building was constructed in 1965, and covers an area of 187.5 m². It is made of reinforced concrete and fell into misuse around the early 2000s. To highlight the challenges met when proposing sustainable architectural interventions as green roofs, a three-dimensional model was designed and nonlinear static (pushover) analysis, was undertaken in accordance with the Greek Code of Structural Interventions (KAN.EPE.). The study used the SeismoBuild software for the analysis. A lightweight extensive green roof was selected as the least structurally demanding option, with an approximately 8 cm substrate thickness and a reference load of 0.88 kN/m² (90 kg/m²); a conservative permanent load of 1.0 kN/m² (approximately 100 kg/m²) was incorporated into the seismic mass. The pushover analysis revealed significant deficiencies, particularly shear failures in several structural members from the early stages of loading, leading to proposals for targeted structural strengthening of the deficient elements. The integration of these structural requirements with the proposed green and adaptive-reuse interventions at an early design stage facilitates a more informed investment decision, improving the economic viability of brownfield regeneration projects.

Key words: Industrial Brownfields, Sustainable Urban Regeneration, Green Regeneration Adaptive Reuse, Seismic Resilience, Greece

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AI-ENABLED DEMAND PLANNING FOR SUSTAINABLE URBAN SUPPLY CHAINS: A CONCEPTUAL FRAMEWORK FOR SUSTAINABLE URBAN DEVELOPMENT

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Abstract

Urban supply chains face increasing challenges arising from demand variability, resource constraints, and the growing need for more sustainable logistics operations. In this context, Artificial Intelligence (AI) is increasingly applied to Demand Planning to support demand forecasting, data analysis, and supply chain decision-making. However, understanding how AI-enabled Demand Planning can support sustainability within the specific context of urban supply chains requires further integration of these research areas.

The present conceptual paper examines how AI-enabled Demand Planning may contribute to the development of sustainable urban supply chains. The study focuses particularly on the relationship between AI-supported Demand Planning and key supply chain decisions concerning inventory, replenishment, and distribution. Its objective is to explore how improvements in these planning processes may support waste reduction, more efficient resource utilisation, and broader sustainability objectives within urban supply chains.

The study adopts a conceptual approach based on the review and synthesis of existing literature on Artificial Intelligence, Demand Planning, urban logistics, and sustainable supply chain management. Through this synthesis, the paper examines the main connections between AI capabilities, demand-planning processes, operational supply chain decisions, and sustainability outcomes.

Based on these relationships, the paper develops a demand-planning-centred conceptual framework illustrating how AI-enabled Demand Planning may influence inventory, replenishment, and distribution decisions and how these decisions may subsequently contribute to sustainability outcomes in urban supply chains. The proposed framework integrates research areas that are often examined separately and provides a theoretical foundation for future empirical research on AI-enabled Demand Planning in the context of sustainable urban development.

Key words: Artificial Intelligence, Demand Planning, Demand Forecasting, Sustainable Urban Supply Chains, Urban Logistics, Sustainable Urban Development.

TRACKING URBAN POLYCENTRISM OVER FORTY YEARS: RANK-SIZE AND SPATIAL ECONOMETRIC EVIDENCE FROM ITALY'S LABOUR MARKET AREAS (1981–2021)

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Abstract

Understanding the urban structure of a territory, studying its evolutionary trajectories and identifying its heterogeneities provides the knowledge base for guiding decisions on resource allocation and for tailoring development interventions, whether uniform or differentiated, to different territorial contexts. This study addresses the topic by analysing Italy's urban dynamics over a forty-year period (1981–2021) through Italian's Labour Market Areas, functional units based on commuting self-containment that overcome administrative boundaries and reduce Modifiable Areal Unit Problem (MAUP) distortions.

The rank-size distribution analysis and subsequent spatial econometric modelling reveal marked heterogeneity across the dimensions analysed: population consistently proves sub-Zipfian, outlining a structurally polycentric urban hierarchy; land area shows high sensitivity to scale transformations; population density emerges as the most stable variable, closely following pure Zipf's Law. Spatially, the clear prevalence of the Spatial Durbin Model (SDM) and local estimators (Geographically Weighted Regression and Multiscale GWR) demonstrate genuine spatial non-stationarity in the Zipf exponent, whose territorial variability exceeds the sampling uncertainty of the global estimate.

Framed within New Economic Geography, the Italian urban system refutes the hypothesis of a single national trajectory, emerging instead as a plural mosaic of regional regimes: some contexts are driven by centripetal forces of circular causation in constant reinforcement, others by centrifugal forces preserving polycentric balance, and others still display structurally stable, path-dependent configurations.

This heterogeneity implies that regional development policies must be calibrated to specific territorial trajectories rather than designed uniformly. Beyond the Italian case, the protocol adopted here, from the functional unit of analysis to the composite polycentrism index built at the regional level, is replicable in other countries and on other functional territorial units, offering a transferable tool for comparative urban analysis and confirming Labour Market Areas as the appropriate analytical domain for detecting spatial heterogeneity in regional urban hierarchies.

Key words: Urban hierarchies, Labour Market Areas, Zipf law, Spatial econometrics, Urban polycentrism

MARKET ACCEPTANCE OF SUSTAINABLE AVIATION FUELS: WILLINGNESS TO PAY AND PRICE SENSITIVITY ACROSS EIGHT EUROPEAN COUNTRIES

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Abstract

Sustainable Aviation Fuels (SAF) are expected to contribute to the decarbonisation of aviation, but their market uptake depends not only on technological development and supply availability but also on consumers' willingness to bear the associated additional costs. This study examines market acceptance of SAF, focusing on willingness to pay (WTP), flight choice under a SAF price premium, and preferences for allocating SAF-related costs.

A quantitative survey was conducted in July 2026 among 1,600 respondents across eight European countries: Belgium, Germany, Greece, Italy, the Netherlands, Norway, Spain and Portugal. National samples of 200 respondents were structured according to key sociodemographic characteristics. Descriptive statistical analysis was conducted for the overall sample and separately by country, allowing cross-country differences in market-related preferences to be explored.

The findings reveal considerable price sensitivity. Only 26% of respondents were willing to pay more for a SAF flight, predominantly accepting premiums of up to 10%, while 29% preferred the same price as a conventional flight and another 29% would choose SAF only if it were cheaper. Nevertheless, when respondents were presented with two otherwise identical flights, and the SAF option offered substantial lifecycle greenhouse-gas emission reductions at a 10% price premium, 42% preferred the SAF flight, compared with 29% choosing the conventional alternative. Lower ticket prices were the most frequently identified factor that could increase SAF uptake (42%). Respondents also preferred shifting the financial burden away from individual passengers, with aviation-industry funding emerging as the most preferred approach.

The findings provide empirical evidence on the relationship between environmental benefits, affordability and consumer choice, offering insights for airlines, policymakers and other market actors designing pricing, funding and market-deployment strategies for SAF.

Keywords: Sustainable Aviation Fuels (SAF), Willingness to Pay (WTP), price premium, consumer preferences, green purchase intentions, decarbonisation, cost sharing

THE ROLE OF ENVIRONMENTAL AWARENESS IN SUSTAINABLE CONSUMER CHOICES: EVIDENCE FROM THE RETAIL SECTOR

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Abstract

This study analyses how environmental awareness can contribute to sustainable consumer decisions in the retail sector using a structured narrow literature review. The analysis brings together up-to-date evidence on the links between environmental knowledge, environmental concern, green attitudes, perceived consumer responsibility and sustainable purchasing behaviour. The study focuses on the gap between consumers' intentions and their actual purchasing behaviour. Their results show that, generally, environmental awareness correlates with more positive sustainable purchase intentions, higher intentions to check eco-labels, higher intentions to consider more environmentally friendly products, and, in several instances, a higher willingness to pay a green premium. However, knowledge alone does not always determine behaviour. Price, product availability, perceived quality, perceived value, green trust, retailer credibility, social norms, convenience, and perceived consumer effectiveness are all important factors that influence its impact. Retail interventions, such as transparent eco-labelling, sustainable packaging, product positioning, pricing and choice architecture, are also identified as important. In sum, sustainable consumption results from the relationship between individual environmental motivation and structural features of the retail environment. The study concludes that retailers and policymakers should provide consumers with credible information, sustainable alternatives that are easy to find, and economically viable purchasing options.

Keywords: environmental awareness, sustainable consumption, consumer behaviour, retail sector, green purchasing

Special session:

ISLANDS IN TRANSITION: INNOVATION, SUSTAINABILITY, TOURISM AND CLIMATE RESILIENCE

Chaired by **Assoc Prof Maria P. Doumi,**
Assoc Prof Andreas Alexopoulos,
Assist Prof Iason-Nikolaos Koufodontis,
Assist Prof Ioanna Pagoni,
Assist Prof Eleftheria Klontza,
Em Prof Angelis Vasilis

ANTICIPATORY CAPACITY IN NATIONAL STRATEGIC PLANNING FOR FOSTERING SUSTAINABLE URBAN AND REGIONAL DEVELOPMENT: A GREECE - FINLAND COMPARATIVE STUDY

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Abstract

Local governments shoulder much of the operational burden when converting sustainability commitments into action. This pressure is exemplified in Article 16 of the National Climate Law (4936/2022), under which plans must be outlined by municipalities in order for net emissions to be cut by 30% by 2030 against a 2019 baseline, since funding is tied to compliance. What is not evaluated is whether long-term planning is supported by the legislative framework and whether theory meets local reality.

This paper assesses the anticipatory capacity of Greek national strategic planning and its impact on sustainability in local level. Finland's mature institutional framework is used as a benchmark, rather than a transferable model, so as to contextualize the structural gaps in the Greek context.

The research methodology is based on a qualitative comparative content analysis. Eight Greek institutional documents, among them Greece 2.0, the National Climate Law and the Partnership Agreement 2021-2027, were evaluated and coded for degree of institutionalization, planning horizon, treatment of uncertainty and revision mechanisms, and compared against Finnish government and parliamentary foresight documents and OECD assessments. In addition, semi-structured interviews were conducted with senior officials of the Special Secretariat of Foresight, the National Documentation Centre and the National School of Public Administration and Local Government.

Unlike Finland, where policy premises are routinely challenged through structured foresight, the Greek framework locks cities into fixed targets without mechanisms to test underlying assumptions. Differentiating conventional programming from strategic foresight, this study highlights critical institutional gaps in Greece and shows how embedding foresight is essential for sustainable, credible long-term urban governance.

Key words: strategic foresight, anticipatory governance, sustainable development, strategic planning, Greece, Finland

MEASURING URBAN RESILIENCE AS A BASIS FOR STRATEGIC URBAN PLANNING: A FRAMEWORK FOR GREEK CITIES

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Abstract

Over the last decade, cities have been facing a set of growing environmental, social and economic pressures. Climate change, frequent extreme weather events, demographic change, social inequalities, ageing infrastructure as well as economic crises and their effects on urban development make both a city's readiness and adaptation capacity an imperative. In this context, resilience has become an essential pillar of urban development and its assessment an issue of critical importance. However, in order to measure urban resilience, it is necessary to examine a city's ability to react to unexpected shocks. Moreover, evaluating resilience is really meaningful only when it steers strategic decisions and becomes part of the urban planning process. The present paper defines the Urban Resilience Index as a measure of urban resilience. In doing so, it looks into all the variables affecting the city's resilience, suggest ways of measuring them and classifies them into different groups depending on the function of the city they may affect. The variables of each group give rise to a number of respective components which in turn determine the Urban Resilience Index. This index may be utilized in strategic planning and act as a basis for the development of an Urban Resilience Plan. Finally, the prospects of implementing the framework describe above in the case of Greek cities are also discussed.

Key words: Urban Resilience; Assessment of Urban Resilience; Urban Planning; Climate change; Sustainable Development; Greek Cities

DECENTRALIZED CIRCULAR SOLUTIONS FOR WASTE MANAGEMENT IN TOURISTIC ISLANDS FOSTERING COMMUNITY CO-CREATION AND DIGITAL COLLABORATION

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Abstract

Insular regions and remote tourist destinations experience sharp seasonal surges in visitor flows, temporarily inflating local resource consumption and waste generation. This variability, together with shifting waste composition (plastics, food waste, textiles), makes conventional fixed-infrastructure recycling plants inefficient: insufficient year-round volumes cannot justify high-cost investments, while capacity scalability and technical flexibility remain unmet needs. Current practices rely on costly transportation to distant mainland facilities or on unsustainable disposal, both carrying significant environmental and social costs such as coastal plastic accumulation, marine litter and microplastics, and uncontrolled burning of organic waste near residential areas. Structural constraints specific to islands include limited land for treatment and disposal infrastructure, absent hazardous-waste treatment capacity, economically unviable recycling schemes at small scale, illegal dumping, and high logistics costs for recovered materials. EU policy instruments, the Circular Economy Action Plan, the Ecodesign for Sustainable Products Regulation and the Raw Materials Act call for systemic, decentralized models that decouple production from resource consumption through local recycling and reuse.

Tourist behavior is a critical driver of waste generation, with guest preferences, dining formats and portion sizes shaping food, plastic and textile waste streams; understanding these patterns is essential to designing targeted mitigation strategies.

Building on the approach piloted by the Horizon Europe project ReBoat, which deploys a mobile, boat-based recycling and upcycling unit across Aeolian and Ionian islands to convert local plastic and textile waste into new products, this study explores decentralized, movable circular solutions for textile and plastic waste streams. Such systems, supported by advanced processing technologies, can absorb seasonal peaks on demand while engaging citizens, tourists, artists, designers and small producers through digital collaboration and co-creation. The paper discusses how modular, replicable, community-embedded waste infrastructures can reconcile tourism growth with environmental resilience across remote and island destinations.

Key words: Circular economy; sustainable tourism; community co-creation; insular regions

WINE GEOGRAPHICAL INDICATIONS AND TOURISM INTENSITY ACROSS EUROPEAN ISLAND DESTINATIONS: A COMPARATIVE SPATIAL ANALYSIS

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Abstract

Geographical indications (GIs) are important place-based assets that connect agricultural production, territorial identity, and destination differentiation. Their role may be especially relevant in island destinations, where strong local identities, limited productive space, and high tourism dependence often coexist. Wine production provides a particularly useful context for examining this relationship because wine GIs are spatially anchored and frequently incorporated into destination narratives, local gastronomy, and tourism experiences.

This study examines whether wine-GI concentration is associated with tourism intensity across European island destinations with established viticulture and whether this pattern differs from that observed across continental European countries and regions. A comparative dataset covering major and smaller island tourism markets is analyzed against a European benchmark using measures of tourism intensity and wine-GI density.

The findings indicate that European island destinations tend to combine substantially higher tourism intensity with greater wine-GI density than European countries and mainland regions more generally. However, higher GI concentration does not translate straightforwardly into higher tourism intensity within the island sample, and the relationship does not appear to differ systematically between island and wider European contexts. These results suggest that wine GIs form part of the distinctive territorial resource base of many island destinations, but their presence alone is insufficient to explain differences in overall tourism intensity.

The study contributes a comparative spatial perspective to research on geographical indications, island tourism, and place-based development. It also provides a basis for further investigation of how wine-related resources interact with destination characteristics, tourism specialization, and local development strategies.

Key words: Wine geographical indications; island destinations; tourism intensity; wine tourism; spatial analysis

FROM POTENTIAL TO VALUE: A DIAGNOSTIC FRAMEWORK FOR INTEGRATING SMALL-SCALE AGRICULTURE INTO TOURISM VALUE CHAINS

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Abstract

This study develops a diagnostic framework for assessing the integration of small-scale agriculture into tourism value chains and local food systems, with a focus on its contribution to sustainable destination development. It distinguishes between the potential for agriculture–tourism linkages and the extent to which this potential is translated into actual commercial relationships. The framework also examines the benefits generated for tourism businesses and small-scale agricultural producers.

The framework is developed through a conceptual synthesis of literature on tourism value chains, small-scale agriculture and sustainable destination development. Four interconnected dimensions are proposed: the Potential Linkage Index, the Actual Linkage Index, the Tourism Benefit Index and the Small-Producer Benefit Index. Two complementary measures – the Linkage Utilisation Gap and the Linkage Utilisation Effectiveness Index – are introduced to assess how effectively available linkage potential is converted into actual market relationships. The framework will subsequently be empirically assessed using primary quantitative data collected from small-scale agricultural producers and tourism businesses.

The framework is expected to demonstrate that the presence of local agricultural supply and tourism demand does not necessarily result in effective integration or stable commercial relationships. Comparing potential and actual linkages can identify the principal barriers preventing stronger agriculture–tourism cooperation. Assessing benefits across the two actor groups can further reveal how value generated through local sourcing is distributed and whether greater value is retained within the destination economy.

The study contributes a structured diagnostic approach that moves beyond a general assessment of agriculture–tourism relationships by explicitly distinguishing between linkage potential, realised integration and value creation. By incorporating the perspectives of both small-scale producers and tourism businesses, the framework can identify potential mismatches between local supply and tourism demand and provide a basis for targeted interventions. Its application can support destinations in strengthening local sourcing, fostering more stable commercial relationships and enhancing the retention of economic value within local economies.

Key words: small-scale agriculture; tourism value chains; local food systems; sustainable tourism; local development; agricultural-tourism linkages; destination development

TRIPARTITE COLLABORATIVE GOVERNANCE FOR ISLAND TRANSITION

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Abstract

Institutional fragmentation is a major barrier to policy coordination and to promoting a sustainable, resilient transition in island regions. The purpose of this study is the development and initial empirical evaluation of the Tripartite Collaborative Governance Index (TCGI). This newly developed composite index provides a quantitative assessment of the collaboration among Central Administration, Local Government (first and second tiers), and Chambers.

To develop the TCGI, this study uses a conceptual and methodological structure based on six dimensions of tripartite collaborative governance: communication and knowledge exchange, common planning, coordination and role distinction, trust and institutional commitment, collaborative capacity, and perceived institutional efficiency. The measurement structure of the index will be tested through quantitative research among decision-makers from the three institutional pillars. Secondary data on island regions' features of development and the intensity of their tourism progress will support the comparative evaluation. The level of institutional collaboration across island regions, as well as factors that reinforce or restrict its effectiveness, are expected to become evident through the implementation of the TCGI. Furthermore, it will enable the identification of strengths and weaknesses and the comparative evaluation of collaboration, supporting the planning of focused interventions.

This study contributes to the literature by introducing an original, comparable, and empirically verifiable measurement tool for institutional cooperation, adapted to the specific conditions of island territory, aimed at promoting this sustainable transition to island and increasing the effectiveness of multi-level governance in the island environment.

Keywords: Tripartite Collaborative Governance, Island Transition, Sustainable Development, Institutional Cooperation, Public Administration, Local and Regional Authorities, Chambers of Commerce.

MANAGING BUSINESS TRANSFORMATION CHALLENGES IN TOURISM SERVICE ECOSYSTEMS

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Abstract

The tourism industry is characterized by a shift to collaboration-driven innovation activities. Both researchers and practitioners are increasingly appreciating the potential of such activities in creating new business models and disrupting competition. A formal structure for observing these developments is tourism service ecosystems; i.e. networks of resource-integrating entities that co-create value through service exchange. However, realizing these benefits is not a simple task. In real settings, service ecosystems may need to reconfigure themselves, as organizations join, leave, or change their role. These actions will then require transformation, either within a participant or even across the ecosystem – a known difficult task in most service-driven sectors.

Our research aims to address this challenge through a novel two-dimensional model that captures the main drivers of service ecosystem-based innovation: value co-creation intensity and resource capitalization. By following a Design Science Research (DSR) methodology, our model defines a set of roles that a service ecosystem participant may acquire. Each role is described in terms of three sets of capabilities that capture transformation paths during ecosystem reconfigurations. A real application of our model (UK's Lake District tourism service ecosystem) is also presented in detail, for exemplifying our findings and highlighting our future research.

Key words: service innovation, business transformation, service ecosystems, tourism, design science research, organizational resilience

A STOCHASTIC MARKOVIAN MODEL FOR CARGO CRANE AVAILABILITY AND FAILURE COSTS IN BULK CARRIER UNLOADING OPERATIONS

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The efficient and reliable unloading of bulk carriers is a critical factor in maritime transport, as delays in cargo operations may directly affect port performance, and the overall operating cost of a shipping company. In bulk carriers equipped with multiple cargo cranes, the unavailability of a crane can reduce the unloading capacity of the corresponding cargo hold and may affect the overall process. This study proposes a stochastic modelling framework based on Continuous-Time Markov Chains (CTMCs) for analysing crane failures and their impact on the availability of cargo holds during unloading operations.

The proposed model considers a bulk carrier equipped with four cargo cranes, with each crane associated with the unloading of a corresponding cargo hold. The operational condition of each crane is represented through different stochastic states, such as normal operating condition, failed condition, and restoration or repair condition. A key contribution of the proposed approach is that it extends the analysis beyond the conventional assessment of technical reliability and availability. In particular, the study establishes a link between the probabilistic failure behaviour of the cranes and the economic consequences associated with their unavailability. The resulting framework therefore provides a quantitative connection between failure probability, equipment availability, operational delay, and economic loss. This allows alternative operational scenarios and maintenance strategies to be evaluated not only from a reliability perspective but also in terms of their financial impact.

Keywords: maritime shipping, gantry cranes, availability, stochastic modelling, Markov modelling

THE CONTRIBUTION OF THE WASTE GENERATION FACTOR TO THE CARBON FOOTPRINT OF THE HOSPITALITY INDUSTRY

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Abstract

Hospitality sector is an important contributor to the Greek and global economy, but its activities place vital environmental pressures though energy use, food preparation and waste generation. While energy consumption is widely recognized as a major source of greenhouse gas emissions, the contribution to the carbon footprint of waste generation and its management remains understudied.

This study presents a methodological approach for assessing the carbon footprint of a five-star hotel resort in Northern Greece while examining different sustainability scenarios for reducing related emissions. The proposed assessment considers four main sources of emissions: electricity consumption, propane used for food preparation, general hotel waste and food waste. Data for energy consumption were obtained from hotel's monitoring system, while waste management data (quantities, management practices) was collected through staff questionnaires and interviews.

The emissions were estimated in kg CO_2 eq/ guest night by using RETScreen, average data method and emission factors. Energy consumption appears to be the dominant contributor with 81% of the total emissions, food waste coming second with 11%, followed by 5% of other waste streams and 3% of propane consumption. Although waste-related emissions account for a smaller proportion of total emissions, the scenario analysis shows their potential as practical areas of intervention. Combining renewable energy sources with improved waste management practices (composting, recycling) could result in an overall emissions reduction up to 47%, emphasizing the importance of incorporating waste management practices to make tourism activities more sustainable.

Key words: waste, food waste, carbon footprint, hospitality sector

THE IMPACT OF LARGE-SCALE URBAN REGENERATION ON SUSTAINABLE URBAN DEVELOPMENT: THE CASE OF THE MUNICIPALITY OF ELLINIKO - ARGYROUPOLI IN GREECE

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Abstract

Large-scale urban regeneration projects constitute pivotal interventions for the contemporary sustainable city, as they stimulate the local economy and redefine citizens' quality of life. Within this context, this paper investigates the impact of the Elliniko regeneration—one of the largest urban interventions in Europe—on the sustainable development of the Municipality of Elliniko-Argyroupoli. By analyzing the project, the study explores, the institutional, social, economic, and environmental challenges faced by the municipal authority. The primary objective of the study is to highlight the effects of the Elliniko regeneration project on the city's sustainable development, focusing on the municipality's transition toward a new operational model that incorporates circular economy and digital transformation.

The empirical part relies on a mixed methodology, combining secondary data analysis with primary quantitative research conducted on a sample of 112 local residents. The findings demonstrate strong public support regarding the prospects for economic growth and employment. However, serious concerns are recorded regarding the effects of gentrification, the rising cost of living, and the strain placed on local infrastructure and the transport network. A central conclusion of the study is that the success of the project hinges not only on achieving economic goals and infrastructure milestones, but also on its harmonious integration into the social fabric. In this framework, proposals such as institutionalizing ongoing consultation with the local community and implementing compensatory measures to safeguard local entrepreneurship and social cohesion emerge as viable pathways for ensuring that the benefits of the regeneration are equitably distributed across the local community.

Keywords: Sustainable Development, Urban Regeneration, Local Government, Local Development, Gentrification, Greece

THE BLIND SPOT IN THE SAFETY NET: NON-VISIBLE DISABILITIES IN INCLUSIVE AND RESILIENT GREEK ISLAND TOURISM

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Abstract

Worldwide, approximately 1.3 billion people, one in six, live with a disability and an estimated 70–80% of them have non-visible disabilities: chronic illness, neurodivergence, mental-health and sensory conditions. As they travel, they form a large and growing market with distinct needs. In the European Union alone, potential demand for accessible tourism is estimated at around 127.5 million and destinations have begun to factor disability into their planning. Yet, both practice and academic literature concentrate almost entirely on visible, physical access, while non-visible disabilities remain largely absent from policy and research alike.

In Europe, structured efforts began early: the Hidden Disabilities Sunflower, launched at Gatwick in 2016, is now recognized at more than 200 airports. Greece, by contrast, has invested over the last years about €15 million almost exclusively in physical access (250+ accessible beaches, ramps and lifts at major heritage sites), with no systematic destination-level provision for non-visible needs.

This paper addresses the lack of research on travelers with non-visible disabilities. Methodologically, the study is a diagnostic review of literature, policy and practice, comparing Europe with Greece. Its aim is to profile this overlooked group and its distinct needs, to examine how European destinations have responded and to assess what Greece, still markedly behind, could apply, particularly across its islands. On this basis, it considers how island destinations in Greece can build a "safety net" that makes them as resilient and inclusive as possible, aligned with the Sustainable Development Goals, particularly SDG 10 and SDG 11.

Key words: hidden disabilities, non-visible disabilities, inclusive tourism, destination resilience, Greek island destinations

Special session:

CULTURE AND EDUCATION: INTERDISCIPLINARY PATHWAYS TOWARDS SUSTAINABILITY

Chaired by **Anna-Irene Tsatalmpasoglou** and **Foteini Maniou**

FROM ENTREPRENEURSHIP TO SUSTAINABLE TOURISM DEVELOPMENT: THE CASE OF LUISA SPAGNOLI AND PERUGIA

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Abstract
Entrepreneurship constitutes an important factor in economic and social development, while its contribution may extend beyond the boundaries of business activity, influencing the identity and evolution of a place. Of particular interest are cases of entrepreneurs whose activities were associated with innovation, employment, social welfare, and the development of a business tradition that continues to form part of the cultural and economic identity of a region.

The present paper examines the case of Luisa Spagnoli and the relationship between her entrepreneurial and social activity and the city of Perugia. Particular emphasis is placed on her position as a female entrepreneur in the early twentieth century and on her ability to overcome the gender-related barriers that characterized professional and entrepreneurial activity at the time. At the same time, the study explores the social dimensions of her work and her contribution to the development of a business environment associated with employment and local economic development.

The study subsequently examines how the tradition of chocolate production evolved into a distinctive element of Perugia's contemporary identity and gradually became incorporated into the city's cultural and tourism image. In this context, particular attention is given to the Chocolate Festival and to the potential of entrepreneurial and industrial heritage to contribute to the diversification of the tourism product and support local development.

The empirical component of the study is based on a quantitative survey involving 113 participants (N=113), aimed at investigating their intention to visit Perugia because of the Chocolate Festival. By linking historical entrepreneurial heritage with contemporary tourism activity, the study explores the potential of local entrepreneurial and cultural identity to enhance destination attractiveness and support a more sustainable approach to tourism development.

Keywords: Luisa Spagnoli, female entrepreneurship, Perugia, chocolate, tourism development, sustainability

THE USE OF THE CULTURAL DIMENSION IN THE TEACHING OF ITALIAN AS A FOREIGN LANGUAGE AND ITS CONTRIBUTION TO SUSTAINABLE EDUCATIONAL DEVELOPMENT: A PRELIMINARY STUDY IN GREEK HIGHER EDUCATION

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Abstract

The unequal institutional presence of foreign languages within a country's educational system affects students' language choices and, consequently, may limit the opportunities for less widely taught languages to be integrated into a more multilingual and interculturally oriented educational framework. Italian in Greek public education represents a particularly illustrative case: its teaching remains limited and discontinuous, in contrast to English, French and German, which enjoy a systematic and sustained presence. This situation appears to affect the visibility of Italian as an educational option in higher education, despite the strong cultural appeal associated with neighbouring Italy and its culture.

The present study examines the extent to which the systematic integration of elements of Italy's tangible and intangible cultural heritage into target-language teaching, together with an emphasis on the cultural interactions between Greece and Italy, can function as practices of sustainable educational development, fostering students' positive attitudes towards Italian and, consequently, their interest in choosing it as a field of study.

The research adopts a quantitative approach and is based on the statistical analysis of 63 anonymous questionnaires completed by students at the Advanced School of Tourism Education of Crete. Its aim is to examine participants' attitudes towards the integration of culture into Italian language teaching. The results are particularly encouraging, indicating a positive response to the integration of language and culture and suggesting that this educational practice can both strengthen interest in the target language and contribute to establishing Italian as an attractive educational option.

In addition, the study highlights, the potential of educational management as a strategic framework for increasing the visibility, promoting and extending the implementation of this approach to Italian language teaching and learning, with the broader aim of creating the conditions for the sustainable presence and development of Italian within the educational landscape.

Key words: Teaching Italian as a foreign language, cultural dimension of the target language, learning motivation, educational management, sustainable educational development

TOURISM TERMINOLOGY AS AN EDUCATIONAL TOOL FOR SUSTAINABLE TOURISM: A PRELIMINARY CURRICULUM-BASED STUDY IN GREEK HIGHER EDUCATION

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Abstract

The continuous evolution of the tourism sector and the growing importance of sustainability have contributed to the development and widespread use of specialised terms and concepts associated with sustainable tourism and contemporary approaches to tourism development. In this context, understanding and appropriately using such terminology is increasingly important in the education of future tourism professionals, as terminological competence can support both the acquisition of specialised knowledge and effective professional communication.

This preliminary study examines tourism terminology as an educational tool within the context of education for sustainable tourism. More specifically, it focuses on sustainability-related tourism terminology and investigates its presence and educational representation within curricula in Greek tourism higher education.

Methodologically, the study adopts a qualitative content analysis approach, drawing on official curricula and course descriptions from Greek tourism higher education. The analysis focuses on identifying the presence and educational representation of terminology associated with sustainability in tourism and examining how this thematic dimension is reflected in the educational material under investigation.

Rather than addressing tourism terminology in its entirety, the study adopts a focused sustainability perspective. It seeks to contribute to the discussion on the role of specialised terminology in education for sustainable tourism and to explore the significance of terminological competence for future tourism professionals' understanding and communication of sustainability-related concepts. By providing an initial systematic mapping of this specific terminological dimension, the study aims to establish a basis for further research into the role of tourism terminology in higher education and the preparation of future professionals for an increasingly sustainability-oriented tourism sector.

Key words: Tourism Terminology, Sustainable Tourism, Tourism Higher Education, Curriculum Analysis, Terminological Competence

EDUCATION FOR SUSTAINABILITY IN KINDERGARTEN: LEARNING THROUGH ACTION

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Abstract

Education for Sustainable Development is of particular importance from the preschool years, as attitudes towards the environment, cooperation, responsibility, and active participation can be fostered through experiential learning experiences connected to children's everyday lives. Within this context, the present study focuses on the implementation and investigation of an experiential environmental intervention in a kindergarten, aiming to foster early understandings of sustainability and environmental responsibility.

The educational intervention was developed through the observation of the immediate school environment. The children explored the kindergarten grounds, identified aspects they liked and areas they believed could be improved, and formulated their own suggestions. They subsequently participated actively in designing and implementing interventions. The principles of the 5Es were incorporated, while the activities were linked across the curriculum with Language, Mathematics, Natural Sciences, the Arts, ICT, and Social Education.

The research was designed as a qualitative case study incorporating elements of action research. Data collection was based on systematic observation of the children's participation, group discussions conducted before and after the intervention, as well as supplementary research material. The analysis focuses on the children's perceptions of environmental protection, their suggestions, and manifestations of cooperation, responsibility, and active participation throughout the implementation of the project.

The intervention explored the extent to which children's direct involvement in shaping their school environment can enhance their understanding of fundamental sustainability principles and foster attitudes of environmental responsibility. The study highlights the potential role of kindergarten as a setting in which Education for Sustainable Development can be transformed from theoretical knowledge into everyday experience, participation, and action, fostering from an early age the understanding that even small-scale collective interventions can contribute to creating a more sustainable school community.

Keywords: Education for Sustainable Development, preschool education, sustainability, experiential learning, environmental education, action research.

THE LEGASY OF ITALIAN RULE IN RHODES AS A RESOURCE FOR SUSTAINABLE CULTURAL TOURISM: RESIDENTS' PERCEPTIONS

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The period of Italian rule in the Dodecanese (1912–1947) left a particularly significant architectural and urban imprint on Rhodes, which remains a recognisable feature of the island's contemporary cultural landscape. Buildings, monuments, residential complexes and infrastructure dating from this period are associated today not only with historical memory, but also with the potential to highlight different aspects of cultural heritage within the framework of a more diversified and sustainable tourism model.

The present study investigates the perceptions of Rhodes residents regarding the cultural value of the architectural heritage of the Italian period and the potential for its preservation, promotion and utilisation in the development of sustainable forms of cultural tourism. Particular attention is given to characteristic remnants of the period, as well as to architectural and residential complexes that continue to shape the island's cultural identity, such as the Kallithea facilities and the settlement of Campochiaro. This heritage is examined as an integral part of the historical and cultural identity of Rhodes.

The empirical investigation is based on a quantitative survey of **302 permanent residents of Rhodes**, who constitute a distinct subsample of a broader study conducted across the Dodecanese. The analysis focuses on the extent to which Italian heritage, particularly its architectural dimension, is recognised as an element of cultural identity, on perceptions of its tourism value, and on residents' attitudes towards its utilisation for cultural and experiential forms of tourism.

The study seeks to highlight the role of the local community in the management and sustainable utilisation of a complex historical heritage and to investigate the extent to which the

preservation and interpretive promotion of the architectural legacy of the Italian period can contribute to enriching the tourism product of Rhodes, strengthening the connection between tourism and the island's historical and cultural identity, and supporting a more sustainable form of local tourism development.

Keywords: Italian rule, Rhodes, Dodecanese, architectural heritage, cultural identity, cultural tourism, sustainable tourism development.

CREATIVE WRITING AND CHILDREN'S LITERATURE AS EDUCATIONAL TOOLS FOR SUSTAINABLE DEVELOPMENT: FOSTERING CREATIVITY AND ECOLOGICAL AWARENESS

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Abstract

In today's world, sustainable development has become increasingly important. Education can play a crucial role in preparing future generations to become active and responsible citizens who can contribute to a more sustainable future.

The present paper investigates the role of creative writing and children's literature as effective educational tools for sustainable development, focusing on fostering creativity and ecological awareness. More specifically, it explores how children's books, through their characters, illustrations, narratives and themes, can enable children to engage with issues related to environmental protection, biodiversity, climate change and the interdependence between humans and nature in general. In addition creative writing activities are highlighted as a form of active and experiential learning, enabling children to express their ideas and emotions as well as engaging with issues of sustainability in a creative way.

The study combines theoretical and practical approaches, using creative writing activities based on selected children's books. Moreover, traditional folk tales, such as Snow White, are creatively adapted into environmentally themed stories that promote ecological awareness and sustainable thinking. Through these activities, familiar literary narratives are transformed into opportunities for children to explore environmental issues and develop an alternative perspective on sustainability.

The findings indicate that children's literature and creative writing can prove to be an excellent educational tool for teachers in fostering ecological awareness and promoting sustainable development. All in all, the proposed approach expands the role of children's literature beyond its linguistic and entertaining aspects, positioning it as a means of fostering ecological awareness, creativity, critical thinking, and active participation, while laying the foundations for a better and more sustainable future.

Key words: creative writing, children's literature, sustainable development, ecological awareness, sustainability, education, environmental education

Special session:

THE CONTRIBUTION OF THE ARMED FORCES TO SUSTAINABLE DEVELOPMENT

Chaired by **Foteini Maniou**

DEFENCE AND SUSTAINABLE DEVELOPMENT IN GREECE: A LITERATURE REVIEW OF ECONOMIC, SOCIAL, AND ENVIRONMENTAL IMPACTS

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This study reviews the relationship between defence and sustainable development in Greece through its economic, social, and environmental dimensions. The literature shows that the impact of defence expenditure on economic growth is mixed and depends on the composition of spending, domestic productive linkages, imports, and opportunity costs. Social effects, particularly those concerning employment, local communities, and the broader impact of military installations, remain less extensively studied. More recent research highlights increasing attention to environmental management, energy efficiency, resource use, and climate resilience within military infrastructure. Overall, defence and sustainable development should not be considered inherently conflicting objectives. Their compatibility depends largely on how defence resources and infrastructure are planned and managed. The review also identifies a significant research gap regarding integrated assessments of the economic, social, and environmental impacts of defence activities in Greece.

Key words: defence, sustainable development, military expenditure, environmental management, social impact

FROM FOLK CULTURE TO CULTURAL ENTREPRENEURSHIP: THE CASE OF THE WOMENS' AGRITOURISM COOPERATIVE OF MESOTOPOS, LESVOS

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Abstract

This paper presents a case study of the Women's Agritourism Cooperative of Mesotopos, Lesvos. It also constitutes an example of cultural entrepreneurship, transforming intangible cultural heritage into a resource for sustainable development. The Cooperative's activities combine economic viability, gender empowerment, and environmental responsibility, highlighting folk culture as a dynamic and renewable resource.

The women members draw upon knowledge and practices originating from the agrarian and pastoral society of Mesotopos, including the production and processing of wheat, milk, nuts, and fruit. However, they do not merely process raw materials into products. At the same time, they transform elements of collective memory, traditional knowledge, and cultural practices into contemporary products endowed with both economic and cultural value. This process can therefore be understood as a dual transformation: raw materials are converted into products, while memory and cultural identity are transformed into cultural and economic capital.

Concepts such as "tradition," "authenticity," "purity," and "locality" contribute to shaping the Cooperative's identity and differentiating its products from those of mass production. Authenticity, therefore, is not merely an inherent attribute of a product, but rather a socially and culturally constructed value.

The Cooperative's success demonstrates that folk culture is not a static remnant of the past, but rather a dynamic resource for contemporary entrepreneurial activity, local development, cultural promotion, and community empowerment.

To conduct the research, a mixed-methods approach was employed. The qualitative component was based on semi-structured interviews with women members of the Cooperative, aiming to explore their personal experiences and the processes of gender empowerment. In parallel, the quantitative component was conducted through a digital questionnaire addressed to consumers and visitors, with the aim of assessing their perceptions of the authenticity and locality of the products.

Keywords: Women's Agritourism Cooperative, Case Study, Cultural Entrepreneurship, Intangible Cultural Heritage, Gender Empowerment, Mixed-Methods Approach

FUNDING MODELS AND THE DEVELOPMENT OF THE DEFENCE INNOVATION ECOSYSTEM: THE ROLE OF HCDI AND CONTEMPORARY FUNDING PROGRAMMES

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Abstract

This study analyses the contemporary funding and development models shaping the defense innovation ecosystem of the Hellenic Armed Forces, with the Hellenic Centre for Defence Innovation (HCDI S.A.) serving as its central institutional point of reference. In the context of the transition towards technological superiority and strategic autonomy, the study examines the shift from traditional bureaucratic public procurement models towards more flexible, hybrid schemes that integrate startups, research centers and dual-use technologies.

Particular emphasis is placed on the role of HCDI as an institutional orchestra tor and intermediary (broker) between the General Staffs and the market. At the same time, the study maps the multi-level funding architecture of the ecosystem, which combines national resources, including a statutory percentage of armament programmes, equity-based investment instruments, including venture capital and defence innovation funds, as well as international resources and support mechanisms available through the European Defence Fund (EDF) and NATO's Defence Innovation Accelerator for the North Atlantic (DIANA).

Through this analysis, the study highlights how the establishment of a sustainable funding model and the commercialization of research can contribute effectively to strengthening national deterrence capabilities and enhancing domestic value added.

Keywords: Funding Models; Defence Ecosystem; HCDI; Venture Capital; Dual-Use Technologies; Armed Forces.

FROM THE TRIREME TO THE MODERN FRIGATE: THE DESIGN AND EVOLUTION OF GREEK NAVAL POWER

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Greek naval history represents one of the most important aspects of the country's historical and cultural development. For more than 2,500 years, the sea has played a decisive role in communication, trade, defense, and the expansion of Greek influence. The evolution of Greek warships reflects the technological, military, and political changes that have shaped Greek history.

In ancient Greece, the trireme was one of the most advanced and effective warships of its time. Its speed, maneuverability, and innovative design contributed significantly to the strength of ancient Greek naval forces. The Battle of Salamis in 480 BC is a remarkable example of the strategic importance of naval power and the decisive role played by the Greek fleet.

During the Greek War of Independence in 1821, Greek sailing ships and fire ships were used effectively against the Ottoman fleet. Their contribution demonstrated the importance of naval warfare in the struggle for independence. In the following decades, the establishment and modernization of the Hellenic Navy introduced steam-powered and armored vessels, marking a new era in Greek naval history.

The battleship Georgios Averof became a symbol of Greek naval power and played a significant role during the Balkan Wars. Today, modern frigates represent the latest stage of this long naval tradition. Equipped with advanced technology, communication systems, and modern weapons, they serve a wide range of operational and defensive purposes.

The journey from the trireme to the modern frigate is therefore not simply a story of technological progress. It is a continuous history of adaptation, innovation, maritime tradition, and national defense.

Keywords: Trireme; Frigate; Naval History; Greek Navy; Maritime Tradition

THE LEGACY OF PHILANTHROPISTS AND BENEFACTORS IN GREECE'S HISTORICAL AND CULTURAL HERITAGE: LASKARINA BOUBOULINA AND HER ROLE IN THE NAVAL STRUGGLE OF 1821

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Abstract

Laskarina Bouboulina was one of the most important female figures of the Greek War of Independence in 1821. Born in Constantinople in 1771, she came from a wealthy family and became involved in the struggle for Greek independence through her financial support, leadership, and military activities. At a time when women were generally excluded from warfare and political decision-making, Bouboulina played an exceptional role in the naval struggle against the Ottoman Empire. She used her personal fortune to build and equip several ships, most famously the warship Agamemnon. She also provided weapons, ammunition, food, and other supplies to the Greek revolutionary forces. When the revolution began, she organized a fleet and participated in naval operations, particularly around the Peloponnese. Her ships helped transport troops and supplies and contributed to the blockade of important Ottoman-controlled fortresses. Bouboulina was not only a financial supporter but also a determined leader. She took part in military campaigns and encouraged the revolutionary fighters with her courage

and strong personality. Her contribution demonstrated that women could play an active and influential role in a national struggle, even in a society where their public role was very limited. Although her life ended tragically in 1825, Bouboulina became a symbol of courage, sacrifice, and patriotism. Her participation in the naval struggle of 1821 shows that the Greek Revolution was supported by people from different backgrounds and that women also made significant contributions to the fight for independence. Today, she remains an important historical figure and an enduring symbol of female strength and leadership.

Keywords: Revolution; Naval Struggle; Courage; Self-Sacrifice; Patriotism

GEOPOLITICS AND SUSTAINABLE DEVELOPMENT IN THE AEGEAN SEA: THE IMPACT OF MARITIME DISPUTES ON ENVIRONMENTAL GOVERNANCE

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Abstract

The Aegean Sea represents a critical intersection of ecological, economic, social, and cultural dimensions. However, its sustainable development is actively threatened by the persistent geopolitical rivalry between Greece and Turkey. Recent events illustrate how environmental protection has been politicized, becoming an instrument to extend sovereign authority over undelimited maritime areas and operationalizing the "Blue Homeland" doctrine.

The present paper applies a qualitative policy analysis of current maritime governance structures, international legal frameworks, and recent geopolitical maneuvers in the Aegean region. It evaluates how unresolved territorial disputes interact with and restrict regional socio-economic development and environmental conservation initiatives.

The primary observable outcome of current regional policies is the absence of a mutually accepted legal framework for Marine Spatial Planning. This has resulted in long-unresolved disputes over the continental shelf and Exclusive Economic Zone boundaries. These unilateral actions, lacking legitimacy under international law, highlight the extreme vulnerability of current diplomatic stability.

Geopolitical friction in the Aegean is directly detrimental to sustainable development at the local, rural, and regional levels. Without a framework for marine spatial planning, the region cannot effectively advance marine conservation, the blue economy, or coastal infrastructure redevelopment. This strategic void artificially constrains the socio-economic development of islands that rely heavily on sustainable fisheries, tourism, and cultural preservation. Regional resilience is fundamentally compromised when environmental governance functions as a disguised proxy for territorial expansion.

Addressing these complex challenges requires an immediate transition from passive diplomacy to active maritime governance. By implementing robust spatial plans grounded in international law, states can establish the conditions necessary for sustainable economic, social, and cultural prosperity. A comprehensive resolution to the Aegean maritime dispute is not just a geopolitical imperative, but a fundamental prerequisite for long-term regional stability.

Key words: Aegean Sea, Sustainable development, Marine Spatial Planning, Geopolitical rivalry, Maritime dispute, Blue Homeland doctrine, Environmental governance

Session:

CITY, CULTURE AND SUSTAINABILITY

FROM FRAGMENTED MEMORY SITES TO A SUSTAINABLE URBAN HERITAGE NETWORK: THE CASE OF 1940s METROPOLITAN ATHENS

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Abstract

Urban historical memory extends beyond monuments and protected heritage sites, encompassing less visible elements of the urban fabric such as buildings, material traces, personal testimonies and shared memories associated with difficult or contested pasts. These dispersed forms of heritage often remain outside dominant cultural narratives, despite their potential to enrich understanding of a city's historical development and identity. In Metropolitan Athens, numerous sites related to the Occupation, the Resistance, the December 1944 conflict and the transition towards the Greek Civil War remain geographically dispersed, with varying levels of preservation, interpretation, accessibility and public visibility.

The paper investigates how networking such fragmented memory sites could contribute to sustainable cultural and urban development. Rather than treating memory tourism as inherently sustainable, it examines how a heritage network could activate under-recognized cultural resources, disperse cultural visitation beyond established tourist areas, support historical education, interpret existing urban heritage and encourage cooperation among local institutions and communities.

The research follows a qualitative case-study approach combining bibliographical and online research, field observation at memory sites, participation in organized historical walks and semi-structured interviews with multiple participants representing complementary fields, including public history and digital cultural heritage, modern Greek history, cultural heritage management and local government, historical research and walking-tour design, professional guiding, cultural experience design, and destination management and tourism operations. Public history initiatives, museums and thematic tourism practices were also examined to identify current forms of interpretation and potential cooperation.

The findings indicate that Metropolitan Athens possesses a significant but fragmented landscape of material and immaterial heritage. Authentic sites, traces of conflict, memorials, archival material, oral testimonies and commemorative practices provide a basis for an interconnected heritage network. However, differences in management, accessibility and interpretation limit their collective visibility.

The paper proposes a sustainable network of cultural routes focused on historical memory, based on thematic routes, historically documented interpretation, educational activities, digital tools and collaboration among cultural, municipal and tourism stakeholders. Such an approach may support the preservation and activation of difficult heritage while integrating historical memory into contemporary urban cultural life.

Keywords: urban heritage, historical memory, sustainable cultural development, public history, memory sites, Metropolitan Athens



THE DIGITAL PROMOTION OF NAFPLIO CITY CULTURE IDENTITY

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Abstract

Cultural heritage plays a significant role in shaping the identity of historic cities and supporting sustainable local development. Digital technologies offer new opportunities to communicate cultural values, improve access to heritage information, and enrich visitors' experiences. Nafplio, a historic Greek city with a distinctive architectural character and a rich cultural heritage, provides a relevant case for exploring these opportunities.

This paper examines the potential contribution of digital technologies to the promotion of Nafplio's cultural identity, with particular emphasis on cultural routes and heritage interpretation. The study adopts a literature-based case study approach, drawing on research concerning cultural heritage management, digital tourism technologies, and sustainable local development. It considers the potential applications of interactive maps, mobile applications, QR codes, and augmented reality in presenting historical monuments, architectural landmarks, and cultural attractions.

The analysis highlights the importance of connecting digital interpretation with coherent cultural routes, accessible information, and the distinctive historical character of the city. It also identifies potential challenges relating to digital accessibility, the quality of cultural content, and coordination among local stakeholders. Rather than treating technological innovation as an end in itself, the paper considers how digital tools could support more meaningful engagement with cultural heritage and encourage sustainable forms of cultural tourism.

The paper aims to provide a conceptual basis for future digital heritage initiatives in Nafplio and to offer practical considerations for local authorities, cultural organisations, and tourism stakeholders seeking to strengthen the city's cultural identity while supporting its sustainable development. Particular attention is given to practical opportunities for responsible, locally grounded implementation.

Keywords: Nafplio; Cultural Identity; Digital Technologies; Cultural Heritage; Cultural Routes; Sustainable Tourism; Local Development

SYMBOLIC URBAN LANDMARKS IN THE MUNICIPALITY OF HERAKLION, ATTICA: TRACING HISTORICAL, ARCHITECTURAL AND SPATIAL MEMORY THROUGH THE CULTURAL LAYERS OF THE PAST

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Abstract

De Certeau suggests that places are fragmented and folded histories: stolen pasts deprived of the possibility of being read, accumulated temporalities with the potential to unfold, yet remaining as narratives in waiting. They persist in an enigmatic state, since no place is free from the presence of different genii locorum, silently waiting to be 'called'.

Student projects for the graduate course 'Spatial Narratives', offered at the Department of Interior Architecture during the 2025–6 spring semester, focus on the analytical and synthetic process of developing an idea that engages with place, architectural evidence and history. Drawing on interdisciplinary references, the projects explore how material and immaterial cultural traces can be identified, interpreted and reactivated as resources for sustainable urban development. They map the cultural deposits of the Municipality of Heraklion, Attica, and 'tell a story', drawing on the particularities of the site, the built and unbuilt urban environment, including nature and contemporary human interventions, such as the FIX estate, the pedestrian bridges of Attiki Odos and the Electric Railway, a decommissioned substation building, and the Hadrian Aqueduct. They collect and reinterpret material evidence of historical events, while also activating archaeological traces, fragments of stories, memories, customs and imagined narratives embedded in the urban environment and the collective memory of its inhabitants.

The architectural proposals translate these cultural readings into spatial interventions, inventing architectural 'objects' and creating a network of landmarks that operate as symbolic observatories, condensers of collective memory and dialogical places. Rather than treating heritage as a static residue of the past, the projects seek to awaken the gaze and activate memory and imagination. They seek to bring to the surface the barely perceptible scenes of an urban poetics, demonstrating how architectural design can contribute to sustainable urban development by connecting material heritage, intangible memory and place identity.

Keywords: Municipality of Heraklion, spatial narratives, architectural interventions, urban landmarks, symbolic observatories, collective memory, cultural routes

ARCHITECTURAL HERITAGE AND HISTORICAL IDENTITY UNDER SPECIAL PROTECTION REGIMES: KASTORIA IN THE CONTEXT OF SUSTAINABLE URBAN DEVELOPMENT

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Abstract

Kastoria, a historic city in north-western Greece, possesses a distinctive architectural heritage closely associated with its historical identity, including post-Byzantine and modern mansions, historic urban ensembles and a cultural landscape shaped by Lake Orestiada. This heritage has been placed under a complex system of statutory protection, including listed-building designations, protected historic areas, planning regulations and conservation initiatives. The effectiveness of such regimes, however, depends on how their objectives are translated into interventions and outcomes on the ground.

This paper explores the relationship between the institutional protection of Kastoria's architectural heritage and its actual preservation, use and integration into contemporary urban life. It examines the protection framework through selected examples of heritage designations and planning regulations, including the historic quarters of Doltso and Apozari and the 1983 decree establishing the traditional part of Kastoria. Conservation initiatives, such as Europa Nostra's 7 Most Endangered programme, are also considered as examples of efforts to safeguard historic buildings. Particular attention is given to the relationship between statutory protection, conservation and adaptive reuse.

Preliminary findings indicate that, while the protection framework has contributed to the recognition and preservation of significant elements of Kastoria's architectural heritage, its implementation has not always ensured their continued use and integration into contemporary urban life. The paper therefore considers implications for historical identity, everyday urban life and sustainable urban development, including opportunities for cultural and low-impact tourism and heritage-based local development. By examining the relationship between institutional intentions and spatial and functional outcomes, the study contributes to the discussion on translating heritage and planning objectives into effective local implementation.

Key words: Kastoria, Architectural Heritage, Historical Identity, Heritage Protection, Adaptive Reuse, Sustainable Urban Development, Local Development

SUSTAINABILITY CLAIMS AND ALTERNATIVE DISPUTE RESOLUTION ALONG MOLDOVA'S CULTURAL ROUTES

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Abstract

Sustainable tourism requires credible information and accessible remedies when services fail to meet advertised commitments. This paper examines the legal effects of sustainability claims and the potential of alternative dispute resolution (ADR) to strengthen consumer protection and responsible business development along Moldova's cultural routes.

Following Moldova's accession to the Council of Europe's Enlarged Partial Agreement on Cultural Routes in 2023, the study considers tourism services associated with Iter Vitis, the European Route of Jewish Heritage, the European Cemeteries Route, the European Fairy Tale Route and the Historic Cafés Route. These networks provide a setting for examining how cultural affiliation, environmental practices, accessibility and community benefits are represented to visitors, while distinguishing route recognition from sustainability certification.

The research combines doctrinal and comparative legal analysis with a structured review of selected providers' promotional materials, booking conditions and complaints information. Moldovan consumer protection and contract law are examined against European Union benchmarks, including Directive (EU) 2024/825, with the Global Sustainable Tourism Council's standards providing sustainability reference points.

Particular attention is given to newly adopted Law No. 9/2026 on Mediation and the Status of Mediators, effective from September 2026, and Law No. 198/2026 on Arbitration, entering into force in March 2027. Their relevance is assessed through the distinct functions of mediation and arbitration, arbitrability, informed consent and consumer safeguards.

Keywords: cultural routes; sustainable tourism; consumer protection; sustainability claims; mediation; arbitration; Republic of Moldova.

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TRACES OF PIRATES IN MANI: A DIGITAL CULTURAL INTERPRETATION EXPERIENCE THROUGH AN INTERACTIVE GAME

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Abstract

Cultural heritage can contribute to the sustainable development of local and rural areas when connected with contemporary forms of interpretation, education and tourism. This paper presents the development of an interactive digital experience designed to interpret the cultural heritage of Mani, a region of the Peloponnese characterised by a rich historical landscape, maritime traditions, local narratives and elements of intangible cultural heritage. The project uses piracy as an initial narrative entry point, expanding it into a broader exploration of the historical and cultural identity of Mani.

The study explores how digital storytelling and game-based approaches can transform local cultural information into an engaging and participatory experience for visitors and learners. The methodology combines a review of relevant literature on cultural interpretation, gamification, digital technologies and cultural heritage with historical research and the collection and organisation of information related to local history, oral traditions, places and cultural practices. These elements were incorporated into a functional digital prototype developed using Genially. The prototype consists of an exploratory digital route including eleven thematic stops, combining narrative content, visual and audiovisual material, codes, riddles and multiple-choice questions.

The developed experience seeks to move beyond the passive transmission of historical information by placing the user in an active role as an explorer of the cultural landscape. Through exploration, interaction and narrative participation, the prototype creates a framework for engaging with both tangible and intangible aspects of Mani's cultural heritage. The project demonstrates the potential of accessible digital tools to support the interpretation and communication of local heritage and to create opportunities for educational and tourism-oriented applications. It also provides a basis for future development through WebAR technologies, enabling digital narratives and interactive elements to be connected directly with physical heritage sites.

Keywords: cultural heritage; cultural interpretation; digital storytelling; gamification; Mani; sustainable tourism; WebAR

Session:

CULTURE AND SUSTAINABLE URBAN TOURISM

FREDERIC BOISSONNAS'S PHOTOGRAPHS: PROMOTING GREEK TOURISM IN THE EARLY 20th CENTURY

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Abstract

This study explores the relationship between photography and tourism during the period 1900–1930, focusing on how visual material contributes to shaping the national image (national branding) and cultural promotion. Through the case of Frédéric Boissonnas, a pioneering early 20th-century photographer, the study examines how photography shapes historical narratives, attracts visitors, and creates an idealized image of a place.

The photographs taken in Greece by the Swiss Philhellene Fred Boissonnas between 1903 and 1930 served as a pioneering tool for the country's tourism promotion. They helped Greece attract foreign visitors, enhance its international prestige, and establish the modern travel industry, thereby indirectly generating significant economic benefits for the state economy during the interwar period.

The Greek government and Eleftherios Venizelos funded and leveraged his work to promote Greece abroad, attracting affluent travelers.

His photographs also contributed to highlighting new destinations across Epirus, Macedonia, the Peloponnese, Crete, and the islands, expanding the tourism map beyond Athens; furthermore, they bolstered investment in promoting a Greece that is both modern and connected to its ancient heritage, thereby strengthening the international community's confidence.

By documenting landscapes, heritage sites, and local traditions, photography serves as both an artistic expression and a strategic tool for tourism marketing. This paper highlights the ways in which visual storytelling fosters a connection between cultural identity and tourism growth, demonstrating the enduring power of photography in promoting destinations worldwide.

Tourism in Greece is a unique love letter to the sea and the country's rich cultural heritage. Its roots trace back to antiquity and mythology, with Odysseus' legendary journey serving as an early symbol of exploration and wanderlust. Emerging from the foam of the waves, Greece guides its visitors from one island to another, unveiling landscapes of unparalleled natural beauty and immense historical significance.

Keywords: Photography, tourism, Greece, national branding, Frédéric Boissonnas

THE IMPACT OF WAR PHOTOGRAPHY ON NEWSPAPER FRONT PAGES ON THE DEVELOPMENT AND TOURISM OF CONFLICT ZONES. THE CASES OF PALESTINE AND UKRAINE

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Abstract

War photographs published on the front pages of newspapers are among the most powerful visual means through which international audiences form an image of a place in conflict. Beyond recording events, front-page images act as framing devices that shape perceptions of danger, suffering and solidarity, and in this way they influence how a region is understood both as a potential tourist destination and as a recipient of international attention, aid and investment. The image of a place, once dominated by conflict photography, can therefore have lasting consequences for its economic development and for its position within global tourism.

The present paper investigates how war photography on newspaper covers has affected the development and tourism of conflict-affected regions, using Palestine and Ukraine as case studies. Following a theoretical review of the literature on media framing, destination image and the forms of tourism associated with conflict — such as dark tourism, war tourism and solidarity tourism — the initial goal was to examine the relationship between front-page war imagery and the way these two regions are perceived by international publics. A parallel objective was to explore the implications of this imagery for local economic development, post-war reconstruction and the movement of visitors.

The paper draws on a qualitative content analysis of front-page war photographs published in selected international newspapers, considered alongside secondary data on tourist arrivals, humanitarian funding and reconstruction in the two regions. The images were examined in terms of their visual framing, recurring motifs and dominant narratives, in order to relate the way each conflict is visually represented to the developmental and touristic dynamics observed on the ground.

The analysis indicates that front-page war photography has a dual and often contradictory effect. On the one hand, the repeated circulation of images of destruction and human suffering reinforces perceptions of insecurity that suppress conventional tourism and discourage investment. On the other hand, the same imagery mobilises international solidarity, humanitarian funding and sustained media presence, and gives rise to alternative forms of tourism — solidarity tourism in the case of Palestine and a growing interest in memorial and reconstruction-related tourism in the case of Ukraine. The paper concludes that war photography on newspaper covers is not a neutral record of conflict but an active factor shaping the developmental and touristic trajectories of the regions it depicts.

Key words: war photography, newspaper front pages, destination image, dark tourism, solidarity tourism, Palestine, Ukraine

THE ROLE OF ISO STANDARDS IN ACHIEVING SDG 12 IN THE TOURISM INDUSTRY

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Abstract
The tourism industry is a sector with major changes and growth during the last decades. After surviving recent global conflicts and health crises, it is entering and trying to adapt in a tech-heavy economy, also characterized by rising client expectations. One of the issues, it also has to deal with, is sustainability and embedding it in every one of its actions. A major contribution to this effort is the Sustainable Development Goals (SDGs) initiated by the United Nations (UN). One of these goals is SDG 12, which deals with responsible production and consumption. It is a subject that concerns all people and its achievement will have positive environmental impacts.

ISO is an organization that produces structured frameworks, helping companies to adjust many of their functions. These frameworks can be used as guidelines to improve companies' performance. They are not obligatory, but many organizations have already adopted them. ISO has realized the significance of the SDGs and has embedded SDG-related actions in every standard it issues. However, there are no specific procedures or instructions on how to improve SDG achievement with ISO standards.

In this study, we collect information about relevant ISO standards that contribute to actions promoting SDG 12. Some of these are ISO 22483, 50001, 14046, 14067 and many others. We will try to discover specific actions, metrics or indicators included in these standards, that seem to be related to the targets of SDG 12. This way, managers can evaluate and design their approach towards the achievement of SDG 12.

Key words: ISO, SDGs, Tourism industry, Responsible production, Responsible consumption.

MACHINE LEARNING APPROACHES FOR PREDICTING GENTRIFICATION: THE GAP IN TOURIST GENTRIFICATION PREDICTION

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Abstract

Machine learning approaches to predicting gentrification have advanced rapidly in recent years; however, a systematic evaluation of their collective achievements and blind spots remains limited. This review synthesizes key studies on machine learning-based gentrification detection published between 2018 and 2026, covering socioeconomic modeling, computer vision, and multi-source data fusion approaches across different urban contexts. A structured comparative analysis of twelve key studies examines the operationalization of their results, focusing on data architecture, algorithmic approach, explainability methods, and policy transferability. The review reveals a clear evolution from single-source inventory classification models toward hybrid frameworks integrating physical, behavioral, and real-time data streams. However, it identifies a consistent and critical research gap: tourist gentrification remains completely absent from existing predictive frameworks. To date, no study has incorporated the gull range of indicators of tourist gentrification, despite strong theoretical and empirical evidence linking these factors to displacement in cities under increasing tourism pressure. The implications for housing affordability and the right to the city are considerable, particularly for long-term residents in areas under sustained tourism pressure.

Addressing this gap requires the timely detection of tourist gentrification processes before displacement becomes irreversible, since by the time conventional socioeconomic indicators register change, residents may already have been priced out. Image-based data streams prove particularly valuable in this context, as they capture physical and visual markers of transformation that precede or accompany, rather than merely follow, socioeconomic change. Early warning systems should therefore integrate multi-source and image-based data streams specifically tailored to tourist gentrification, enabling more comprehensive forecasts capable of informing timely policy intervention.

This need is particular pressing in contemporary Greek cities, where the rapid expansion of tourist gentrification makes its systematic monitoring and management an imperative priority for safeguarding social cohesion and the right to the city.

Key words: gentrification, machine learning, tourism, early warning systems, remote sensing, urban displacement

MARTIM MONIZ SQUARE: TOURISTIC PLACE OR TOURISMOPHOBIA PUBLIC ENVIRONMENT, A CASE STUDY FOR THE MUNICIPALITY OF LISBON, PORTUGAL

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Abstract

Martim Moniz Square is a touristic place selected for studying open air cities, located in downtown Lisbon, a known neighbourhood reconstructed after the 1755 earthquake by order of Pombal, minister of then king Joseph I (1750-1777). This submission is part of an Institute of Spatial Planning project named "Landscape Geography: regional and urban planning research and land-use, under the scope of circular economy towards the culture of building a sustainable future for all". The research question for this research was: Is Martim Moniz Square a tourismophobic place because of its insecurity? Tourismophobia is the feeling of rejection towards a place that is insecure or dirty, an expression first used by geographer Tuan regarding cities one dislikes (topophobia). Methodology used was twofold: 1) ten interviews to immigrant shopping keepers, foreign tourists, and Lisbon residents, as primary source data collection; 2) scientific texts comprehensive examination on such issues as history, architecture and social sciences, as secondary information. Trade and services offer existent around the square were also investigated, as well as public square hygiene, public furniture, tree shade, and blue space availability. Results demonstrate that all interventions by Lisbon mayors along times had a positive effect on the square hygiene and public furniture offer, but some interviewees (20%) questioned why the water wasn´t pouring from the fountains, others the inexistence of food and drinks' kiosks formerly instated on the square (10%), so proficient until the covid 19 outbreaks. One problem remains unsolved: security that turns away several tourists, particularly related to drug trafficking (20%).

Key words: Use of public spaces, tourism, Lisbon, Portugal

TERRAIN VAGUE THROUGH THE LENS: PHOTOGRAPHIC MEDIATIONS OF URBAN VOIDS

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Abstract

The concept of *terrain vague,* introduced by architect and critic Solà Morales in 1995, refers to those empty, obsolete, and abandoned places located within the city but that remain outside its daily use and its productive circuits. A significant yet overlooked feature of the essay is that Solà Morales based his definition of the concept on photography as the preferred medium for capturing the sensory qualities of these spaces, identifying a number of photographers as its primary observers.

The present paper aims to be of use to readers interested in urban studies and visual studies, demonstrating that the *terrain vague* is not a univocal condition but one that is internally differentiated, and offering an in-depth reflection on how photographic practices and narratives constitute the concept rather than merely illustrating it.

The main method is a comparative visual analysis of the photographers Solà Morales names in his essay: John Dvies, David Plowden, Thomas Struth, Jannes Linders, Manolo Laguillo, and Olivio Barbieri. These photographic works and practices are read side by side according to positioning, scale, and temporality to distinguish the types of terrain vague each discloses.

The principal finding is that each photographer reveals a distinct type of *terrain vague*, thereby identifying a plurality of residual states and forms rather than a single one; paying attention to this plurality deepens the understanding of Solà Morales's concept, thus enriching the way these spaces are interpreted and reimagined.

Key words: terrain vague, Solà Morales, urban landscape, urban photography

Session:

SUSTAINABLE RURAL AREAS

INTEGRATING INDIGENOUS KNOWLEDGE PRACTICES FOR SUSTAINABLE CROP PRODUCTION INTENSIFICATION: A CASE STUDY OF SMALLHOLDER FARMERS IN EASTERN UGANDA

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Abstract

The need for sustainable crop production intensification is critical for meeting global food demands. In Uganda, smallholder farmers, who form the backbone of the food system, constantly rely on indigenous knowledge (IK) to manage their farms. However, Ugandan agricultural policy and extension services often marginalize these practices due to an epistemic hierarchy that privileges scientific knowledge over local knowledge systems. This study investigated how smallholder farmers in the Bukedi sub-region, eastern Uganda utilize IK practices to achieve sustainable crop production intensification (SCPI). It aims to understand the prevalence of these practices, the factors influencing their use, and their contributions to productivity and sustainability, ultimately proposing a framework for their integration. A qualitative case study design was employed. Data were collected through 30 in-depth interviews, 10 focus group discussions (80 participants), and six weeks of participant observation across five villages in the Bukedi sub-region. Data were analyzed using content analysis with abductive and retroductive reasoning to infer underlying causal mechanisms. The study identified eight core categories of IK practices, with weather forecasting, seed selection, and soil fertility management being universally practiced. Climate change and low cost were the primary drivers of IK use. Farmers reported substantial productivity gains from IK, such as a 167% increase in maize yields from cow dung application and a 50% reduction in post-harvest loss through ash storage. A key barrier was "extension bias", reflecting the institutional privileging of scientific knowledge. Indigenous knowledge practices are alive, effective, and significantly contribute to SCPI in the Bukedi sub-region. Their underutilization stems from structural and institutional biases, not farmer attitudes. The study proposes an evidence-based framework for integrating IK into policy and extension, which includes validating practices, training extension workers, and linking IK with formal climate services.

Keywords: Indigenous knowledge, sustainable intensification, smallholder farmers, Uganda, climate adaptation, epistemic hierarchy

RURAL POPULATION MOBILITY AND SETTLEMENT RESTRUCTURING IN SEVERE-COLD NORTHEAST CHINA: HISTORICAL TRAJECTORIES, REGIONAL DIFFERENTIATION, AND A TYPOLOGICAL FRAMEWORK FOR SUSTAINABLE RURAL DEVELOPMENT

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Abstract

Rural Northeast China—China's old industrial heartland and its most severely cold populated region—is undergoing a form of population decline that diverges markedly from the national pattern, yet research has documented this divergence only through aggregate statistics or isolated cases. Drawing on the Sixth and Seventh National Population Censuses, provincial statistical yearbooks and bulletins (1995–2023), the China County Statistical Yearbook, mobile signaling records, and a 2023 pre-survey of eighteen candidate counties, this paper reconstructs, at the regional scale, how rural population mobility has evolved historically and differentiated spatially, and derives a typological framework supporting comparative research on sustainable rural settlement restructuring. First, it identifies a five-stage trajectory—industrial-base-driven stability (1949–1978), institutionally lagged mobility (1978–1995), abrupt out-migration after state-owned enterprise restructuring (1995–2005), coexisting whole-family migration and seasonal "migratory-bird" return (2005–2015), and the current contest between elderly return migration and in-situ urbanization (2015–present)—showing that the Northeast shifted from lagging behind to running ahead of national decline. Second, it demonstrates that nearly identical cumulative losses (−43.2% versus −43.1% nationally) conceal a migration-dominated mechanism, a super-aged structure, and a mobility signature of high cross-provincial flow, high whole-family migration, high seasonality, and low return intention. Third, it maps the spatial differentiation of this regime across three gradients and two special zones, and condenses a three-dimensional classification—mobility stability × physical-geographic base × development level—into a five-type county typology. This typology grounds an auditable county–township–village–household sampling framework, illustrated by the selection of four core counties (Ning'an, Jiayin, Faku, Tumen) plus supplementary sites, offering a transferable instrument for comparative research and spatially differentiated rural policy in cold, depopulating regions.

Key words: rural population mobility; settlement restructuring; severe cold regions; Northeast China; regional typology; sampling framework; sustainable rural development

LAND OF COCOA - IHÉUS, CITY OF BAHIA, IN THE TIME OF JORGE AMADO AND TODAY

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Abstract

In the search for new sources of information and a better comparative approach to climate change and the subsequent social, environmental, urban and territorial challenges, as well as the new options for adapting people and economic activities linked to rural areas, the possibility arises to use novels from the early twentieth century to explore the landscapes described by reputable authors, and to observe the contemporary occupation of farms and cities in Bahia, as is the case of the capital city of cocoa in Brazil, the city of Ilhéus. The constitution of the village of Ilhéus dates back to 1535, at the beginning of Portuguese colonization. As a legitimate Bahian, Jorge Amado, who wrote the novel "S. Jorge dos Ilhéus" in 1944, is a privileged source of data on the production and export of cocoa to the most developed countries in the difficult times of the Second World War. Knowing human nature, Amado was able to bequeath us pages full of color and odor about the production of cocoa trees, about the exploitation of wage earners and even about the "*aviamento*" system in force in Bahia at that time. Traveling through the farms that produce cocoa, an activity that is more extractive than agricultural, (to this day), we can make comparative studies between the social inequalities of their time and those of the difficult days we live in, with high living costs and a new cocoa price increase, due to the scarcity of this commodity in the international market. This contribution presents an innovative and critical approach to the cocoa exporting city, Ilhéus, and its rural surroundings, using a comparative methodology already tested with the novel "Capitães da Areia", in 2025, and demonstrating that the answer to the research question is affirmative: Is cocoa a sustainable rural activity in Bahia?

Key words: Brazil, Rural, Regional and Urban Sustainable Development.

CHILDREN, FORESTS, AND SUSTAINABLE RURAL AREAS: INTERGENERATIONAL STEWARDSHIP IN RURAL UGANDA

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Abstract

Children in rural Uganda are increasingly recognized as vital, though often neglected, actors in forest conservation and in the creation of sustainable rural areas. In forest-edge communities, children participate in tree planting, conservation education, and the transmission of ecological values across households and generations, thereby shaping everyday practices that protect forests, biodiversity, and local livelihoods (ESAFF Uganda, 2026; Equity Bank & My Tree Initiative, 2026). Recent initiatives in Uganda show that when conservation is introduced through schools and community-based learning, children acquire practical environmental knowledge that they can carry into adulthood and share with their families (ESAFF Uganda, 2026; UNESCO, 2026). This matters because forest protection in rural areas is not only an ecological concern but also a livelihood issue: forests provide medicine, firewood, food, and materials, while community tree planting helps reduce pressure on protected habitats and supports local development (Independent, 2026).

This paper argues that children's engagement in forest stewardship should be understood as a core dimension of rural sustainability rather than a symbolic add-on to environmental policy. Their participation strengthens ecological literacy, reinforces intergenerational responsibility, and supports culturally grounded approaches to natural-resource governance (TrustAfrica, 2026; UNESCO, 2026). It also helps connect conservation to broader rural priorities, including resilient livelihoods, soil protection, climate adaptation, and community well-being (The Standard Digital, 2026; Tribune Online, 2026). Within the theme of sustainable rural areas, the article contends that protecting forests through child-centered approaches is both a conservation strategy and a development pathway. It calls for policies that embed children in local environmental action, school-based conservation, and community forestry in order to build resilient rural landscapes rooted in culture, equity, and long-term sustainability (UN, 2026; WITNESS Radio, 2026).

Key Words: Children, Participation, Forest conservation, Sustainable rural areas, Intergenerational stewardship.

CLIMATE VARIABILITY AND VEGETATIN RESPONSE IN PELION AND COMARCA DE KA SIDRA DURING 2001-2025: A PRELIMINARY INVESTIGATION

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Abstract

Comparative analyses of satellite-derived vegetation indices require careful assessment of both the landscape actually represented by the observations and the climatic information employed. This study investigates the relationship between climate variability and vegetation dynamics in eastern and southern Pelion, Greece, and Comarca de la Sidra, Asturias, Spain, over the period 2001–2025. The analysis integrates monthly climate data from TerraClimate V1.1 and NASA POWER/MERRA-2, NDVI and EVI indices derived from MOD13Q1.061, a fixed IGBP 2013 vegetation mask, elevation data from Copernicus GLO-90, mapped burned areas from MCD64A1.061, and a registry of documented environmental disturbances. The primary analysis is based on 122 common observation dates during May–September, applying spatial reweighting across six vegetation–elevation strata while controlling for calendar month and linear temporal trends. In Pelion, the mean elevation of valid satellite observations exceeds that of the reference vegetation by 160 m, compared with 19 m in Comarca de la Sidra. Following spatial reweighting, the estimated coefficient of three-month cumulative precipitation for NDVI in Pelion is 0.0158 per 100 mm using TerraClimate, with an approximate 95% confidence interval of [0.0061, 0.0254], and 0.0104 [−0.0015, 0.0224] using NASA POWER. The positive estimate obtained with TerraClimate remains robust to disturbance-related sensitivity checks but is not reproduced with comparable clarity when using the alternative climate dataset or EVI. Confidence intervals for the between-region difference in precipitation coefficients include zero in the primary models. The findings highlight the sensitivity of inferred climate–vegetation relationships to spatial coverage, seasonality, vegetation index selection, and climatic data source. The results represent conditional statistical associations and do not establish causal effects or support a ranking of ecological resilience between the two regions.

Keywords: NDVI, EVI, TerraClimate, MERRA-2, spatial representativeness, post-stratification, environmental disturbances, Pelion, Asturias.

Session:

RURAL AREAS AND SUSTAINABLE ENVIRONMENT

CIRCULAR BIOECONOMY SOLUTIONS FOR RURAL RESILIENCE: A BIOGAS CASE STUDY ON AN ESTONIAN ISLAND

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Abstract

A high quality of rural life is characterised by an attractive living and business environment that offers diverse, well-paid employment and is supported by cohesive, active communities. Estonia's *Agriculture and Fisheries Development Plan until 2030* aims for rural areas to be valued, developed, and prosperous, providing opportunities for both large and small enterprises that contribute to the rural economy.

Compared with many EU Member States, Estonia is relatively well endowed with bioresources, and climate projections suggest that production conditions in the region may remain favorable, although weather patterns are likely to become more extreme and unpredictable. Sustainable use of local resources can strengthen resilience amid current global polycrisis conditions. However, the economic use of these resources still generates limited added value, with a significant share of exports consisting of unprocessed or minimally processed bioproducts. Through research and development activities and effective knowledge transfer, industrial biotechnology solutions need to be developed and implemented. However, their implementation is often hindered by barriers such as NIMBY attitudes and environmental constraints.

This case study investigates the successful implementation of a circular bioeconomy solution centred on a biogas production unit on an island. An approach was developed to integrate the social, environmental, and economic aspects of the case, with data collected through semi-structured interviews in spring 2026. As a result, a comprehensive overview of the key enablers, main constraints, and ways to overcome challenges was obtained. The main success factors identified include intersectoral cooperation, engagement with local stakeholders, effective collaboration with local authorities, consideration of environmental limitations, establishment of a vertical cluster, and ensuring benefits for all members of the value chain. These factors can facilitate the wider implementation of circular bioeconomy solutions in rural areas.

Keywords: circular bioeconomy, biogas, rural development, valorisation of by-products, social aspects of bioeconomy

DIGITAL FINANCIAL INCLUSION AND THE GENDERED ADOPTION OF PAY-AS-YOU-GO SOLAR ENERGY IN RURAL UGANDA

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Abstract

Energy poverty remains one of the most persistent constraints on household welfare in rural Uganda, where grid extension is slow and costly. Pay-as-you-go (PAYGo) solar has emerged as a market-based response, but it is not simply an energy product. It is a credit product delivered through mobile money, which means that a household's ability to acquire solar energy now depends on its position within the digital financial system. This paper examines whether digital financial inclusion predicts household adoption of PAYGo solar in rural Uganda, and whether the gender of the household head conditions that relationship. The question matters because women in rural households frequently bear the heaviest burden of energy poverty while holding weaker mobile money ownership, transaction histories and asset control, which are the very attributes that PAYGo providers use to determine who qualifies.

The study is positioned within critical realism and draws on Diffusion of Innovations theory and Transaction Cost Economics. It uses secondary household data from the Uganda National Panel Survey, part of the LSMS-ISA program. Digital financial inclusion is specified as a second-order formative construct combining access, usage and quality dimensions. The model is estimated using partial least squares structural equation modelling, with an instrumental variable strategy to address the endogeneity of financial inclusion.

The analysis is currently in progress. The paper is expected to show that digital financial inclusion is a significant predictor of PAYGo solar adoption, and that this effect is weaker for female-headed households. For researchers and policymakers, the contribution is a clearer account of how digital credit infrastructure quietly determines who gains energy access and who is left out.

Key words: digital financial inclusion, PAYGo solar, energy access, gender, household welfare, PLS-SEM, rural Uganda

THE REGENERATIVE RURAL RESILIENCE FRAMEWORK (RRRF): OPERATIONALISING CLIMATE ADAPTATION AND SYSTEMIC TRANSFORMATION IN RURAL AREAS

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Abstract

European rural territories face compounding climate risks, demographic decline, and severe infrastructure gaps that conventional climate adaptation models fail to adequately address. Developed within the Horizon Europe NURISH project, this paper presents the Regenerative Rural Resilience Framework (RRRF), establishing an innovative paradigm of Regenerative Resilient Ruralism. The Greek Island of Skiathos, one of the project's Resilience Hubs, is analysed as a real-world case where the framework is applied through the implementation of NbS, co-creation with communities and local governments, capacity building and action planning.

Moving beyond risk reduction, the RRRF provides an operational methodology connecting climate risk assessment, Nature-based Solutions (NbS), resource circularity, inclusive governance, and nature-based economies. Co-designed with eight European research institutions, the framework bridges academic theory with practical governance via a two-level architecture: a science-oriented Conceptual Lens, and practical Action Guidelines structured across four iterative phases (Strategic Grounding, Transformative Capacity, Collective Action, and Reflection). The RRRF highlights that effective rural transformation requires integrating three interconnected dimensions: expanded communities (incorporating translocal networks, intergenerational learning, and more-than-human ecological agency), the infrastructure nexus (water, energy, and biomass circularity), and nature-positive, redistributive local economies.

Empirical insights from the application of the RRRF in Skiathos demonstrate how implementing NbS for water management and wildfire prevention, combined with participatory co-creation, enables rural communities to shift from passive disaster coping to active value multiplication across ecological, social, governance, and economic spheres. Using interactive technologies (XR/AR), Skiathos co-created a Regenerative Rural Resilience Action Plan, equipping local authorities, spatial planners, and researchers with actionable guidance to sustain

the socio-economic benefits of NbS. The case illustrates how bridging climate resilience with practical decision-making empowers rural communities to withstand disruptions, restore living ecosystems, and drive long-term regenerative transitions.

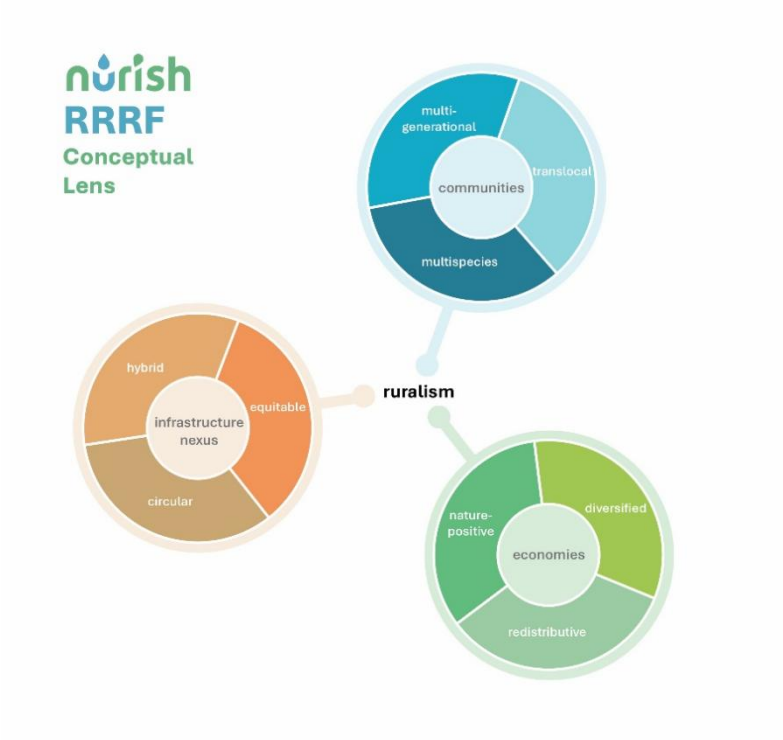

Figure 1. The Regenerative Rural Resilience Framework at the "Conceptual lens" level.

Key words: Regenerative resilience, Rural development, Nature-based solutions, Climate adaptation, Circular economy, Community empowerment

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AGROPHOTOVOLTAICS IN POLAND: TAX LAW AND JUDICIAL INTERPRETATION AS BARRIERS TO SUSTAINABLE ENERGY INNOVATION

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Abstract

Agrophotovoltaics combines solar electricity generation with continued agricultural production on the same land, offering opportunities to reconcile decarbonisation with food production and the sustainable use of rural space. Its development, however, depends not only on technological feasibility but also on whether legal frameworks accommodate this dual land use. This paper examines how Polish land taxation and judicial interpretation may hinder agrophotovoltaic development, drawing lessons for geographers, spatial planners and researchers concerned with the energy transition.

The study analyses Polish tax legislation and administrative court decisions, supported by illustrative comparisons of tax burdens and reference to foreign regulatory approaches. It focuses on the boundary between agricultural land taxation and the substantially higher property taxation applicable to land occupied for business activities. Particular attention is given to how courts classify land beneath photovoltaic panels and the spaces between them.

The analysis identifies a risk that approaches developed for conventional solar farms will be extended to agrophotovoltaic installations without adequately recognising their agricultural functions and spatial characteristics. Because agrophotovoltaic systems may require more land for a given electricity output, taxation of the entire installation area at business rates can disproportionately increase their costs. The paper argues that spaces deliberately retained for agricultural production warrant separate assessment from spaces required for the technical operation of conventional solar farms. However, environmentally favourable interpretation remains constrained by statutory wording and judicial concerns about tax avoidance.

The contribution demonstrates how tax classifications can shape the viability of multifunctional rural landscapes and sustainable energy innovation. It concludes that explicit legal recognition of agrophotovoltaics, combined with clear criteria for appropriate tax treatment, would provide greater certainty than reliance on judicial interpretation alone.

Keywords: agrophotovoltaics; land taxation; judicial interpretation; dual land use; energy transition; rural sustainability; Poland

DIGITAL SURVEILLANCE OF WILDLIFE: EXPLORING THE TECHNOLOGICAL MEDIATION OF EMERGING TECHNOLOGIES IN GOVERNING GREY WOLVES AND RED DEER

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Abstract

Digital surveillance technologies are increasingly mediating human-nonhuman relations and transforming environmental governance practices across diverse ecosystems. Emerging technologies, including GPS telemetry, automated camera trap networks, and digital tracking platforms, reconfigure how wildlife is monitored, understood, and managed at sensitive peri-urban interfaces.

This paper explores the technological mediation of wildlife surveillance in the spatial governance of grey wolves (*Canis lupus*) and red deer (*Cervus elaphus*). Focusing on Parnitha National Park and its surrounding areas, the study examines the recent recolonisation of four wolf packs, comprising approximately 50 wolves, and the concurrent collapse of the local red deer population. This ecological dynamic has generated significant concern among local communities, NGOs, and state authorities. Grounded in the conceptual framework of digital ecologies, the research investigates how volunteer-led camera trapping and GPS collaring initiatives shape human-wildlife encounters and management strategies for a re-emerging apex predator and an emblematic herbivore. Methodologically, the study will rely on more than 20 semi-structured interviews with wolf-counting volunteers, field scientists, and NGO personnel to analyze how digital tools mediate participatory conservation efforts.

The expected findings will illuminate how digital monitoring tools transform volunteer engagement by turning field observations into standardized data points that inform public perceptions and policy decisions. Furthermore, the paper aims to demonstrate how surveillance technologies filter human-animal encounters through algorithmic lenses, potentially creating digital enclosures and redistributing environmental governance power among technical experts, community volunteers, and state institutions.

Key words: Digital ecologies, Wildlife surveillance, Technological mediation, Grey wolves, Red deer, political ecology

THE CONTRIBUTION OF SMART AGRICULTURE AND SMALLHOLDERS TO SUSTAINABLE LOCAL DEVELOPMENT IN THE CONTEXT OF CLIMATE CHANGE: THE CASE OF THE REGIONS OF PELOPONNESE, WESTERN MACEDONIA AND CENTRAL GREECE

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Abstract

The transition towards a more sustainable model of agricultural production, constitutes a central challenge for the primary sector in Greece, particularly under the pressures of climate change. This study explores the role of smart agriculture and innovative technologies—such as the Internet of Things (IoT), automation, and artificial intelligence—in supporting smallholders. It examines the potential of these technologies to increase productivity, reduce environmental impact, and enhance resilience against climate pressures. At the same time, it analyzes the contribution of smart agriculture to sustainable local development through the strengthening of rural community economies and the support of traditional, high value-added products.

In the context of the above, a survey was conducted in the 2nd semester of 2025 in key rural regions. 1673 questionnaires were collected and their statistical processing gave very interesting results. The findings highlight that, despite barriers related to cost, training, and infrastructure, smallholders recognize the importance of technological innovation both for the sustainability of their farms and for the preservation of social cohesion at the local level.

Keywords - smart agriculture, small-scale farmers, sustainable development, climate change, local development, Western Macedonia, traditional products, Internet of Things (IoT), artificial intelligence

Session:

TOURISM AND SUSTAINABLE DEVELOPMENT

GREEK TOURISM AFTER PEAK OIL: RESOURSE CONSTRAINTS, TRANSPORT, VULNERABILITY AND IMPLICATIONS FOR A SUSTAINABLE FUTURE

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Abstract

Greek tourism has grown within a petroleum-dependent transportation infrastructure, especially where road travel, international aviation, and sea transportation are concerned. Greece reported €23.6 billion in travel revenue and 43.3 million inbound visitors in 2025, demonstrating the economic importance of this transportation-dependent system and raising questions about its long-term sustainability. This study explores the potential effects of Peak Oil on Greek tourism, focusing on how petroleum-system stress may affect demand, accessibility, costs, destination choice, and regional economic activity rather than whether oil scarcity will merely "decrease tourism."

Peak Oil is defined as a structural state in which petroleum prices rise, supply becomes less reliable, or the energy transition gradually limits petroleum-based mobility. Three scenarios are distinguished: (1) a prolonged oil-price shock while oil is still physically accessible; (2) a limited-supply scenario with disruptions and decreased transportation capacity; and (3) a structural transition scenario that accelerates the shift away from petroleum. This distinction matters because recent European evidence indicates a negative but inconsistent association between oil prices and visitor arrivals, while historical Greek tourism episodes show that oil prices alone do not dictate tourism outcomes.

The methodology combines a 2015–2025 Greek tourism, energy, and transport dataset with a review of the literature on Peak Oil and tourism. It examines past oil-price episodes and the interrelated functions of road, coastal/ferry, and air transportation before conducting a scenario analysis of potential tourism impacts.

With implications for tourism volume, expenditure, source-market composition, island accessibility, and regional development, the article contends that Peak Oil may be as much a critical danger to Greek tourism as it can be a catalyst for restructuring, and an opportunity for a more sustainable and more resilient tourism model.

Keywords: Peak Oil; Greek tourism; sustainable development; transport vulnerability; island accessibility; scenario analysis

TOWARDS ZERO-WASTE TOURISM: ECONOMIC AND BEHAVIOURAL DIMENSIONS OF SUSTAINABLE HOSPITALITY OPERATIONS

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Abstract

Tourism and hospitality activities generate considerable amounts of waste, placing pressure on natural resources and local waste management systems. At the same time, tourism enterprises adopt more sustainable practices based on several factors, including operational costs, available infrastructure, consumer expectations and employees' knowledge and skills. Understanding these factors is important for developing practical approaches to waste prevention and resource efficiency in the sector.

This paper presents the Tourism-Zero project, an Erasmus+ initiative involving universities and tourism stakeholders from Thailand, China, Lao PDR and Europe. The project focuses on improving knowledge and skills related to zero-waste management in tourism and hospitality, with particular attention to the needs of the participating Asian countries.

The project examines existing waste management practices, knowledge gaps and training needs through national reviews, questionnaires, stakeholder interviews and observations in tourism establishments. The findings inform the development of educational material addressing responsible consumption, waste prevention, zero-waste tourism operations, municipal waste management and environmental impact assessment. The material is intended for university students, academic staff and professionals working in the tourism and hospitality sector.

The paper discusses the project from economic and behavioral perspectives, considering how resource efficiency, operational requirements and consumer expectations relate to adopting zero-waste practices. It pays particular attention to the role of education and professional training in helping tourism enterprises incorporate environmental considerations into their everyday operations.

By bringing together universities and tourism stakeholders, Tourism-Zero offers an opportunity to examine how education and industry cooperation can support more sustainable waste management practices in the hospitality sector.

Key words: Sustainable tourism, environmental economics, consumer behaviour, zero-waste management, responsible consumption, hospitality sector

Acknowledgments

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HOSPITALITY AND FOOD WASTE MANAGEMENT IN THE HOTEL INDUSTRY

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Abstract

Environmentally friendly practices in hotels are becoming an essential subject and are expected to become a necessity. In the future, all hotels - not only the "green" ones - will be required to apply new strategies to reduce food waste, one of the most serious environmental challenges in hotels. Using a critical review of secondary data, this study examines hospitality as a practice that is shaped by expanding environmental responsibilities.

Moreover, food waste is the lost edible food, and its volume is higher in hotels. The findings highlight the need for combined approaches to reduce this problem. Key strategies include environmental education, training, certifications, and the adoption of smart technologies. Additionally, traditional practices such as composting are still relevant to the concept of the circular economy. Ultimately, this study argues that the adoption of sustainable hospitality practices could increase the environmental performance while at the same time strengthening hotels' competitive advantage.

Keywords: hotel management, hospitality, food waste, artificial intelligence, green practices

TOURISM AND LOCAL VALUE CREATION IN ERMIONIDA: A SPATIAL APPROACH TO SUSTAINABLE DEVELOPMENT AND LOCAL RESILIENCE

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Abstract

The primary aim of this paper is to investigate how tourism development can be transformed into a mechanism for generating local economic, social, and environmental value in Ermionida, taking into account the spatial differentiation of human capital, natural and productive resources, infrastructure, and existing economic activities, as well as the distinct potential and constraints of each specific area.
The central research question is: "How can tourism be developed in such a way that the value generated remains and multiplies locally, improving the quality of life for permanent residents and strengthening the region's natural, social, and economic capital?"
It is proposed that the Ermionida region be approached through spatial differentiation rather than as a single, uniform tourism destination.
For each spatial unit, the following will be examined:
Human capital: age structure, education, professions, employment
Economic capital: businesses, tourism, agriculture, fisheries, trade, services
Natural capital: water, coastline, forests, Natura areas, agricultural land, marine resources
Cultural capital: monuments, archaeological sites, traditions, local gastronomy
Infrastructure: water supply, sewage systems, road network, energy, digital infrastructure
Tourism assetsaccommodation, bed capacity, beaches, marinas, activities
Social capital: associations, organizations, volunteering, local networks
Environmental pressures: water, waste, energy, coastal pressure, wildfires
Value creation potential: local products, new services, thematic tourism, culture, nature
This will yield not merely a "tourism pressure" index, but a spatial map of development potential and opportunities for value creation.
A mixed-methods approach with a strong quantitative core is proposed.
A. Spatial analysis
B. Demographic and human capital
C. Natural and productive capital
D. Tourism mobility
E. Environmental dimension
This paper can provide a spatial decision-making tool.

Key words: Ermionida - Seasonal Tourism Mobility - Environmental Resilience - A Spatial Approach to Sustainable Local Development

SUSTAINABLE TOURISM DEVELOPMENT IN PATMOS, GREECE: COASTAL PROTECTION AND DESTINATION MANAGEMENT

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Abstract

Patmos is a destination of significant cultural, religious, and environmental value, where tourism development is closely interconnected with the protection of natural and cultural heritage. Sustainable tourism development on the island requires an integrated approach that goes beyond increasing visitor numbers and considers carrying capacity, environmental pressures, resource consumption, waste and wastewater management, coastal protection, and the quality of life of residents and visitors. In this context, effective management of coastal zones, compliance with the regulatory framework, and the prevention of unauthorized development are essential for maintaining the environmental and cultural character of Patmos. At the same time, diversifying the tourism product through cultural and religious tourism, gastronomy, nature-based experiences, and other low-impact activities may contribute to extending the tourism season and reducing pressure on fragile coastal ecosystems.

Against this background, the study investigates how collaborative governance and value co-creation can contribute to the sustainable and resilient development of Patmos as a tourism destination. Adopting a hospitality ecosystem perspective, it examines the interactions among visitors, residents, tourism businesses, local producers, intermediaries, public authorities, and Destination Management and Marketing Organizations. Particular attention is given to collaborative processes of co-creation and co-governance, cooperation in destination strategy, marketing, and sustainable supply chains. A mixed-methods research design is proposed, combining structured questionnaires with semi-structured interviews and focus groups.

The study will explore how participatory and collaborative governance can strengthen collective value creation, destination resilience, and long-term sustainability. It will examine how stakeholder cooperation can support the protection of coastal and cultural resources, enhance local economic value, strengthen destination identity, and improve the overall visitor experience. Particular emphasis will be placed on establishing effective monitoring mechanisms, assessing the carrying capacity of coastal areas, and fostering collaboration with local producers and tourism businesses. Overall, the research aims to contribute to an integrated destination-ecosystem framework that connects environmental management, collaborative governance, value co-creation, destination management, and sustainable tourism development. The findings are expected to provide useful insights for local authorities, tourism enterprises, and community stakeholders seeking to develop a more participatory, cohesive, and resilient tourism strategy for Patmos.

Keywords: Patmos, sustainable tourism, collaborative governance, value co-creation, destination management, coastal management

Session:

SUSTAINABLE BUILDINGS AND INFRASTRACTURES

RAILWAY ACCESSIBILITY, REGIONAL COMPETITIVENESS AND SUSTAINABLE URBAN DEVELOPMENT

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Abstract

In the era of rapid urban centralization, the integration of transport infrastructure and economic policy is crucial for maintaining regional vitality and environmental balance. This study explores the complex interplay between railway accessibility, regional competitiveness, and sustainable urban development, focusing empirically on the Budapest Metropolitan Area. By employing spatial economic analysis and commuter gravity models, the research evaluates how the connectivity of the suburban rail network shapes the economic performance, investment attractiveness, and environmental footprint of the municipalities surrounding the Hungarian capital.

The findings indicate that high-quality railway accessibility acts as a primary catalyst for regional competitiveness, drawing knowledge-intensive businesses and skilled labor to well-connected suburban nodes. Moreover, this rail-driven economic growth supports sustainable urban development by promoting compact, transit-oriented development patterns and reducing daily automobile-related carbon emissions. Conversely, the study highlights that areas with poor rail connectivity suffer from economic stagnation and high car dependency, widening the socioeconomic gap within the agglomeration.

The paper concludes that boosting the Budapest region's global competitiveness relies on transforming peripheral rail lines into high-frequency transit corridors and offers strategic policy guidance to align national transport investments with local sustainable development goals.

Key words: Railway accessibility, Regional competitiveness, Sustainable urban development, Transit-oriented development

CONSTRUCTION OF MEGA INFRASTRUCTURE PROJECTS AND SUSTAINABLE DEVELOPMENT. THE CASE OF THE ATHENS RIVIERA IN ELLINIKO (GREECE)

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Abstract

Urban regeneration megaprojects are commonly assessed through investment volumes, employment creation and physical transformation. Yet their contribution to sustainable development also depends on whether economic value is translated into improved quality of life, affordable housing, environmental benefits and equitable access to new opportunities. This paper examines these relationships through the Ellinikon megaproject, developed by Lamda Development on the site of the former Athens International Airport and the coastal zone of Agios Kosmas on the Athens Riviera. The project combines residential, commercial, tourism and recreational uses with major public-space and infrastructure interventions, including the Metropolitan Park and the Riviera Tower.

Based on a survey of 208 residents and users of the wider Athens area conducted during the project's construction phase, the study finds that conventional indicators of success are broadly accepted, respondents recognise the project's capacity to attract investment, generate employment and boost tourism. Confidence in the distributive side of that value is far weaker. Only 4.3% expect economic benefits to be shared equitably, 76.4% expect them to concentrate among higher-income groups, and concern about gentrification and rising housing costs in surrounding neighbourhoods is widespread. Regression analysis shows that overall attitudes toward the project depend more on perceived quality of life and environmental conditions than on economic expectations alone, while housing-related concern specifically is tied most closely to a broader sense of social exclusion, regardless of respondents' age, income or education. Comparison with earlier, planning-stage research on the same project shows these distributive and housing concerns intensifying rather than easing as construction proceeds.

The paper argues that assessing megaprojects by investment and physical output alone risks overlooking the dimension on which their social sustainability actually depends, who ends up sharing in the value they create, and who can still afford to remain nearby.

Keywords: Ellinikon, urban megaprojects, sustainable development, equity, gentrification, Athens

UNIVERSAL DESIGN AND SUSTAINABLE URBAN DEVELOPMENT: A COMPARATIVE ANALYSIS OF FOUR CASE STUDIES IN GREECE

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Abstract

Universal Urban Design is increasingly recognized as a fundamental approach to creating inclusive, accessible, safe, and sustainable urban environments that respond to the diverse needs of all citizens. Accessibility should not be understood solely as compliance with technical standards or the provision of isolated interventions, such as ramps, elevators, or accessible parking spaces. Rather, it should be considered as an interconnected system that enables people with different physical, sensory, cognitive, and social needs to participate independently and with dignity in everyday urban life.

This paper examines the application of Universal Design and accessibility in the Greek urban environment, focusing on selected examples from different geographical and urban contexts. In particular, it explores initiatives and interventions in Komotini, Trikala, Larissa, and the Attica region, with particular emphasis on Athens' city centre. These cases illustrate different approaches to improving accessibility, including accessible pedestrian routes, public spaces, transportation infrastructure, cultural heritage sites, beaches, public buildings, digital services, and urban mobility systems.

The study adopts an interdisciplinary qualitative and comparative approach, combining a review of relevant international and Greek literature, institutional frameworks, accessibility policies, expert interviews, municipal initiatives, and documented examples of urban interventions. The analysis focuses on the relationship between the person, activity, environment, interaction, and outcome, emphasizing that accessibility is achieved not through isolated design elements but through the continuity and integration of accessible environments and services.

The findings indicate that several Greek cities have made significant progress; however, accessibility remains uneven and fragmented. The examined examples demonstrate that successful implementation requires collaboration between urban planners, architects, industrial and interaction designers, engineers, policymakers, local authorities, professionals, users, and disability organizations. The comparison identified three distinct approaches: a transitional model of urban modernization in Larissa, an integrated model of a smart and accessible city in Trikala, and a cultural model of Universal Design and urban promenade in Athens. These different approaches demonstrate that Universal Design cannot be applied through a single model, but needs to respond to the specific conditions and priorities of each urban environment. The paper argues that the transition from minimum regulatory compliance to genuine inclusion requires a shift toward human-centered, participatory, and Universal Design approaches. The study argues that the transition toward truly inclusive Greek cities requires a shift from isolated accessibility interventions and minimum regulatory compliance toward an integrated, human-centered, participatory, and Universal Design approach.

Keywords: Universal Design; Urban Design; Accessibility; Inclusive Cities; Sustainable Urban Development; Disability; Human-Centered Design; Greece; Inclusive Mobility; Public Space.

WHY IS THERMAL IMAGING NOT SYSTEMATICALLY APPLIED IN BUILDING DIAGNOSTICS?

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Abstract

Thermal imaging (TI) is a non-invasive method for detecting heat loss, air leakage and insulation defects in buildings. As buildings are account for a large share of energy demand and carbon emissions, improving the energy performance of the existing stock is central to decarbonisation. Reliable diagnosis of fabric defects is important in this context. Using TI in building diagnostics is therefore valuable. But only when the method is applied in a consistent and repeatable way and evidence show that the current practise is not.

This study examines why TI is not systematically applied in building diagnostics. Its aim is to identify and organise the barriers that prevent repeatable thermographic inspection. So that the requirements for a structured approach become clear. The aim is to understand what holds the method back and what a dependable procedure would need to address.

The study synthesises two streams of evidence from the authors' prior work. The first is a systematic review of the international literature on TI in building diagnostics (Abaji et al., 2025). The second is a survey of practitioners on their current use of the method (Abaji et al., 2026). The barriers are examined across the stages of a thermographic survey, covering planning and environmental conditions, equipment and capture, interpretation and operator competence, and finally reporting and verification.

The analysis finds that these barriers share a single root, which is the absence of an agreed procedure for how a survey should be planned, carried out, interpreted, reported and verified. Without such a procedure, results rest on individual judgement and cannot be compared or trusted across different surveys.

Key words: thermal imaging, thermography, TI, building diagnostics, repeatability, energy efficiency, retrofit

FROM MICROSPATIAL DATA TO ENVIRONMENTAL DESIGN. ROOFTOPS AS CLIMATE INFRASTRUCTURE.

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Abstract

The scale of urban rooftop surfaces in dense Mediterranean cities can constitue a resource for climate adaptation. Urban heat islands and pluvial flooding represent compounded climate risks in Athens, where approximately 85% of building stock comprises flat roofs. The transformation of urban rooftops into blue-green systems can offer benefits for stormwater management, building energy performance and urban biodiversity. However, strategic deployment requires knowledge of building stock characteristics that conventional data sources cannot provide.

First, the paper will outline a brief historical and contextual analysis of rooftop usage and interventions. It will then present the framework of the Blue-Green Tops project, a citizen science initiative operating under the ScienceUs EU-funded programme. The project addresses this data gap: the absence of standardised microspatial information on building attributes -roof structure, age, materiality, exposure and current usage. The integration of such quantitative and qualitative characteristics that cannot be derived from satellite imagery or cadastral records can identify the presence of domestic usage, obsolete infrastructure or social practices that condition the feasibility for potential rooftop interventions.

Through a neighbourhood-scale case study in Athens, a multi-criteria assessment will identify the most suitable and available rooftops, integrating morphological, structural, and socio-environmental criteria. A detailed rooftop analysis will inform a design proposal and architectural intervention for a selected building, illustrating how such an approach can contribute to design decisions and thus support strategic urban climate adaptation.

The analysis will argue that citizen science can evolve from a data collection instrument into a mechanism for establishing planning frameworks. Blue-Green Tops thus offers a replicable model for Mediterranean cities facing comparable constraints of rooftop typology, density, heat stress and fragmented urban governance.

Keywords: rooftops, blue-green infrastructure, urban climate adaptation, urban design, citizen science

BEYOND THE PERCENTAGE: A CRITICAL ASSESSMENT OF WATER LOSS INDICATORS IN FIFTEEN GREEK WATER UTILITIES AND ITS IMPLICATIONS FOR SMALL, MOUNTAINOUS AND ISLAND SYSTEMS

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Abstract

Reducing water losses is a central sustainability condition for Greek cities and regions, since it links resource adequacy, energy consumption and the financial resilience of water utilities. In practice, however, performance is assessed almost exclusively through the percentage of non-revenue water (NRW), an indicator sensitive to system size and structure rather than to the actual condition of the network. This paper draws on an original, harmonised database compiled from the Managerial Capacity dossiers of fifteen Greek water utilities - small islands, mountainous inland municipalities and medium-sized mainland utilities - for the years 2023-2025, using standardised IWA water balances and WB-EasyCalc computations. Four families of indicators are compared: NRW (%), real losses per service connection per day, the Infrastructure Leakage Index (ILI) and the energy intensity of water supply. NRW ranges from

26.7% to 71.1%, with island utilities averaging higher (49.2%) than mainland ones (43.3%). Critically, NRW and ILI produce almost inverse rankings: a utility reporting 38.9% NRW records an ILI of 11.06 and 937 litres per connection per day, whereas a utility reporting 41.0% NRW records an ILI of 1.25 and 178 litres, a consequence of high operating pressure inflating unavoidable annual real losses. The paper therefore demonstrates that the UARL equation, calibrated on large urban networks, systematically misreads the performance of small, dispersed and island systems, with direct consequences for the allocation of funding: utilities that appear problematic on NRW grounds may already operate close to their technical limit, while others with acceptable percentages hold the largest savings potential. A multi-criteria framework for performance assessment and investment prioritisation is proposed, applicable to national regulatory planning and municipal target setting.

Keywords: non-revenue water; Infrastructure Leakage Index; IWA water balance; island water networks; utility performance benchmarking; local government; SDG 6

THE SILENT SUBSIDY OF LEAKAGE: COST RECOVERY, TARIFF POLICY AND THE HIDDEN ECONOMIC BURDEN OF WATER LOSSES IN GREEK WATER UTILITIES

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Abstract

The principle of full cost recovery for water services, established by Directive 2000/60/EC and operationalised in Greece through Law 5037/2023 and the regulatory framework of the Regulatory Authority for Waste, Energy and Water, presupposes that the cost of water losses is explicitly reflected in tariffs. This paper shows that the opposite occurs in practice: losses operate as a silent, undeclared subsidy that is shifted onto compliant consumers and onto the future maintenance of the network. Using harmonised financial and technical data from fifteen water utilities - small islands, mountainous municipalities and medium-sized mainland utilities - drawn from their Managerial Capacity dossiers, the cost of non-revenue water is estimated under two valuation methods, variable production cost and foregone revenue, and compared with each utility's operating expenditure and revenue. The results show that the cost of losses corresponds to between 18.9% and 58.0% of operating expenditure, with average tariffs of 0.93-

2.30 EUR per cubic metre and variable production costs of 0.20-0.60 EUR per cubic metre, a range driven mainly by the penetration of desalination on arid islands. The analysis is then extended by incorporating the shadow carbon price of the emissions embodied in lost water, which materially shifts the break-even threshold of leakage reduction investments. A twofold structural deficit emerges: tariffs that do not cover true cost, and investment decisions that ignore environmental cost. The effect intensifies in small and island utilities, where high energy intensity multiplies the cost of every cubic metre lost while limited administrative capacity hinders the justification of tariff adjustments. A methodology is proposed for transparently reporting loss costs in tariffs and linking them to regulatory targets.

Keywords: cost recovery; water tariff policy; non-revenue water; water services regulation; sustainable urban economy; shadow carbon price; SDG 6 and 12

Session:

URBAN RESILIENCE

COMPARATIVE ANALYSIS OF URBAN CLIMATE RESILIENCE LIVING LABS ACROSS SEVEN EUROPEAN CITIES: CHALLENGES AND PRIORITIES FOR ADAPTATION AND MITIGATION

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Abstract

Climate change is intensifying risks in urban areas, from extreme heat and flooding to wildfire and water scarcity, demanding place-based approaches to resilience planning that engage vulnerable communities as key actors rather than passive beneficiaries. Living Labs (LLs) have emerged as a valuable methodology for co-creating adaptation and mitigation (A&M) solutions through structured stakeholder engagement. However, this research field is predominantly single-case, limiting comparative evidence on how climate challenges, priorities, and barriers vary or converge across urban contexts using a shared methodological framework.

This paper addresses that gap through a comparative analysis of seven urban LLs established under the Climate-Resilient Development Pathways in Metropolitan Regions of Europe **(**CARMINE) HORIZON EU project; Athens (urban heat and health risks), Barcelona (wildfire risk), Birmingham (extreme heat and surface water flooding), Bologna (heatwaves, food deserts, and pollution), Brasov (water scarcity and flooding), Leipzig (heatwaves), and Prague (extreme heat and socioeconomic risk). Following the System Innovation Approach (SIA) as the methodological framework, the LLs were designed to enable systemic change through a highly participatory process in which quadruple-helix stakeholders actively engage

in workshops and co-creation sessions to jointly identify an interconnected set of innovations and A&M solutions capable of driving sustainability. The aim of this process is to couple participatory engagement with data (e.g. climate physical risk data, socioeconomic vulnerability data), bringing the stakeholders directly into transformation pathway design, and finally validating each vision before finalization, to ensure outcomes that are both scientifically robust and socially owned.

This process was operationalized through three sequential workshops per city. Workshop 1 mapped the climate change challenge system and prioritized essential ecosystem services and Workshop 2 developed sector-based climate goals and future visions. Building on these outputs, Workshop 3, which constitutes the focus of this paper, applied a back-casting approach, enabling stakeholders to identify the key milestones required to achieve each LL's policy goals and long-term vision and to define the A&M solutions supporting their implementation.

Finally, results were analyzed using a comparative framework organized around challenge typologies.

Key words: Adaptation, Mitigation, Urban resilience, SIA, Living Labs, Stakeholder engagement

TRANSFORMING INFORMAL SETTLEMENTS INTO INCLUSIVE AND RESILIENT URBAN COMMUNITIES: A LIVELIHOOD-CENTRED SUSTAINABLE TOWNSHIP FRAMEWORK FOR THE GLOBAL SOUTH

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Abstract

Rapid urbanisation in the Global South has intensified housing shortages and the growth of informal settlements, where low-income households may face inadequate housing, water and sanitation, weak infrastructure, limited social services, environmental hazards and constrained livelihood opportunities. Conventional housing-led interventions may improve physical shelter without adequately addressing employment, accessibility, social infrastructure, environmental resilience and long-term economic inclusion.

This paper proposes an Integrated Livelihood-Centred Sustainable Township (ILP-ST) framework for transforming vulnerable informal settlements into inclusive, resilient and economically productive urban communities. The framework adopts an evidence-based sequence: assessment of physical, environmental, infrastructure and livelihood conditions; in-situ upgrading where safe and feasible; selective transformation where partial intervention is appropriate; and planned relocation only where fundamental risks or service constraints cannot be satisfactorily addressed.

The proposed model integrates affordable housing with local employment, skills development, education, healthcare, mobility, green infrastructure, circular water-energy-waste systems and accountable community governance. A public-private partnership approach is proposed to combine public enabling support with private investment, revenue-generating productive and commercial assets, and appropriate social-development financing. GIS, digital data and artificial intelligence are proposed as decision-support tools for settlement assessment, risk mapping, infrastructure planning and service monitoring, while final decisions remain under accountable human institutions.

The research uses applied policy research, infrastructure-planning principles, comparative case analysis and conceptual framework development. The principal contribution is an integrated decision-and-delivery model that treats informal-settlement transformation not merely as a housing problem, but as a combined challenge of housing, livelihoods, infrastructure, human development, sustainability, finance and governance. The framework is intended for further empirical validation through pilot projects in representative Global South cities.

Keywords: Informal settlements; Affordable housing; Sustainable cities; Urban resilience; Livelihoods; Circular economy; Inclusive urban development

FROM RESILIENCE TO SUSTAINABILITY: THE ROLE OF LOCAL URBAN RESILIENCE PLANS IN ADVANCING SUSTAINABLE URBAN DEVELOPMENT

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Abstract

Cities are increasingly confronted with interconnected environmental, social, economic and institutional challenges that question the capacity of conventional urban planning approaches to deliver long-term sustainability. Climate change, extreme events, socio-economic inequalities, infrastructure vulnerabilities and rapid urban transformation have highlighted the need for approaches that not only reduce existing vulnerabilities but also strengthen the capacity of urban systems to adapt and transform. Within this context, urban resilience has emerged as a critical dimension of contemporary urban policy and planning. However, despite the growing prominence of both resilience and sustainability in urban agendas, the relationship between the two concepts remains insufficiently integrated, with resilience frequently addressed as a response to shocks rather than as a pathway towards sustainable urban transformation.

This paper explores the conceptual relationship between urban resilience and urban sustainability and examines the role of Local Urban Resilience Plans as strategic instruments for connecting the two agendas. It argues that resilience can act as a driver of urban sustainability when it moves beyond the capacity to resist and recover from disruptions and incorporates adaptive and transformative dimensions. From this perspective, resilience planning can contribute to sustainability by strengthening environmental performance, social inclusion, economic capacity, spatial and infrastructural robustness, and institutional and governance capacity.

The paper develops a conceptual framework illustrating how local resilience planning can translate the assessment of urban risks and vulnerabilities into integrated interventions and, ultimately, into long-term sustainable urban transformation. Particular emphasis is placed on the role of cross-sectoral integration, stakeholder participation, adaptive governance and

monitoring as enabling conditions for this transition. The analysis suggests that Local Urban Resilience Plans should not be regarded solely as instruments for disaster risk reduction or climate adaptation, but as strategic governance mechanisms capable of integrating resilience objectives into broader urban development and sustainability policies.

The paper concludes that the resilience–sustainability nexus provides an important conceptual and operational pathway for rethinking contemporary urban planning. When embedded within an integrated and transformative planning framework, local resilience strategies can contribute not only to cities that are better prepared for future disruptions, but also to cities that are more inclusive, adaptable, environmentally sustainable and capable of long-term transformation.

Keywords: Urban resilience; Urban sustainability; Local Urban Resilience Plans; Sustainable urban transformation; Adaptive governance; Transformative resilience; Integrated urban planning.

HOW DOES A SUSTAINABLE URBAN STRATEGY BECOME DURABLE METROPOLITAN OPERATING CAPABILITY? A SOVEREIGN LIVING METROPOLITAN SYSTEM (SLMS) APPROACH

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Abstract

Sustainable urban strategies, plans, capital programmes and indicator systems can demonstrate ambition and progress without necessarily demonstrating that a metropolitan system can continue delivering essential outcomes through operations, disruption, institutional change and long-term adaptation. This paper investigates the transition from sustainability strategy to durable metropolitan operating capability and tests whether the Sovereign Living Metropolitan System (SLMS) can provide an implementation, dependency, decision and lifecycle layer that connects -rather than replaces-established sustainability, resilience and infrastructure frameworks.

The method begins with systems, dependencies and end users, then identifies the decisions required, the evidence needed to support them and the expected outputs. It follows the lifecycle from planning and finance through construction, commissioning, operations, stress, recovery, learning, adaptation and renewal. System performance is kept separate from distributional performance so that aggregate progress does not conceal unequal access, neighbourhood vulnerability or recovery disparities. A bounded Al Khomrah/Jeddah reference case is used to illustrate a potential extreme-heat pathway linking electricity and cooling stress with water, digital services, mobility, workforce exposure, health and public decision-making. The case is a test environment; assumed or modelled outputs are not presented as observed Jeddah performance.

The contribution is a decision-oriented architecture for asking who needs to decide what, using which evidence, by when, while preserving evidence provenance and explicit dependency ownership. It also tests portability by retaining the architecture while re-baselining local geography, hazards, infrastructure, institutions and vulnerability. The paper does not claim empirical validation of SLMS; it defines the evidence, independent testing and institutional participation required to determine whether sustainable strategy can become enduring metropolitan capability.

Key words: Sustainable urban development, metropolitan capability, urban resilience, infrastructure dependencies, lifecycle governance, equity, SLMS

Special session:

AI, GEOAI, AND AR FOR LANDSCAPE PLANNING AND SUSTAINABILITY

Organized by **Dr.Dr.Fivos Papadimitriou**

GEOAI AND SPATIAL AI FOR DIGITAL CITIES

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Abstract

The digital city of the 21st century will increasingly rely on a layered technological foundation in which two converging fields play a decisive role: Geospatial Artificial Intelligence (GeoAI) and the broader domain of Spatial Artificial Intelligence (Papadimitriou 2025, Springer).

GeoAI integrates GIS & GNSS with machine learning, deep learning and computer vision to automate the analysis of satellite imagery, street-view photography, IoT sensor feeds and mobile-phone traces. Spatial AI extends this further, encompassing AI generated from spatial data, used for spatial problem-solving, and embedded in physical and digital spatial domains — from robotic ecologies and AmI to the Metaverse and urban Digital Twins. The set of these technologies (used in varying degrees, as the case may be) will shape the infrastructure of digital urban reality in the future.

GeoAI enables high-accuracy land-cover classification, real-time monitoring of urban heat islands, traffic and air quality, and predictive modelling of disaster risk. Spatial AI complements this by embedding intelligence into the urban fabric more technologies such as SLAM-based robotics, AI-enabled UAV swarms, ambient sensing, mobile interfaces and bidirectional Digital Twins that mirror city dynamics, supporting more responsive infrastructures, participatory mapping, geographical profiling etc.

Yet the same convergence intensifies systemic dangers. Pervasive geospatial surveillance turns public space into an instrumented territory of predictive modelling, whereas generative GeoAI introduces "deep fake geography", destabilizing the evidence base of urban knowledge. Besides, algorithmic spatial decisions can entrench segregation and accelerate gentrification, while opaque cloud-hosted models may lead to the concentration of urban governance in a few private platforms.

With these considerations, it is argued that the trajectory of digital cities will depend less on the technical sophistication of GeoAI and Spatial AI than on the democratic, ethical and spatial-justice frameworks within which they are deployed.

Key words: GeoAI, Spatial AI, Digital Cities, AI and Society.

LANDSCAPES COULD BE OTHERWISE: AI- GENERATED INVERSE LANDSCAPES AND THE VISUALIZATION OF CONTINGENCY. A NEOPRAGMATIST PERSPECTIVE ON SUSTAINABLE LANDSCAPE PLANNING

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Abstract

This contribution explores the concept of inverse landscapes as a means of visualizing the contingency of landscape constructions and possible landscape futures. From a neopragmatist perspective, inverse landscapes do not represent preferred or "better" futures but redescriptions that make visible how landscapes could also be perceived, evaluated, and materially configured otherwise. Generative AI expands this approach by enabling the rapid production and variation of alternative landscape representations, thereby opening up a broader field of possible interpretations and future scenarios. At the same time, such visualizations require representational responsibility: their contingency, constructed character, and revisability need to remain visible in order to avoid presenting particular alternatives as inevitable or normatively privileged. The paper concludes by discussing how this contingency-sensitive approach may contribute to a more reflexive use of AI-generated visualizations in sustainable landscape planning.

Key words: Sustainable landscape planning, Spatial AI, Digital Cities.

SHARED LAND WITH PRIVATE HOUSES: A GeoAI WORKFLOW FOR DETECTING, DATING AND MAPPING THE CLUSTERING OF INFORMALLY PARTITIONED PARCELS IN CHALKIDIKI, GREECE

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Abstract

Land parcels constituting jointly held property are routinely partitioned in practice, contrary to Greek legislative provisions. Each co-owner often occupies a discrete portion of land and builds his own house, often without a permit, while the cadastre records a single common property with no registered vertical or horizontal division. This is a prominent phenomenon on land outside established urban fabric, which until recently was only loosely planned and where residential uses are tolerated rather than officially encouraged by the state. Each new house, however, generates often seasonal demand for roads, water/sewage, and waste collection, turning farmland into de facto suburban land. Knowing the location and the magnitude of the issue is a precondition for sustainable infrastructure planning and landscape protection.

This study presents a GeoAI workflow to detect, date, and spatially analyze this type of informal land partition from open data, using four municipal units of Western Chalkidiki, Greece, as a case study. Deep-learning-derived building footprints are first co-registered to national orthophotos, removing a systematic 3.7m offset error. Self-supervised gradient boosting classifiers of building presence are trained on these corrected footprints. Every building is dated on the 2007-2009 and 2015-2016 orthophotos against the statutory cut-off date of 28-07-2011. A parcel-level classifier trained on 150 blind visual labels and validated by spatial cross-validation indicates that one in three such parcels is informally partitioned by their co-owners. This partition shows strong concentration patterns, as reflected in a Moran's I value of 0.193. In fact, 85% of cluster cases seem to form de facto unplanned settlements of more than 270 parcels and 2,200 buildings in total. Temporal inspection of orthophotos further validates that more than 90% of these cases existed before 2011. In that sense, GeoAI and open data can make unplanned spatial changes measurable and therefore more governable through official planning paths.

Key words: land administration, GeoAI, informal land subdivision, cadastre, spatial clustering, jointly held property.

FROM SENSING PEOPLE TO GeoAI-INFORMED LANDSCAPE PLANNING

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Abstract

Urban landscapes are traditionally assessed through their physical, morphological and environmental characteristics, often overlooking how people perceive and emotionally experience them. Advances in GeoAI, spatial analytics and human sensing technologies offer new opportunities to bridge this gap, integrating environmental conditions with human physiological and emotional responses to support more realistic, human-centred approaches to landscape planning and urban sustainability.

This paper explores how integrating GeoAI and human sensing can contribute to emotionally informed landscape planning, drawing on empirical evidence from the European H2020 eMOTIONAL Cities project. The research adopts a multidimensional, multiscale analytical framework, combining city-scale spatial diagnosis with naturalistic experiments to investigate how urban landscape characteristics and environmental stressors influence human experience and well-being.

At the city scale, GeoAI methods, including natural language processing, sentiment analysis, image segmentation, and machine learning, and spatial data statistics, support the characterisation of urban environments and the identification of potentially vulnerable urban hotspots. These spatial insights inform the selection of experimental locations, where participants experience different urban settings while physiological, environmental and self-reported emotional data are collected and georeferenced. The Lisbon naturalistic experiments provide empirical evidence of how contrasting urban landscapes, including green spaces, historic neighborhoods, and traffic-intensive streets, and exposure to more or less extreme microclimates, crowding, noise, and air quality, are associated with different human responses.

Findings indicate that greener and heritage-rich environments are associated with more positive emotional experiences, while traffic-intensive settings and environmental stressors, particularly noise and heat, are associated with increased physiological arousal and reduced perceived comfort. By connecting GeoAI-supported urban diagnosis with empirical human-response evidence, the proposed framework advances landscape assessment beyond the physical characteristics of place, contributing to the identification of restorative and stressful urban environments and supporting healthier, more inclusive and sustainable landscape planning.

Keywords: GeoAI; Human Sensing; Emotional Landscapes; Neurourbanism; Urban Health; Landscape Planning.

THE POWER OF VIRTUAL LANDSCAPES: HOW SPACIAL DESIGN SHAPES CHILDREN'S EMOTIONAL AND BEHAVIOURAL RESPONSES

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Abstract

Children's spatial experience is no longer confined to the physical city. Digital platforms and virtual worlds increasingly constitute environments in which children explore, socialise, navigate, and experience places, raising new questions for urban studies about how physical and virtual spaces coexist. Rather than understanding virtual environments as alternatives to physical space, this study approaches them as an emerging dimension of children's spatial experience, capable of generating meaningful emotional and behavioural responses.

This paper investigates how differently designed virtual landscapes influence children's emotions, perceptions, and behaviors. Children are a particularly relevant population because virtual environments are increasingly embedded in their daily practices. Understanding how they experience these spaces is therefore important not only for designing virtual environments but also for reconsidering children's relationships with space and the contemporary and future city.

We developed purposefully differentiated virtual environments in Roblox. Their spatial configuration drew on principles such as Lynch's environmental legibility, providing a theoretical basis for manipulating and comparing spatial characteristics across the environments. A mixed-methods experimental methodology combining observation and controlled exposure was employed to investigate how children perceived, navigated, interacted with, and behaved within each virtual landscape.

Drawing on empirical evidence collected during the experiments, this paper compares children's emotional and behavioral responses across the environments and examines how these responses vary across different space typologies. The findings contribute to an understanding of virtual landscapes as meaningful environments in children's daily spatial experience and open a broader discussion about how urban research and design can address an increasingly hybrid relationship between children, physical space, and virtual environments.

Key words: Virtual Landscapes; Emotional Responses; Urban Studies; Children Studies; Roblox

COUPLING GEOAI AND AUGMENTED REALITY IN EDUCATION FOR SUSTAINABILITY: THE LENS FRAMEWORK

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Abstract

One of the disregarded but important characteristics of Education for Sustainability is that it asks learners to reason about complex, place-bound socio-ecological systems whose dynamics are largely invisible: land-cover change over decades, exposure to heat and flood risks, assessing changes in schoolyard biodiversity etc. Augmented Reality (AR) can make such dynamics visible in situ, while Geospatial Artificial Intelligence (GeoAI) can generate the content that AR displays (species identifications, land-cover classifications and scenario predictions) at the moment and place of learning. Yet in education the two have evolved separately.

This contribution proposes a conceptual framework, "LENS" (Locate, Explain, Negotiate, Steward) for coupling GeoAI with mobile AR into a learning cycle for local and regional sustainability. Learners Locate phenomena by capturing georeferenced observations that AI classifies in real time; explain them through AR overlays of satellite-derived time series and model outputs and proceed to negotiate alternative futures by placing and comparing virtual interventions in physical landscapes, assessed by transparent digital models; and, eventually, steward the outcome by contributing validated data to open observatories and proposals to municipal decision-making.

Methodologically, the framework is grounded on documented school practices in the EU countries as well as Brazil, USA and Australia. A four-layer architecture is outlined, aligning with UNESCO's ESD competencies, and mapping technical, technological, organizational and administrative procedures. These result in lengthy documentations of existing AI & AR and GeoAI & AR synergies and potential implementations. It is also shown how rendering GeoAI layers in AR-based geodesign remains undocumented in schools and this is precisely the gap that LENS aims to close.

Keywords: Augmented Reality, GeoAI, Education for Sustainability, citizen science, landscape planning, gamification

Special session:

EDUCATION AND SUSTAINABLE DEVELOPMENT

UNIVERSITY INCUBATORS AS INNOVATION INTERMEDIARIES FOR SUSTAINABLE REGIONAL DEVELOPMENT IN LATIN AMERICA: FINDINGS FROM A SYSTEMATIC LITERATURE REVIEW

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Abstract

University incubators have become increasingly relevant within entrepreneurship and innovation ecosystems, yet their contribution to sustainable regional development cannot be assumed from the provision of business support services alone. This study examines how university incubators are represented in the academic literature on Latin America and analyses the conditions under which they may contribute to innovation intermediation, capability-building and regional development.

The research adopts a systematic literature review design. The overall corpus comprises 69 articles published between 2015 and 2025 and identified in Scopus and SciELO through a selection process guided by PRISMA. This abstract reports findings from the first analytical phase, based on 34 articles subjected to software-assisted qualitative coding and analytical memoing.

The analysis identifies increasing efforts to structure incubation through management frameworks, agile methodologies, project-selection mechanisms and specialized support practices. However, the findings also reveal a recurrent tension between standardization and adaptation. The effectiveness of incubation tools depends on their adjustment to the type, stage and characteristics of each venture, while explicit adaptation to local productive, social and territorial needs remains less developed. The literature further shows that access to university knowledge, laboratories, expertise and networks is highly valued by incubated firms, although such resources are not always effectively mobilized. Incubators may also perform network-orchestration functions that go beyond conventional intermediation.

Overall, the findings suggest that university incubators can contribute more meaningfully to sustainable regional development when they effectively mobilize university resources, adapt support mechanisms, coordinate innovation networks and connect entrepreneurial development with territorial needs and long-term capability-building.

Key words: University incubators, Innovation intermediation, Regional development, Entrepreneurship, Innovation ecosystems, Latin America

REFLECTIONS ON REDISCOVERING PANDEMIC PROSPERITY: EXPLORING PRE-WESTERN-HEGEMONY SCIENCES, TECHNOLOGIES, AND INNOVATIONS AS LEGACIES OF UNDIVIDED SUSTAINABLE DEVELOPMENT

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Abstract

Ahistoricism and colonial legacy embedded in modern scientific logic preclude grasping the distal triggers of crises that sustainability aims to tackle and the intended shared prosperity it aspires to achieve. This essay investigates relations between pre-modern and modern world systems to identify epistemic and methodological insights for contemporary sustainability. A comparative analysis of pre-modern and modern science and scientific logic reveals an interesting insight: pandemic prosperity aligned with sustainability appears before the 16th century, specifically in the 13th century. The core factors that facilitated it revolved around a common world sensitive to difference while allowing the sciences, arts, and creative innovations to flourish within and across contexts without a divide between rural and urban. This was fostered by politico-economic systems that favored coexistence alongside interactions to advance sustainable improvement. This favored the production of surpluses, which, while rooted in specific contexts, traveled to benefit a large majority across urban and rural populations. This pandemic prosperity was annihilated by modern logic: it universalized into a one-world system, thereby becoming hegemonic by denying the proliferation of multiple sciences, arts, and innovations across contexts. Lessons are drawn from this essay on how the 13th-century prosperity speaks directly to the ambition of sustainability: i.e., prosperity for all becomes better when rediscovered from the 13th century on how that could have been sustained.

Key words: Sustainable Sciences, Western Predation, Social Prosperity

THE SCHOOL THRESHOLD AS AN URBAN INTERFACE

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Abstract

The school threshold gives spatial form to the relationship between education and urban life. This paper approaches it as an urban interface through which school and city enter one another's everyday practices. It asks how this reciprocal relationship can position the school as a constitutive element of the urban fabric and contribute to the character of its neighbourhood.

The argument draws on doctoral research conducted between 2020 and 2024 with ninety third-grade pupils at a private school in central Athens. The research combined observational documentary, children's narratives assembled from film stills, architectural model-making, questionnaires and image-based voting. The paper reconsiders these materials through the connections children describe and imagine between school life and the surrounding city.

Children's accounts bring the street, traffic, encounters and natural elements into their experience of school arrival. Their proposals express a desire for places to meet, play and linger, and for schoolwork to be exhibited to the neighbourhood. These findings suggest a reciprocal movement: urban life enters children's understanding of school, while their activities and creative expression seek a visible presence in the city. The threshold emerges as a setting in which this relationship can acquire spatial and social depth.

The paper extends this reading to the urban scale, considering schools as interconnected neighbourhood nodes whose thresholds participate in the continuity of everyday public life. It proposes that the design of these interfaces concerns how education becomes embedded in the city's spatial and social character. By linking children's participation to socially sustainable urban form, this perspective offers architects, educators and municipal planners a basis for considering school thresholds in neighbourhood design.

Key words: School threshold, urban interface, school and city, children's participation, urban identity, social sustainability

FROM INCLUSIVE PEDAGOGY TO IMMERSIVE LEARNING: THE VIREAL4STEM APPROACH TO GENDER EQUALITY IN STEM EDUCATION

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Abstract

Promoting gender equality in science, technology, engineering and mathematics (STEM) requires more than introducing new technologies into the classroom; it also requires inclusive pedagogical approaches and practical support for teachers. This paper presents ViReal4STEM, a European Erasmus+ cooperation project that aims to strengthen inclusive STEM education for secondary school students aged 13–18, with particular attention to girls and other underrepresented groups. The project explores how virtual reality (VR) and gender-inclusive teaching resources can work together to support students' confidence, aspirations and exploration of STEM learning and career pathways.

ViReal4STEM combines the development of an immersive VR application with a pedagogical framework designed to help teachers recognise gender bias in existing educational materials and implement more inclusive teaching practices. The application incorporates five immersive scenarios intended to encourage students to imagine positive possible futures in STEM, drawing on induced optimism theory. Its development approach includes consideration of students' beliefs and perspectives, expert review of scenario content, and planned usability and acceptance testing. In parallel, the pedagogical framework draws on the analysis of existing STEM resources, student feedback and teacher focus groups to inform inclusive principles and actionable guidance for classroom practice.

The paper presents the project's rationale, design and evaluation approach, with a focus on the relationship between immersive learning experiences and teacher capacity to foster gender-inclusive STEM education. It discusses the importance of involving students, educators and researchers in educational technology development, while aligning innovation with explicit inclusion objectives. As a project-based contribution, the paper offers a practice-oriented perspective on how VR-supported learning and teacher guidance can be brought together to advance more equitable educational opportunities. It does not assume that technology alone can eliminate gender disparities; rather, it foregrounds pedagogy, participation and teacher empowerment as essential considerations in human-centred and socially sustainable digital education.

Keywords: ViReal4STEM; gender-inclusive pedagogy; STEM education; virtual reality; teacher training; educational equity; social sustainability.

BRIDGING EARLY CHILDHOOD GREEN LITERACY AND AI-ASSISTED PEDAGOGY: THE GREEN MOVIES FRAMEWORK FOR SUSTAINABLE AND INCLUSIVE EDUCATION

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Abstract

The rapid convergence of emerging technologies and environmental imperatives requires a paradigm shift toward human-centred, ethical digital pedagogy, beginning in early childhood education. This paper examines the methodological design and empirical validation of the European Erasmus+ initiative GREEN MOVIES across five partner countries (Italy, Portugal, Serbia, Greece, and Turkey). The project operationalises the European Sustainability Competence Framework (GreenComp) alongside DigComp by integrating narrative video pedagogy, outdoor biodiversity inquiry, and ethical AI-assisted collaborative tools.

Addressing the dual challenge of early green literacy and responsible technology use, the intervention guides children aged 4–7 from school garden exploration to classroom stop-motion storytelling. Emerging AI-driven tools are deployed deliberately as facilitative, human-centred scaffolds for teachers to enable cross-linguistic collaborative scriptwriting (StoryScripting) and multi-language narrative asset development, dismantling communication barriers across transnational educator networks. Children maintain full agency as active storytellers and physical animators, preventing passive device consumption while linking biodiversity concepts with early STEAM learning.

Employing mixed-methods evaluation across seven diverse school and community case studies, the initiative assesses pedagogical efficacy through DigiComp-based teacher competency matrices and structured participant observation checklists. Findings show marked increases in teacher confidence in implementing digital green pedagogy, alongside enhanced motivation, collaborative problem-solving, and socio-emotional inclusion among vulnerable learners and young girls exploring STEAM. Readers gain transferable instructional design models, ethical AI integration guidelines, and scalable resources for embedding human-in-the-loop technologies within early urban and regional sustainability curricula aligned with the European Green Deal.

Key words: Human-Centred AI; GreenComp; Early Childhood Education; Video Pedagogy; STEAM; Biodiversity; European Policies.

REFRAMING SUSTAINABILITY THROUGH CONTEXT. A HOLISTIC APPROACH TO ENVIRONMENTAL DESIGN EDUCATION.

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Abstract
Sustainable architectural design is frequently approached through environmental performance criteria, including energy efficiency, thermal comfort and resource conservation. This paper proposes for a broader understanding of sustainability within architectural education practices, one that employs a contextual and multi-dimensional design process in which environmental conditions interact with social, spatial, programmatic and perceptual considerations. The research reflects on a semester-long, introductory environmental design studio course, taught at the School of Architecture, AUTh.

The dense urban fabric of Thessaloniki, Greece, provides the context, in which students investigated urban voids (dross) with the purpose of (re-)activating these disused parts of the urban fabric, transforming them into assets that can sustain dwelling, work and collective activities. Environmental parameters including orientation, microclimate, daylight, ventilation, material selection, water conservation and outdoor space quality were introduced by the course as design variables rather than merely as isolated technical requirements.

The paper focuses on the design iterations through which students selected, interpreted, prioritised and synthesised these heterogeneous contextual parameters under the prism of sustainability. Student projects are retrospectively examined and interpreted, in order to identify the hierarchies through which environmental, social, contextual and morphological explorations, were transformed into spatial decisions.

The analysis contemplates on an educational process that can enable environmental design to be oriented towards the continuous negotiation of environmental performance with core issues of architectural design - the contextual framework, the programmatic use, manifold social objectives, architectural morphology, adjacent conditions, thresholds, material choices, visual/olfactory/auditory conditions and aspirations, and their interrelationships.

Key words: sustainable design; architectural education; environmental design studio; urban voids; Thessaloniki

Session:

SUSTAINABLE REGIONAL DEVELOPMENT, GOVERNANCE AND COHERENCE

WESTERN ATTICA 2040 - KITHAIRON–AIGOSTHENA–PAGAI. A RESILIENT LANDSCAPE, HERITAGE AND URBAN REGENERATION MASTERPLAN FOR ALEPOCHORI, PSATHA, PORTO GERMENO, VENIZA AND MAVROLIMNI.

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Abstract

Western Attica contains an unusual convergence of coastal settlements, mountainous landscapes, archaeological sites, ancient communication corridors and environmentally vulnerable ecosystems. The settlements of Alepochori, Psatha, Porto Germeno, Veniza and Mavrolimni occupy a strategic but fragmented landscape between Megaris, the Corinthian Gulf, Mount Kithairon and western Boeotia. Historically, this territory formed part of a wider communication system connecting Megara and its western ports with Aigosthena, Kreusis and the interior of Boeotia. Archaeological and historical evidence identifies an ancient coastal and mountain connection from Pagai through Aigosthena toward Kreusis, while Xenophon's *Hellenica* 5.4.17–18 records the extreme environmental hazards encountered by the Spartan army while crossing this landscape.

The present paper proposes **Western Attica 2040 – Kithairon–Aigosthena–Pagai**, an integrated urban, transport, archaeological and ecological regeneration framework. The proposal responds simultaneously to contemporary accessibility problems, landslide susceptibility, wildfire evacuation requirements, fragmented tourism development and the urgent restoration of landscapes affected by the catastrophic 2026 wildfire season. In August 2026, the Porto Germeno–Psatha–Veniza area experienced a major wildfire event that resulted in evacuations, damage to homes and severe pressure on the regional road network.

The masterplan proposes three strategic transport corridors; archaeological investigation and interpretation of ancient Pagai; research and promotion of the Kreusis–Aigosthena ancient route; regeneration of Porto Germeno as an Aigosthena heritage gateway; ecological reconstruction of the burned landscape; fire-adaptive urban design; a regional climate and landscape observatory; and a large-scale Kithairon cultural landscape linking mythology, archaeology, geology, history and ecological restoration.

Rather than treating infrastructure, tourism, archaeology and environmental recovery as independent projects, the proposed framework interprets Western Attica as a **continuous cultural landscape**. Its central planning principle is that the ancient network of routes should become the conceptual and cultural skeleton of a resilient modern network, while Kithairon becomes its ecological backbone and the post-2026 landscape restoration becomes an opportunity for a new model of climate-adaptive settlement.

Key words: Western Attica, urban regeneration, landscape planning, climate adaptation, ecological restoration, cultural heritage, resilient mobility

SECTORAL STRUCTURE, REGIONAL INEQUALITIES AND EMPLOYMENT DYNAMICS IN GREEK NUTS II REGIONS: CV, LQ AND SHIFT-SHARE EVIDENCE, 2005-2019

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Abstract

Balanced territorial development is a stated aim of European and Greek regional policy, and the economic disruption of 2007-2009 put it under strain. Whether a region develops sustainably depends on the sectoral base it inherits, since that base decides which shocks it absorbs. This paper asks how the disruption reshaped employment across the 13 Greek NUTS II regions, and whether the distance between the metropolitan core and the rural, mountainous and island periphery has since closed. We use Eurostat employment data for 11 NACE Rev.2 sectors and compare the pre-crisis years 2005-2007 with the period 2008-2019, split into four sub-periods. Disparity is measured with the Coefficient of Variation, specialisation with Location Quotients, and the sources of employment change with static and dynamic Shift-Share Analysis, from which each region is placed in the eightfold classification of Boudeville.
The Coefficient of Variation of total employment fell to a low of 126.88 in 2013 and rose to 131.51 in 2019, above its 2008 level of 130.58. Dispersion increased in agriculture, information and communication, professional services and public administration, health and education, and fell in industry, manufacturing, construction, trade, hospitality, finance and other services. Specialisation barely moved: Western Macedonia stayed tied to energy and utilities, Attica to tertiary activities. Six regions recorded positive total shifts, the four island regions, Attica and, through local factors alone, the Peloponnese, while most mainland regions combined an unfavourable sector mix with a negative local component.

The recovery therefore left the spatial imbalance of the Greek economy intact. Island and coastal regions gained through tourism and agriculture but on a narrow base, and the mainland carried a sector mix that worked against it. The findings mark out the regions where a sustainable development strategy has to change the productive base itself.

Key words: sustainable regional development; territorial cohesion; regional inequalities; employment dynamics; shift-share analysis; sectoral specialisation; Greek NUTS II regions

DEVELOPMENT OF AN INTEGRATED MATHEMATICAL CLIMATE RISK MODEL FOR STRATEGIC ADAPTATION PLANNING: AN APPLICATION TO THE REGIONAL UNIT OF KARDITSA

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Abstract

The aim of this study is to investigate the increasing frequency and intensity of extreme climatic and hydrometeorological events. These developments highlight the growing need for quantitative tools that go beyond the assessment of climate hazards and support decision-making and the prioritization of adaptation strategies at the regional level. Despite significant progress in climate risk assessment, there remains a need for simple, transparent, and reproducible models that integrate climate hazards, exposure, socioeconomic sensitivity, and adaptive capacity. This study develops an integrated mathematical model for climate risk assessment and management, the **Karditsa Climate Risk Index (KCRI)**, designed for application in the Regional Unit of Karditsa. The area is particularly relevant due to its exposure to extreme flood events and its high dependence on the primary sector. The proposed framework is structured around four key dimensions: climate hazard, exposure, sensitivity, and adaptive capacity, which are represented through twelve individual indicators. The empirical application is based on meteorological, geospatial, demographic, socioeconomic, and infrastructure data obtained from official and scientifically documented sources, with particular reference to the recent extreme flood events that affected Thessaly. The results identify climate hazard as the dominant component of the overall risk system, while also confirming the significant contribution of agricultural and population exposure, socioeconomic sensitivity, and the resilience of critical infrastructure. In addition, alternative strategic intervention scenarios are developed to assess the potential for risk reduction through enhanced flood protection, improved infrastructure resilience, and strengthened institutional adaptive capacity. The main contribution of this study lies in linking quantitative climate risk assessment with strategic adaptation planning within a unified and transferable framework, thereby providing a practical decision-support tool for evidence-based policymaking in regions facing increasing climate pressures.

Keywords: climate risk, KCRI, adaptive capacity, flood risk, strategic planning, regional resilience, Karditsa.

LINKING SDG 14 WITH GOVERNANCE LEVELS: POLICY COHERENCE AND IMPLEMENTATION CAPACITY

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Abstract

European Union commitments under Sustainable Development Goal 14 (SDG 14) establish a common policy direction, but formal alignment alone does not reveal how implementation is assessed at EU, national and subnational levels of governance, particularly in island settings. This paper examines whether recurring contrasts emerge in expert assessments across five dimensions: policy coherence, administrative and institutional capacity, stakeholder participation, implementation barriers, and innovation and adaptability. The study uses three level-specific questionnaires focused regional and local response set. It is framed as an exploratory multi-level expert assessment: responses represent informed perceptions, not objective measurements of policy effectiveness. Given varying valid counts and differences in item wording, the analysis examines observed item-level distributions, central tendencies, agreement and dispersion within each level, and then considers whether directional patterns recur across levels. It does not seek statistical generalization. The descriptive evidence suggests a recurrent but non-uniform cross-level pattern. EU-level respondents generally report favorable views of policy coherence, consultation arrangements and innovation. At national level, strong perceived alignment with EU policy coexists with less uniform assessments of vertical coordination, resource adequacy and opportunities for regional and local actors to provide feedback. Regional and local responses are more frequently critical or neutral regarding vertical coordination, staffing and funding, monitoring and enforcement, and the substantive influence of local communities. Nevertheless, reported collaboration with academic, civil-society and citizen organizations, together with willingness to test new approaches, constitutes a relative local strength. The findings therefore point to a perceived translation gap between policy alignment and locally embedded implementation. They suggest clearer vertical coordination, targeted administrative capacity-building and meaningful stakeholder influence as priorities for more adaptive SDG 14 implementation in coastal and island regions.

Keywords: SDG 14, Multi-Level Governance, Marine Governance, Policy Coherence, Administrative Capacity, Stakeholder Participation, Island Regions

DETERMINING FAIR RESEARCH PARTICIPANT COMPENSATION: A DESIGN SCIENCE FRAMEWORK FOR SUSTAINABLE RESEARCH GOVERNANCE

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Abstract

Cities and regions rely on research for evidence of sustainable development, yet the people from whom this evidence is obtained, are often the least protected party in the exchange. In low-income contexts like Uganda, Research Ethics Committees (RECs) are expected to ensure that research participants are fairly compensated, but they lack practical, context-sensitive instruments for doing so. The result is a design-reality gap: decisions are inconsistent which creates a form of uncertainty to researchers, but also often leave research participants worse off or excluded.

This paper applies Design Science Research to develop a Compensation Governance Decision-Support Framework (CGDF) that enables national research regulators and the larger research ecosystem to calculate, justify and document a defensible compensation amount. Following Hevner's Three-Cycle View and Action Design Research, it is grounded in organisational justice theory, institutional theory and the Dickert–Grady compensation typology, and is co-designed with regulatory officials, REC members, multidisciplinary researchers and ethics administrators through three stakeholder workshops.

The CGDF comprises six sequential components which are participant profiling, burden assessment, local economic calibration, compensation category determination, ethical risk assessment and a deliberative audit trail. Its original contribution is a Time–Inconvenience–Expense (TIE) formula adapted from South African practice and anchored in Uganda's currency point system, a public service recognised reference unit where no statutory minimum wage exists.

Evaluation follows the FEDS framework through expert panel review, multidisciplinary scenario testing with inter-rater reliability, usability assessment and a field pilot. The paper offers eight meta-requirements, seven transferable design principles and three testable propositions, showing how designed governance infrastructure advances by making research institutions fairer, more accountable and more inclusive.

Key words: Research participant compensation, Research ethics committees, Compensation governance, Design Science Research, Time–Inconvenience–Expense formula, Sustainable development, Uganda

REGIONAL TECHNOLOGICAL CAPABILITIES FOR CLIMATE CHANGE ADAPTATION AND THE POTENTIAL FOR ENVIRONMENTAL RESILIENCE IN ATTICA

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Abstract

Adapting to climate change and building regional resilience is one of the greatest challenges facing modern societies. Europe is the fastest warming continent on the planet with extreme heat and droughts disproportionately affecting the southern parts of the region. Technological relatedness, the degree to which technologies share knowledge, capabilities, or inputs, strongly predicts regional innovation which can contribute to climate adaptation solutions and build environmental and socioeconomic resilience. This paper examines whether European regions develop a relative technological advantage in climate-change adaptation by building on related pre-existing technological capabilities, consistent with a regional branching perspective. We expect climate adaptation technologies to stand out in regions where the relative knowledge stock is related to these technologies.

We rely on EPO patent applications from the OECD REGPAT database, which provides 706,958 observations and five key variables covering patent applications across European regions. We use data for the 2010-23 period, splitting the sample into three non-overlapping time intervals (2010-14; 2015-19; 2020-23) at NUTS 2 level. We calculate Revealed Technological Advantage (RTA) for all 2-digit CPC technological fields to identify if region is relatively specialized in a given technology compared with the EU average. Gauging Relatedness Density (RD) for all EU NUTS2 regions, we examine how closely a region's existing technological profile is aligned with technologies related to climate change adaptation (CPC Y02A).

Our results indicate that accumulated knowledge in *related* technological fields enhances the probability of a region developing an RTA in climate adaptation technologies, controlling for size, level of economic development and human capital. Increasing RD by one standard deviation is associated with a conditional surge in the probability of gaining an RTA in technological fields pertaining to adaptation by 22 pt 24 percentage points. Our analysis highlights the need to align objectives with innovation policy. Harnessing local technological capabilities and integrating existing and potential innovative solutions to Regional Adaptation Plans is pivotal for regional resilience.

Key words: Climate Adaptation, RTA, Patents, Technological Relatedness, Regional development

Special session:

FIRE SERVICE AND SUSTAINABLE DEVELOPMENT

Organized by **Antonios Maniatis**

THE FIRE SERVICE AS A DISTINCT SECURITY CORPS AND THE DOCTRINE OF ACTIVE BATTLE

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Abstract

The Greek Fire Service has followed a resilient institutional trajectory since its establishment as a specialised civil service. Legislation recognised it first as a Corps, subsequently as a Security Corps and, since 2014, as a 'distinct Security Corps'. The breadth, coherence and autonomy of these rules indicate that Fire Service Legislation is moving towards the status of an autonomous branch of law, although it has not yet attained that status.

The analysis combines historical, doctrinal and legislative methods to examine the environmental and operational dimensions of this development. The statutory mission concerning the natural environment and the country's forest wealth supports recognition of an emerging principle of enhanced forest protection. Law No 4662/2020 added an institutional layer by defining the Fire Service as an 'operational structure'. Law No 5281/2026 established a statutory framework for binding Rules of Engagement, unified tactical command and an Incident Command System. Within this structure, 'Active Battle' may be conceptualised as an incipient 'strategic doctrine' underpinning the reform. Yet the expression appears only in the title of the Act and lacks an operative definition. Moreover, the Rules of Engagement are described in the Regulatory Impact Assessment as a 'single and binding operational doctrine', while the decision approving them is not subject to publication, raising questions of accessibility and legal certainty.

Article 9C establishes a committee comprising the Chiefs of the Hellenic Police, the Fire Corps and the Hellenic Coast Guard to prepare Joint Operational Action Plans. Although the Act regulates operational co-ordination extensively, it imposes no standing duty of regular direct communication among the three Chiefs. Such communication, intensified during periods of high fire risk or major multi-agency incidents, could strengthen strategic co-ordination, wildfire governance and the resilience of cities and regions without altering the civilian status of the Fire Service.

Key words: enhanced forest protection; Fire Corps; Fire Service Legislation; operational doctrine; Rules of Engagement; Security Corps; strategic doctrine of Active Battle

FROM RAW DATA TO SPATIAL INTELLIGENCE: AN AI-ASSISTED GIS FRAMEWORK FOR ANALYSING WILDFIRE DISTRIBUTION AND LAND-USE DYNAMICS IN THESSALY, GREECE

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Abstract

The Mediterranean region is increasingly exposed to extreme wildfire regimes driven by climate change and changing human activity patterns. Effective regional planning and disaster management require high-quality spatial intelligence; however, raw administrative fire records are often unstructured and logically inconsistent, severely limiting large-scale geographical analysis. This study presents a novel AI-assisted methodology that transforms fragmented administrative records into actionable spatial intelligence for the Region of Thessaly, Greece, covering the period 2020–2025.

An AI-assisted automated data-engineering workflow was employed to process more than 6,800 raw fire incident records. The records were rigorously cleaned, semantically standardised and accurately geocoded. To preserve spatial integrity during quality control, a Grouped Mean Imputation technique was applied to correct administrative duration errors without discarding valuable location data. The resulting high-fidelity spatial dataset, containing over 4,000 validated incidents, was subsequently analysed in a GIS environment using CORINE Land Cover classifications and detailed topographic layers.

The analysis focuses on the interplay between wildfire distribution, topography and land-use dynamics (forest, agricultural and grassland). Statistical results reveal a marked contrast in operational resource requirements: forest fires demand substantially more personnel and significantly longer suppression times—often up to eight times longer—than agricultural fires of comparable burned area. Network analysis was further applied to assess the driving distance of ignition points from local fire stations and their proximity to the regional road network. By correlating land-use classes with road accessibility, elevation zones and response distances, the study identifies critical spatial vulnerabilities in rural areas and the wildland–urban interface. Bridging advanced data processing with precise GIS network analysis provides local authorities and civil protection agencies with a robust, data-driven framework that supports sustainable regional development, proactive fuel management and optimised spatial allocation of resources.

Key words: Wildfire Management, Spatial Intelligence, Artificial Intelligence, GIS Network Analysis, Land-use dynamics, Sustainable Rural Development, Thessaly

ENERGY SECURING AND OPERATIONAL READINESS OF THE FIRE SERVICE: TOWARDS A SUSTAINABLE ENERGY MANAGEMENT MODEL

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Abstract

Energy security is an important component for sustainable development in a complex and decentralized energy system. Modern energy systems consist of geographically dispersed generation units, storage facilities, logistics and grids that are connected through networks and infrastructure, as renewable energy installations are typically located where natural resources can be harnessed most effectively. While these systems, alongside traditional fossil fuel infrastructure, offer significant benefits, they also face serious physical security risks from natural disasters, accidents, and deliberate acts of sabotage. As it becomes clear that energy mix diversification alone does not ensure energy security, protecting critical energy infrastructure is a crucial dimension of energy security policy and therefore requires coordinated action by state security and emergency services, including the Fire Service, Coast Guard, and Police. Climate change further increases these risks by intensifying natural hazards that can severely damage energy infrastructure. In this context, the Fire Service plays a central role as a state security body responsible not only for protecting life and property, but also critical energy infrastructure. The main objective of this study is to investigate the extent to which operational data from incidents can be utilized as a tool for identifying and assessing risks affecting the security of energy infrastructure in Greece. Wildfires in Greek forest is a major concern, as the Greek mountain terrain makes it difficult to control.

Key words: energy security, infrastructure, renewable energy, fire department

Special session:

SUSTAINABLE URBAN DEVELOPMENT

AN INTERNAL MATHEMATICAL MODEL FOR SUSTAINABLE DEVELOPMENT ASSESSMENT: EVIDENCE FROM KASTORIA, GREECE

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Abstract

This study provides a quantitative assessment of sustainable development in urban areas through the simultaneous consideration of environmental, infrastructural, and sociodemographic parameters. Its main objective is to develop and apply an integrated mathematical model for assessing sustainable development in the city of Kastoria, Greece. The model is based on five key components: natural environment (N), municipal solid waste management (W), water and wastewater management (H), sewerage infrastructure (S), and population sustainability (P). For the implementation of the mathematical model, available data from official and institutional sources were used, transformed into a common normalized scale, and subsequently integrated into a composite sustainability index. The application of the model produced an overall sustainability score of **69.1/100**, placing Kastoria at a moderate-to-high level of sustainability. The analysis of the individual components identified municipal solid waste management as the most significant limiting factor, whereas wastewater treatment infrastructure and available sewerage capacity contributed positively to the city's overall sustainability performance. At the same time, the ecological status of **Lake Orestiada** emerged as a critical factor for the long-term environmental sustainability of the area. The findings indicate that substantial improvements in sustainable development require coordinated interventions in waste management, water resource protection, and the maintenance of effective environmental infrastructure. The proposed model provides a simple, adaptable, and quantitative framework that can be used to monitor sustainability performance and assess alternative environmental policy options in urban areas.

Keywords: sustainable development, mathematical model, composite sustainability index, Kastoria, Lake Orestiada, municipal solid waste, water management.

FROM REFUGEE HERITAGE TO SUSTAINABLE URBAN DEVELOPMENT: MATERIAL AND INTANGIBLE CULTURAL HERITAGE IN NEA FILADEPFEIA - NEA CHALKIDONA

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Abstract

Cultural heritage constitutes an important component of the historical identity and social development of contemporary cities. In areas shaped by refugee settlement, heritage is expressed not only through surviving buildings and material artefacts, but also through memories, narratives, knowledge, skills and cultural practices transmitted across generations. The present study examines the refugee heritage of Nea Filadelfeia–Nea Chalkidona through the relationship between tangible and intangible cultural heritage and explores its potential contribution to sustainable urban development.

The analysis focuses on the historical formation of the refugee settlement, the material traces that have survived within the urban environment, the role of family objects and museum collections, and the importance of oral history and intergenerational transmission. Particular attention is given to the Museum of Asia Minor Hellenism "Filio Chaidemenou" as an institutional space for the preservation, documentation, interpretation and transmission of refugee memory. Drawing on heritage studies and the UNESCO framework for intangible cultural heritage, the study approaches heritage as a dynamic process rather than as a static collection of surviving objects (UNESCO, 2003; Smith, 2006; Harrison, 2013).

The study further introduces the concept of cultural circularity as an analytical framework for examining how existing cultural resources may enter new cycles of documentation, interpretation, education, participation and social value. Cultural circularity is distinguished from the circular economy and is used here to describe the continued social and cultural activation of heritage resources. The analysis suggests that connections between the museum, refugee houses, oral-history archives, educational institutions, digital documentation, cultural routes and community participation can provide the basis for an integrated heritage ecosystem. Such an approach places the preservation of refugee heritage within a broader framework of sustainable cultural and urban development.

Keywords: Cultural heritage; intangible cultural heritage; refugee heritage; collective memory; sustainable urban development; cultural circularity.

URBAN LAW IN GREECE IN THE CONTEXT OF THE HOUSING CRISIS: LEGISLATIVE AND JURISPRUDENTIAL APPROACHES

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Abstract

The housing crisis has emerged as a major urban challenge across the world, with its effects becoming increasingly evident in Greece. Rising housing costs, limited housing supply and the growing gap between housing prices and household incomes have intensified pressures on access to adequate and affordable housing. According to the International Monetary Fund, house prices in Greece increased by 7.8% in 2025, while rents increased by 10% during the same year. In this context, urban planning legislative framework may play an important role in addressing this issue, while the case law of the courts faces a new challenge.

This study examines the capacity of Greek urban law and case law to address the housing crisis. In particular, it examines provisions that facilitate the development of new housing, the conversion of existing buildings to residential use, and the provision of social housing. The study seeks to identify and critically assess the range of instruments provided by Greek urban law, with particular emphasis on recent legislative measures aimed at increasing the housing stock which is available for residential use.

The research adopts a systematic legal review methodology. The relevant Greek legislative framework was identified and examined through legal electronic databases and the publications of the Government Gazette. At the same time, explanatory memoranda and Regulatory Impact Analyses were reviewed through the official website of the Hellenic Parliament. In addition, relevant case law of the Council of State was studied, using the Court's search engine and specialized legal databases.

The findings reveal a substantial body of relevant urban law provisions with the potential to contribute to increasing housing availability in Greece. Nevertheless, the case law analysis indicates an absence of clear and consistent guidance regarding the interpretation and application of these instruments. The study therefore highlights a gap between the development of new regulatory responses to the housing crisis and the emergence of a coherent judicial framework for their implementation.

Key words: housing crisis, urban law, case law, social housing, systematic review.

BLOCKCHAIN-BASED MECHANISMS FOR IMPROVING THE TRANSFER OF BUILDING COEFFICIENT PROCESS: TOWARD ALGORITHMIC FAIRNESS IN GREECE'S DIGITAL LAND BANK

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Abstract

The Greek Transfer of Building Coefficient (Μεταφορά Συντελεστή Δόμησης – MSD), the national counterpart of Transfer of Development Rights, has remained largely dysfunctional for decades despite successive legislative amendments, culminating in the Digital Land Bank under Law 4759/2020. Persistent problems of unverified titles, opaque matching, and weak institutional trust have prevented effective operation.

Building on the author's prior design of a blockchain-supported Digital Land Bank for title registration and management, this paper develops a complementary design-oriented governance framework. It introduces two mechanisms: a Score Voting procedure that enables verified rights-holders to determine collectively and transparently the relative weights of the statutory matching criteria of value, time, and location; and a Quadratic Voting Decentralised Autonomous Organisation that allows eligible communities in receiving areas to prioritise Green Fund-financed compensatory urban and environmental projects. Both mechanisms are embedded in a hybrid institutional architecture that retains public authority over legal clearance, planning review, and implementation, while using blockchain and smart contracts to make authorised procedures auditable and participatory.

The framework is conditioned by Critical Success Factors analysis emphasising prior off-chain title validation, organisational capacity, and stakeholder readiness. The paper contributes a conceptual governance design rather than an empirically tested claim of automatic effects on trust or market liquidity. It addresses the core question of how the Digital Land Bank can be institutionally enhanced through transparent matching and participatory compensation to reduce the long-standing trust deficit of the MSD system.

Key words: Transfer of Building Coefficient (MSD), Digital Land Bank, algorithmic fairness, Score Voting, Quadratic Voting, Decentralised Autonomous Organisation, blockchain.

URBAN PARKS AND MENTAL WELL-BEING: THE CASE OF ANO PATISIA

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Abstract

Urban green spaces are a significant element of daily life in highly built-up areas, providing chances for relaxation, social contact and brief escape from the constraints of the urban environment. However, their importance to mental well-being depends not only on their presence in the city, but also on accessibility, safety, cleanliness and maintenance. This study aims to evaluate the association between the utilization of urban parks and the self-rated mental well-being of the residents of Ano Patisia. In particular, focus is placed on frequency and duration of visits, experience of access, perceived safety during the day and at night, and perceived quality of green areas. The study was based on a quantitative, cross-sectional field survey, using a standardised questionnaire, administered to 384 people of the area. The findings suggest that parks are an active part of many residents' daily life and that for a significant proportion of the sample, visiting them is related to better mood, greater relaxation and less perceived stress. At the same time, several issues limiting their use and potential benefits were found. These include problems with pedestrian access, lower perceived safety during evening and night hours, and a lack of upkeep, sanitation and urban amenities. The results show that the existence of a green space and its proximity to a person's place of residence are not sufficient for its frequent and equal use. Better lighting, better access routes, regular maintenance and activation of these places through community-based projects could assist urban parks to function as stable forms of infrastructure supporting mental well-being and social cohesion.

Keywords: urban parks, public space, mental well-being, urban green space, accessibility, safety, Ano Patisia

MULTIPLE IDENTITIES IN THE URBAN FABRIC: A HUMAN GEOGRAPHY STUDY ON THE MUSLIM COMMUNITIES OF XANTHI

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Abstract

This student paper was prepared within the framework of the Human and Economic Geography course at the Department of Surveying and Geoinformatics Engineering of the International Hellenic University. It examines the relationship between the Muslim minority and the urban space and broader society of Xanthi, emphasizing daily coexistence, social integration, and forms of spatial or social segregation. The primary object of the research is how different groups of residents experience and utilize the urban space, as well as the extent to which different areas of the city function as spaces of coexistence, interaction, or isolation.

The research was based on qualitative data collection methods. Seven interviews were conducted: four with residents belonging to the Muslim minority and three with Christian residents of Xanthi. Concurrently, field observation was carried out through site visits to the study areas, recording elements regarding the form, function, and daily life of the neighborhoods.

Spatially, the research focused on the city of Xanthi and specifically on the areas of Pournalik/Remvi, Kaskanes, and Drosero, while also examining the relationship of their residents with the historical and commercial city center. The selection of these specific areas was based on the distinct spatial and social conditions they present, as well as their varying degrees of connectivity to the rest of the urban fabric.

The interviews and field observation reveal that social integration and the relationship with urban space vary significantly across areas. In Pournalik and Kaskanes, smooth coexistence and interaction among different population groups are generally recorded. Conversely, Drosero exhibits more intense geographical and social isolation, limited interaction with the rest of the urban fabric, and more frequent reports of exclusion and racism. Ultimately, the findings demonstrate that daily coexistence and the Muslim minority's relationship with the city do not present a uniform picture but rather vary spatially even within the same city.

Key Words: Muslim minority, urban space, social integration, everyday coexistence, spatial differentiation, Xanthi

SPATIAL CONFIGURATION AND PUBLIC SPACE AMBIENCE QUALITIES: EXPLORING THE INTERACTIONS BETWEEN URBAN MORPHOLOGY, SOUNDSCAPE, AND SOCIAL BEHAVIOR

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Abstract

Public spaces are central elements of sustainable urban development, serving as collective environments where environmental, social and cultural dimensions intersect. While spatial configuration shapes movement patterns and social interactions, the quality of the sound environment represents a sensory dimension that directly influences well-being, health and the appropriation of urban space. In a context where the WHO recognizes urban noise as a major public health risk factor, integrating soundscape quality into the design of public spaces aligns fully with sustainable development goals.

This paper presents a comparative study conducted in Blida, examining the relationships between spatial configuration, soundscape quality and social behaviour in public spaces with contrasting spatial characteristics. The study distinguishes between ordinary days and event-based situations in order to capture the diversity of uses and atmospheres. Results indicate that spatial structure significantly influences the distribution of sound environments, and that this interaction shapes social practices and space appropriation.

This research contributes to a broader understanding of public spaces as multidimensional environments and offers recommendations for designing more inclusive, accessible and health-promoting public spaces — directly aligned with the Sustainable Development Goals (SDG 3, SDG 11).

Keywords: public space, spatial configuration, soundscape, social behaviour, sustainable urban development, urban health

A CINEMATIC QUEST FOR THE SUSTAINABLE CITY IN CONTEMPORARY ATHENS OF UNCERTAINTY

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Abstract

Starting from the last decade of the 20th century onwards, Greece became a host country for immigrants, a decisive social dynamic that has since led the country into a continuous search for its identity, its "self", on the threshold of an intercultural society where human relationships are fluid and porous. This search significantly influenced art and particularly cinema, as a representational art, raising it to an investigator of the "truth" and the phenomenon's dynamic, as well as the prospects of integrating the "stranger" into the city and specifically in Athens, where the shift in social balances created new fields of conflict. This dynamic intensified amid the recent economic crisis, as Greece became -once again in its history- a country of origin for emigrants.

The connection between the memory of the Greek diaspora and modern experiences of migration within Greece was reflected in cinema. The "stranger" has become our mirror, a part of ourselves, not just a part of our city, especially in the era of economic and humanitarian crisis. As characteristically mentioned in K. Katzourakis' film "*The Road to the West*" (2003), "...and whoever has no work in his own land is a stranger too".

As long as the rushing rivers of people, leaving their homelands, continue to flow, cinema will continue to play a decisive role in expressing, raising awareness, and ultimately shaping how we collectively perceive displacement, mobility, and the continuous, intensive flow of people, images, and ideas.

In the case of Athens and in an era of uncertainty, this is a reflective cinema in search of the sustainability of the city and its people.

Key words: Migration, crisis, reflective cinema, uncertainty, Athens, sustainable city.

PARTICIPATORY MAPPING OF LIVED URBAN EXPERIENCE: GENDER, EVERYDAY PRACTICES AND PUBLIC SPACE IN THESSALONIKI

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Abstract

Urban public space is experienced and interpreted through movement, perception and social interaction, shaping the ways in which people relate to the city. These experiences may vary among different groups of users, revealing dimensions of urban space that are not always captured through conventional spatial analysis. This study examines how participatory mapping can contribute to understanding lived urban experience, with particular attention to gender-related differences in perceptions of safety, accessibility and comfort in public space.

The research was conducted in Thessaloniki, Greece, in collaboration with ActionAid and EUROPE DIRECT Thessaloniki. The methodology combined two three-hour participatory mapping workshops, structured walks along predefined routes, and questionnaires. Two urban areas with different spatial characteristics were examined: Thessaloniki city centre and Saranta Ekklisies. During the walks, participants observed and experienced the urban environment in situ, discussing and recording how they felt at different points along the routes in relation to safety, accessibility and comfort. These observations were subsequently incorporated into the participatory mapping process.

The findings reveal differences in how public space was perceived and experienced across participants. Gender-related differences were particularly evident in perceptions of safety. Women more frequently associated poorly lit or less socially active locations with discomfort, particularly during evening conditions, while accessibility, maintenance and the quality of the built environment emerged as broader concerns among participants. The findings illustrate how perceptions of public space emerge through the interaction between spatial characteristics, social conditions and the situated experience of users.

The study highlights the potential of participatory mapping combined with in-situ spatial experience to reveal situated forms of knowledge about urban space. By connecting spatial characteristics with the ways in which public space is perceived and experienced by different users, the research contributes to the discussion on how lived urban experience can inform more inclusive approaches to urban planning and sustainable urban development.

Keywords: participatory mapping; lived urban experience; public space; gender; urban perception; urban planning; Thessaloniki

SUSTAINABLE PLANNING IN FRAGILE GEOGRAPHICAL AREAS: THE EXPERIENCE OF SPECIAL URBAN PLANS OF THE COASTAL FRONT OF EPIRUS, ANTIPAROS AND SMALL CYCLADES

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Abstract

Coastal and insular areas constitute particularly sensitive and dynamic spatial systems, increasingly exposed to development pressures, seasonal population concentration, changing patterns of settlement and economic activity, and the gradual transformation of their natural and cultural assets. At the same time, impacts associated with climate change reinforce the need for spatial planning approaches that incorporate adaptation, resilience, and sustainability.

Within this context, spatial planning is required to move beyond a purely regulatory role and operate as an integrated framework for managing complex and often conflicting territorial dynamics. This paper examines the contribution of Special Urban Plans as contemporary planning instruments, capable of addressing tackling areas with distinctive characteristics, complex spatial relationships, and significant development and environmental pressures.

The analysis focuses on two case studies in Greece: the Special Urban Plan for the Coastal Front of Epirus and the Special Urban Plan for Antiparos and Small Cyclades, both being prepared by ROIKOS S.A., with the authors actively participating in the respective multidisciplinary planning teams. Although the two cases differ considerably in geographical scale, structure, development intensity, and the nature of the pressures they face, they share key planning challenges related to the management of tourism and development, the protection of natural and cultural capital, land-use organisation, spatial and social cohesion, and resilience.

Through a comparative analysis of the two planning processes, the paper explores how a common planning instrument is adapted to different coastal and insular contexts and how it seeks to reconcile development objectives with environmental protection and local spatial specificities. Drawing on ROIKOS S.A.'s applied planning experience in the two study areas, the findings highlight the importance of context-sensitive planning approaches, flexible spatial strategies, and the integration of resilience into planning decisions. The two case studies illustrate how Special Urban Plans can contribute to more coherent and sustainable spatial development in fragile coastal and island territories.

Key words: Coastal and insular regions, Spatial planning, Special Urban Plans, Resilience, Sustainability

Special session:

TOWARDS A HUMAN-CENTRED AI ERA - SOCIAL AND ENVIRONMENTAL SUSTAINABILITY, EMERGING TECHNOLOGIES AND EUROPEAN POLICIES: CHALLENGES, BEST PRACTICES AND FUTURE DIRECTIONS

Organized by **Dr Vassilis Bokolas, Assoc Prof Andrea Colantoni, Assist Prof Stavros Kaperonis, Dr Efi Ntrouva**

DIGITAL GEOGRAPHIES AND EMERGING DIGITAL ENVIRONMENTS: OPPORTUNITIES, RISKS AND EDUCATIONAL NEEDS ACROSS FOUR EUROPEAN COUNTRIES

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Abstract

The growing participation of citizens in emerging digital environments raises questions about social and spatial inequalities, safety, participation and educational opportunities across European contexts. Focusing on young people and drawing on digital geographies, this paper examines how geographical, social and institutional conditions relate to engagement with online gaming platforms, virtual worlds and immersive technologies.

Conducted within the European project META YOUTH: Empowering Youth Awareness on the Metaverse and Metaverse Gaming, the study adopts a comparative approach covering Greece, Italy, Cyprus and Albania. It brings together five partner-led desk research reports and an ongoing qualitative investigation through focus groups with young people and representatives of relevant organisations. The desk research reviews academic literature, official statistics, policy and regulatory frameworks, and documented good practices. The focus groups explore participants' experiences, perceptions, concerns and educational needs, including differences in access to resources and opportunities for meaningful digital participation.

Preliminary findings from the desk research suggest that widespread digital access and familiarity with gaming do not necessarily imply critical understanding of emerging digital

environments. National contexts differ in digital skills, access to advanced technologies, institutional support and educational opportunities. Shared concerns include privacy, online harassment, commercial practices within games and digital wellbeing.

The ongoing focus groups are gathering further accounts of how young people experience digital opportunities and risks within different social and geographical contexts. Integrating the two research strands is intended to identify common challenges and context-specific needs, contributing to the study of digital inequalities and informing inclusive educational approaches that strengthen gaming literacy, digital citizenship, critical awareness and responsible participation.

Keywords: digital geographies; youth; emerging digital environments; digital inequalities; gaming literacy; focus groups; inclusive digital education

ENHANCING YOUTH EMPLOYABILITY THROUGH ARTIFICIAL INTELLIGENCE: A COMPARATIVE REVIEW OF GOOD PRACTICES IN GREECE AND SPAIN

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Abstract

Youth unemployment and the persistent mismatch between labour-market needs and young people's skills remain pressing challenges across Europe. In 2023, 11.2% of young Europeans aged 15-29 were not in employment, education or training (NEET), and a pronounced digital divide persists: only 34% of adults with lower educational attainment report basic digital skills, compared to 80% of their higher-educated peers. At the same time, a growing share of Generation Z reports lacking the soft skills employers increasingly demand. This paper presents

TALENT@AI, a transnational, Erasmus+ funded (KA210-YOU) small-scale partnership between a Greek university and a Spanish social enterprise, which aims to strengthen the employability of young people aged 18-30 by combining soft-skills training with Artificial Intelligence-powered learning tools. The project develops (a) a bilingual toolkit of soft-skills and AI-literacy resources, including case studies and self-assessment tools, and (b) an AI-powered conversational learning tool ("chatbot") that simulates realistic workplace scenarios - customer interaction, teamwork, conflict management, job interviews - and provides adaptive, real-time feedback in Greek and Spanish. Prior to the development phase, the project team conducted a comparative review of eight good practices in Greece and Spain that combine Artificial Intelligence, soft-skills development and youth employability, drawn from public-sector, network/NGO, private-sector and certification-based initiatives, in order to identify transferable design and dissemination lessons. Preliminary findings indicate that personalised, AI-assisted training - such as that adopted by national public employment services - and scaled public-private partnerships are associated with improved training uptake and, where measured, employment outcomes. These findings informed the design of TALENT@AI's own tools and its dissemination strategy, which includes a public platform, social media outreach and a multiplier event. The project is expected to reach approximately 150 direct platform users and will be evaluated through pre/post assessments of digital literacy, adaptability and self-reported employability gains. The paper discusses implications for the design of inclusive, AI-assisted employability interventions for young people in Southern Europe.

Key words: Artificial Intelligence, youth employability, soft skills, digital literacy, good practices, Greece, Spain

GREEN ACT 4U: EMPOWERING NEETS THROUGH GREEN ENTREPRENEURSHIP

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Abstract

The GREEN ACT 4U project (GReen activE entreprEneurship for NEETs as a pillAr to Combat the environmenTal crisis) is based on a dual vision: on the one hand, it places the environment and the fight against climate change at the heart of its activities; on the other, it aims to strengthen the employability of young people, particularly NEETs (Not in Employment, Education or Training), while promoting their sense of active citizenship. These objectives can be achieved by fostering green entrepreneurship and employment opportunities in the ecological transition sector.

In particular, the main objective of GREEN ACT 4U is to empower young NEETs by providing them with the knowledge, skills and motivation needed to launch environmentally sustainable businesses and become active agents of the green transition.

The specific objectives of the project are to:

- Provide NEETs with dedicated tools and training to support them in setting up green businesses;
- Promote an entrepreneurial mindset through education in innovation, creativity and sustainability;
- Improve youth employability by equipping participants with the skills required in the green labour market;
- Develop innovative digital resources and interactive storytelling tools capable of inspiring and engaging young people;
- Foster public engagement, networking and the development of policy recommendations to support sustainable youth entrepreneurship.

Keywords: green, digital, sustainability, youth, skills

EXPLORING THE ROLE OF SCHOOL NURSES IN MANAGING PEDIATRIC ASTHMA AMONG STUDENTS IN THE SCHOOL COMMUNITY: A SYSTEMATIC REVIEW

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Abstract

Pediatric asthma is one of the most common chronic conditions of childhood and may affect children's daily life, school attendance and quality of life. The school environment is an important setting for supporting students with asthma, and school nurses may contribute to asthma management, health education and collaboration between students, families, teachers and health professionals.

The present paper investigated the role of school nurses in managing pediatric asthma within the school community. The aim was to synthesize the available evidence on school-based nursing interventions and to offer health professionals, educators and policy makers a clear overview of their contribution.

The systematic review was conducted according to the principles of systematic literature review and the PRISMA guidelines. The research question was structured using the PICO framework. The population included school-aged children with asthma, and the intervention concerned the role and nursing interventions of school nurses for asthma management in the school setting. The comparison included usual care, absence of an organized intervention or a comparison group, where available. The outcomes of interest were asthma control and management, self-management, quality of life, school absenteeism and use of health services. The literature search was carried out in PubMed, Scopus and Google Scholar, using relevant keywords combined with the Boolean operators "AND" and "OR", and covered publications up to 31 December 2025.

The results showed that school nurses played a key role in asthma management through health education, support of self-management skills, monitoring of symptoms and medication use, and coordination with families, teachers and health professionals. School-based nursing interventions were associated with better asthma control and quality of life, and with reduced school absenteeism and use of emergency health services. The review concluded that school nurses are a valuable resource for supporting students with asthma in schools.

Key words: Pediatric asthma, school nurse, school health, disease management, nursing interventions, school community, systematic review

HUMAN CENTRED AI AND DIGITAL GAMIFICATION IN EARLY INCLUSIVE EDUCATION

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Abstract

Artificial intelligence (AI) and digital gamification raise important questions about how emerging technologies can support inclusive education while preserving human agency and pedagogical responsibility. This ongoing study explores educators' and specialists' perspectives and experiences regarding their use in supporting children with special educational needs in preschool and the first two grades of primary school. AI and digital gamification are examined as distinct approaches that may overlap in educational applications. The study addresses the conditions under which these technologies are perceived as appropriate for young children with diverse educational needs.

A qualitative design uses semi-structured interviews with a target sample of eight educators and specialists with relevant professional experience. Data collection is ongoing. Interviews explore concrete experiences and perceived opportunities and limitations concerning engagement, attention, motivation, and cognitive and socio-emotional support. They also examine the use of AI for teachers' planning and adaptation of educational materials, alongside applications involving direct interaction with children. Additional topics include accessibility, developmental appropriateness, professional training, data protection, and human oversight. Interviews are audio-recorded with consent and transcribed for thematic analysis.

As the study is in progress, no empirical findings are reported at this stage. The analysis will explore how participants distinguish observed classroom experiences from expectations about technological potential, including situations in which use is considered unsuitable or unhelpful. The intended contribution is a contextualised understanding of professional perspectives on human-centred technology use at the intersection of early childhood education and special educational needs. By examining pedagogical judgement, participation and the limits of technological support, the study aims to inform reflection on responsible AI integration and inclusive educational practice. Its conclusions will concern participants' accounts rather than establish effects on children's learning or development.

Key words: Artificial Intelligence; Digital Gamification; Serious Games; Special Educational Needs; Inclusive Education; Early Childhood Education; Human-Centred AI

PLACE-NEUTRAL GAINS: HOME REGION, HOST DESTINATION AND LENGTH OF STAY IN THE SOFT-SKILL RETURNS OF ERASMUS+ MOBILITY FOR ALBANIAN STUDENTS

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Abstract

Erasmus+ international credit mobility is one of the few instruments through which students from the Western Balkans can study for a semester at a European university, and it is expected to return skills to the regions they come from. Whether those returns depend on place, however, has not been examined for any non-associated country. This paper asks whether the perceived soft-skill gains of Albanian Erasmus+ students differ according to where they study at home, where they go abroad and how long they stay. It draws on a national survey of students who completed Erasmus+ exchanges, who rated their communication, collaboration, problem-solving, adaptability and cultural awareness before and after mobility. Home universities were grouped into those based in Tirana and those in the regions, host countries into European macro-regions, and length of stay was taken from students' own reports. Differences were estimated after adjusting for starting levels and assessed with equivalence tests rather than significance alone. The gains proved remarkably place-neutral. Students from regional universities gained almost as much as those from the capital, with a small shortfall concentrated in cultural awareness, and students who went to Central and Eastern European universities gained as much as those who went to Southern or Western Europe. Length of stay mattered only at the margin: semester-length stays dominated, and stays longer than six months were associated with a modest additional gain. For regional development, the findings suggest that the returns of Erasmus+ do not depend on proximity to the capital or on the prestige of the destination, so that widening participation from regional universities and diversifying destinations is unlikely to dilute what students gain. The paper closes with implications for regional universities, mobility agreements and national monitoring.

Keywords: Erasmus+; international credit mobility; soft skills; regional development; territorial equity; higher education; Albania

BOOKING HEALTH APPOINTMENTS VIA DIGITAL MEDIA APPLICATIONS: REPERCUSSIONS FOR HEALTHCARE ACCESS, HEALTH OUTCOMES, AND WORK ABILITY AMONG FEMALE IMMIGRANT WORKERS IN GREECE

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Abstract

Increasingly digital media applications are becoming part of healthcare and thereby also for marginalized populations. This research investigates how female immigrant workers use digital health applications to make medical appointments and what are the implications for their healthcare access, health outcomes, work ability and labor market participation. Issues of interest are the opportunities and also limitations of digital health applications for women with intersecting barriers arising from gender, immigration status and their employment conditions. The qualitative research design, employing semi-structured interviews with female immigrant workers using digital media to access healthcare, explores the females' experiences of using digital appointment systems as well as the advantages and disadvantages encountered by the females when using the healthcare services via digital media. In addition, the females' experiences of health as well as the relationship between their health, work ability and their employment were explored. The data was analyzed by thematic analysis, to identify recurring themes and aspects within the data. The findings of this study reveal both enabling and limiting effects of digital health technologies for female immigrant workers. Improved access to healthcare through digital health media can have positive effects on employment stability and work ability. In particular, finding and accessing health care services through digital media is crucial for improving health status and, in turn, work ability of female immigrant workers. These findings will be useful for health care policy makers and practitioners who are trying to develop more inclusive health care systems for enhancing well-being and work participation of diverse urban populations.

Key words: digital health applications, immigrant women, healthcare access, work ability, digital literacy, inequality

METAYOUTH: ETA YOUTH – EMPOWERING YOUTH AWARENESS ON THE METAVERSE AND METAVERSE GAMING

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Abstract

Through META YOUTH and GREEN ACT4U - co-funded by the European Union under the Erasmus+ Programme - SEA Tuscia has launched an interactive map dedicated to organisations, projects and initiatives that support young people, starting with a focus on Rome. The goal is twofold: to give visibility to experiences that are often fragmented or little known — courses, workshops, activities aimed particularly at NEET youth — and to foster synergy among those who work every day on youth employability, social inclusion and empowerment.

The map is designed as a shared tool, meant to grow over time through the contribution of anyone willing to take part: citizens, young people, sector professionals, organisations and associations. Anyone aware of initiatives not yet included is welcome to report them. In the coming months, the goal is to extend the map's coverage beyond Rome to the entire Lazio region, connecting experiences across all its provinces.

This work reflects a core belief: connecting experiences and good practices across different contexts is a concrete step towards improving, over time, not only individual projects but also broader policies supporting young people.

Keywords: green, digital, sustainability, youth, skills

FIRM HETEROGENEITY AND SUSTAINABLE DOMESTIC REVENUE MOBILISATION: EVIDENCE FROM ADMINISTRATIVE CORPORATE TAX DATA IN UGANDA

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Abstract

Achieving the Sustainable Development Goals (SDGs) requires governments to mobilise stable and resilient domestic revenues to finance essential public services. Yet limited evidence explains how differences among firms shape sustainable domestic revenue mobilisation in developing economies. This study addresses this gap by examining how firm heterogeneity influences corporate income tax compliance and, consequently, sustainable fiscal capacity in Uganda. Drawing on Institutional Theory, it offers readers a firm level perspective for understanding why businesses operating within a common regulatory environment may exhibit different compliance outcomes. The study uses Uganda Revenue Authority administrative tax data for 2013 - 2022, with firm heterogeneity captured by size, profitability, ownership, age, leverage, liquidity, capital intensity and sector. The empirical analysis applies Poisson pseudo-maximum likelihood estimation, firm fixed effects models, Tobit estimation, interaction models and robustness analyses.

The findings reveal substantial variation in corporate tax compliance across firms. Larger, more profitable and older firms generally exhibit stronger statutory alignment and higher effective tax provision, while leverage is consistently associated with weaker compliance. However, firm fixed-effects results show that increases in size and profitability do not automatically strengthen compliance, underscoring the importance of persistent organisational and institutional conditions. Significant sectoral differences further indicate that sustainable revenue mobilisation reflects both firm capacity and the wider regulatory environment.

The study extends sustainable fiscal capacity research and Institutional Theory by demonstrating how organisational heterogeneity shapes compliance under a common institutional environment. For researchers and policymakers, the findings provide evidence for understanding firm level revenue mobilisation and designing differentiated, risk-based tax administration strategies that can strengthen fiscal capacity and support sustainable development.

Keywords: Sustainable domestic revenue mobilisation; sustainable fiscal capacity; corporate income tax compliance; firm heterogeneity; Institutional Theory; administrative tax data; Sustainable Development Goals.

FROM AI LITERACY TO HUMAN AGENCY: A PSYCHOLOGY-INFORMED FRAMEWORK FOR RESPONSIBLE AND INCLUSIVE AI USE IN HIGHER EDUCATION

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Abstract

Generative artificial intelligence has entered university classrooms, including online learning environments, faster than many institutions have developed ways of helping students use it thoughtfully. It can support exploration and feedback, yet its fluent answers can also make it tempting to hand over decisions that should remain the learner's. In distance education, where independent study and digitally mediated interaction are central, this tension becomes especially relevant. The challenge is therefore educational as much as technological: how can higher education foster informed use without weakening students' independence or widening existing inequalities?

This conceptual paper draws on a critical, integrative reading of recent systematic and scoping reviews on AI literacy, self-regulated learning and educational equity, together with UNESCO guidance on human-centred AI. Existing frameworks describe technical, ethical and critical competencies in considerable detail. Less clear is how these competencies can be translated into practices suited to both campus-based and online classrooms, while attending to students' psychological processes and unequal opportunities to benefit from AI.

To address this practical gap, the paper proposes a psychology-informed framework built around four connected priorities: learner agency, metacognitive reflection, critical and ethical judgement, and inclusive participation. Illustrative practices include asking students to develop an initial response before consulting AI, check generated claims against independent sources, explain why they accept or reject suggestions, and consider how access, language or disability can shape learning experiences in different teaching formats. Possible assessment indicators include the quality of reasoning, transparency about AI assistance, and recognition of uncertainty and bias.

The proposed framework has not yet been empirically evaluated. Rather than offering prescriptive institutional guidelines, the paper presents literature-informed directions that educators may adapt, discuss and evaluate in campus-based and distance-learning settings.

Keywords: Human-centred AI; higher education; distance education; learner agency; metacognition; AI literacy; inclusive education

HUMAN-CENTRED AI IN EU CANDIDATE COUNTRIES: ALIGNING THE AI ACT WITH CONSUMER PROTECTION AND CAPACITY BUILDING

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Abstract

A consumer is refused credit by an automated system and cannot find out why. A small firm buys an AI tool for recruitment without knowing it may be classified as high-risk. A public institution introduces a chatbot that no one has been trained to supervise. Each case raises the same question: who protects the person affected, and how?

The AI Act (Regulation (EU) 2024/1689, as amended by Regulation (EU) 2026/1744) declares in Article 1 the aim of promoting "human-centric and trustworthy" artificial intelligence. Together with the revised Product Liability Directive (EU) 2024/2853 and the consumer acquis, it turns this aim into concrete duties of transparency, human oversight, risk management and redress. For EU candidate countries, the question is not only whether these rules will be transposed, but whether the institutions, skills and economic conditions exist to make them work.

This paper examines how the human-centred AI paradigm can be built into the legal approximation process of candidate countries, with particular attention to consumers, small and medium-sized enterprises and public institutions. Combining doctrinal analysis, a comparative review of EU and national legislation, and lessons from Erasmus+/Jean Monnet and COST cooperation, the study pursues three objectives. First, it maps the gaps between national rules on consumer protection, personal data and product safety and AI Act requirements. Second, it assesses the risk that formal transposition, without supervisory capacity and AI literacy, widens the distance between "law in books" and "law in action" (Pound, 1910). Third, it explores how EU-funded projects can build that capacity, linking law, digital innovation and sustainable entrepreneurship.

The paper argues that candidate countries need a sequenced approach: legislative alignment accompanied by investment in enforcement authorities, training of legal professionals and support for responsible business models. It concludes with recommendations for national authorities and future European cooperation projects.

Keywords: human-centred AI; AI Act; consumer protection; EU candidate countries; legal approximation; capacity building; European projects

SETTLEMENT DIVERSITY AND PEDAGOGICAL PLACE: KINDERGARTEN EDUCATION AND LOCAL SUSTAINABILITY IN MESSINIA, GREECE

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Abstract

The relationship between education and place is shaped not only by pedagogical choices but also by spatial, social, and cultural characteristics of the territories in which schools are embedded. This study examines how kindergarten teachers in Messinia, Greece, interpret and pedagogically mobilise their surrounding settlement environments, and how this process relates to social sustainability and school-community relations. Messinia provides a relevant regional case because it includes urban, semi-urban, rural, mountainous, and coastal settings within the same administrative unit.

A convergent mixed-methods design combined questionnaire data from 173 kindergarten teachers with 21 semi-structured interviews. The quantitative and qualitative findings were integrated during interpretation to identify convergent patterns in teachers' perceptions and practices regarding the use of natural, built, social, and cultural features of local environments, engagement with community actors, and the conditions that support place-responsive educational practice.

The findings indicate that teachers recognise the pedagogical potential of the environments surrounding their schools and draw on local spaces, cultural resources, and community relationships to connect learning with children's everyday experiences. However, the contribution of settlement environments is neither automatic nor spatially deterministic. Their educational significance emerges through teachers' pedagogical mediation and through relationships linking schools with families, local organisations, and wider community networks. Professional learning, supportive leadership, and enabling institutional conditions further influence the systematic integration of local resources into educational practice.

The study conceptualises the transition from settlement environment to pedagogical place as a socially mediated process. By using Messinia as a regional case study, it offers an interpretive framework for understanding how early childhood settings can engage with local environments and communities and contributes to interdisciplinary discussion on territorial diversity, education, and the social dimension of sustainable local development.

Key words: Settlement environment, pedagogical place, social sustainability, early childhood education, school-community relations, local development, Messinia

DIGITAL GEOGRAPHIES AND EMERGING DIGITAL ENVIRONMENTS: OPPORTUNITIES, RISKS AND EDUCATIONAL NEEDS ACROSS FOUR EUROPEAN COUNTRIES

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Abstract

The growing participation of citizens in emerging digital environments raises questions about social and spatial inequalities, safety, participation and educational opportunities across European contexts. Focusing on young people and drawing on digital geographies, this paper examines how geographical, social and institutional conditions relate to engagement with online gaming platforms, virtual worlds and immersive technologies.

Conducted within the European project META YOUTH: Empowering Youth Awareness on the Metaverse and Metaverse Gaming, the study adopts a comparative approach covering Greece, Italy, Cyprus and Albania. It brings together five partner-led desk research reports and an ongoing qualitative investigation through focus groups with young people and representatives of relevant organisations. The desk research reviews academic literature, official statistics, policy and regulatory frameworks, and documented good practices. The focus groups explore participants' experiences, perceptions, concerns and educational needs, including differences in access to resources and opportunities for meaningful digital participation.

Preliminary findings from the desk research suggest that widespread digital access and familiarity with gaming do not necessarily imply critical understanding of emerging digital

environments. National contexts differ in digital skills, access to advanced technologies, institutional support and educational opportunities. Shared concerns include privacy, online harassment, commercial practices within games and digital wellbeing.

The ongoing focus groups are gathering further accounts of how young people experience digital opportunities and risks within different social and geographical contexts. Integrating the two research strands is intended to identify common challenges and context-specific needs, contributing to the study of digital inequalities and informing inclusive educational approaches that strengthen gaming literacy, digital citizenship, critical awareness and responsible participation.

Keywords: digital geographies; youth; emerging digital environments; digital inequalities; gaming literacy; focus groups; inclusive digital education

FROM CULTURAL VALUE TO SUSTAINABLE LOCAL DEVELOPMENT: CULTURAL ORGANIZATIONS AS PLACE-BASED ACTORS IN THESSALONIKI, GREECE

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Abstract

Cultural organizations are increasingly recognized not only as producers of cultural value but also as place-based actors that can contribute to sustainable local and regional development. Through their infrastructures, environmental practices, partnerships and community engagement, such organizations may generate interconnected environmental, social, economic and cultural values, while supporting place identity, destination attractiveness and quality of life. This study explores how cultural organizations in Thessaloniki, Greece's second-largest city and major cultural hub, translate cultural value into broader forms of local value and identifies the organizational mechanisms and pathways through which they contribute to sustainable urban development.

The study adopts a comparative qualitative case-study approach focusing on six cultural organizations with distinct organizational and operational characteristics located in Thessaloniki: the Museum of Contemporary Art (MoMus), the Telloglio Foundation of Arts (Aristotle University of Thessaloniki), the Thessaloniki Concert Hall, the State Orchestra of Thessaloniki, the State Theatre of Northern Greece, and the Noesis Science Center and Technology Museum. Empirical data was collected through six semi-structured interviews with organizational representatives and complemented by a content analysis of publicly available material including websites, social media channels and institutional reports. The analysis is guided by the Triple Bottom Line framework, encompassing environmental, social and economic sustainability, while incorporating cultural and place-based value as an additional dimension relevant to local development.

The findings indicate three interconnected pathways through which cultural organizations contribute to sustainable local development. First, environmental responsibility is embedded in infrastructures and operational practices, including energy efficiency, water management, renewable energy adoption and waste reduction initiatives. Second, cultural organizations create social and cultural value through accessible programming, educational activities, community engagement, environmental awareness campaigns, social inclusion initiatives and the preservation and promotion of local heritage. Third, they contribute to economic and place-based value by attracting visitors, supporting cultural tourism, strengthening destination identity and establishing collaborations with public institutions, universities, environmental organizations, tourism operators and other local stakeholders.

The comparison reveals substantial differences in organizational capacity across the six cases. While some cultural organizations have integrated sustainability into their strategic identity and developed systematic monitoring and reporting practices, others face constraints related to limited staffing, insufficient strategic planning, high financial costs, organizational

complexity and the difficulty of changing established institutional mindsets and operational routines.

The study argues that cultural organizations should be understood as active place-based contributors to sustainable local and regional development rather than as actors operating solely within the cultural sector. It highlights the importance of organizational capacity, strategic planning and cross-sectoral cooperation for connecting cultural production with environmental, social, economic and cultural dimensions of sustainable destination development. The findings have implications for cultural policy makers, destination management organizations and cultural managers seeking to leverage cultural organizations as catalysts for sustainable urban development.

Key words: Cultural Organizations; Sustainable local development; Cultural value; Place-making; Triple Bottom Line; Cultural tourism; Greece

Session:

EDUCATION AND SUSTAINABLE DEVELOPMENT

PROMOTING SUSTAINABLE DEVELOPMENT THROUGH PRIMARY SCHOOL TEXTBOOKS. CASE STUDY: URBAN AND RURAL AREAS IN GREECE

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Abstract
Sustainable Development is the most important factor in people's well-being, as explicitly stated in the United Nations' 17 Sustainable Development Goals, which are to be achieved by 2030, as they are central to future international, local, and regional development. Human intellectual development and the rapid advancement of technology lead to continuous progress, with the interaction and interconnection of the pillars of Sustainable Development—Economy, Environment, and Society—to ensure a good quality of life for people in both urban and rural areas. Given that environmental issues are constantly increasing at both the local and global levels, it is essential to educate children as the future productive members of society. Consequently, a quantitative study was conducted using primary questionnaire data to examine the fundamental basis of the 17 Sustainable Development Goals—namely, the knowledge possessed by teachers, their views on the implementation and application of these goals in school textbooks, given that they are the ones responsible for teaching children from the start of their school lives. In addition, teachers' ability to recognize the connection between the knowledge they impart and the 17 Global Goals was assessed, and their efforts to promote these goals through the Curriculum in a general context were examined. Finally, when examining the education systems in Greece, primary education holds the most important position and is the focus of attention.

Keywords: School Textbooks, Teachers, Knowledge, Opinions, Action, Primary Education, Sustainable Development

FROM ENTRECOMP TO CIRCULAR ENTREPRENEURSHIP: CULTIVATING SKILLS, SUSTAINABLE THINKING AND VALUE CREATION IN THE CLASSROOM

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Abstract

The transition towards a circular and sustainable economy requires education to connect economic knowledge with entrepreneurship competence, responsible resource use and sustainability-oriented thinking. This paper presents a pedagogical approach for integrating the EntreComp - European Entrepreneurship Competence Framework into economic education through the context of circular entrepreneurship.

The approach treats entrepreneurship not merely as preparation for business creation, but as the capacity to transform ideas and opportunities into value. Seven EntreComp competences are selected for their relevance to a classroom-based circular entrepreneurship project: spotting opportunities, creativity, ethical and sustainable thinking, mobilising resources, financial and economic literacy, taking the initiative, and working with others. A complementary pedagogical connection with GreenComp is employed, while the two frameworks remain distinct and are not presented as formally merged.

The teaching application is grounded in economic concepts already included in school education, particularly scarcity, choice, opportunity cost, the economic principle, production and factors of production. The proposed method combines conceptual alignment with a three-hour classroom scenario in which students identify a real problem of resource waste in the school or local community, collect basic evidence, examine alternatives, design a circular solution, assess resources and costs, present their proposal and reflect on feedback. The learning sequence follows the progression: identify, analyse, design, assess costs, present and reflect.

Project-based learning, case studies, role-playing and collaborative student initiatives support implementation, while formative assessment focuses on justification of choices, economic reasoning, collaboration, responsible resource use and improvement after feedback. The pedagogical analysis indicates that circular entrepreneurship can provide a coherent context for applying economic knowledge while developing entrepreneurship and sustainability competences. Value creation is examined through economic, environmental and social dimensions as a pedagogical synthesis, supporting the transition from knowledge to responsible action and circular value creation.

Key words: EntreComp, circular entrepreneurship, circular economy, economic education, GreenComp, sustainability competences

DESIGN OF A MODEL ARCHAEOLOGICAL MUSEUM FOR CHILDREN AND ADOLESCENTS IN SPARTA USING IoT, 3D SCANNING AND PRINTING, AND THE MARIA MONTESSORI EDUCATIONAL METHOD

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Abstract

This paper examines the design of a model archaeological museum for children and adolescents in Sparta, incorporating Internet of Things (IoT) technology, 3D scanning and printing, and the educational method of Maria Montessori. The aim is to create an innovative, interactive, and inclusive environment in which archaeological knowledge is provided through experiential activities adapted to the needs of children and adolescents. The Montessori approach, which is based on learning through sensory exploration, autonomy, and practical experience, is combined with the possibilities offered by modern technology. IoT enables the dynamic adaptation of exhibits to the needs of each visitor, while 3D printing provides children with the opportunity to touch and create replicas of archaeological objects, enhancing understanding and interaction.

The research is based on a literature review and the study of international practices, aiming to develop a contemporary museum model that combines cultural heritage, education, and technology. At the same time, the proposed museum structure is considered as a cultural and educational space that can strengthen younger generations' connection with the local cultural heritage of Sparta, social participation, and the use of cultural heritage within the framework of sustainable local development. The use of new technologies and inclusive design can contribute to broadening access to cultural heritage and activating it for the benefit of the local community and future generations.

Keywords: Montessori, Internet of Things, 3D Scanning/Printing, cultural heritage, sustainable cultural development, local development

DIETARY PROFILES AND FOUR DIMENSIONS OF SUSTAINABILITY AMONG UNIVERSITY STUDENTS IN TIRANA

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Abstract

Dietary sustainability depends on the combination of food choices, affordability, social practices and nutritional characteristics. This study examines how seven dietary profiles among students at the Agricultural University of Tirana differ across environmental, economic, socio-cultural and nutritional dimensions, with body mass index (BMI) as a complementary descriptive measure.

A cross-sectional survey conducted in the 2023–2024 academic year recorded participation by 331 students. The questionnaire assessed food consumption during the university semester and related purchasing and eating practices. Food items were aggregated into major groups using mean weekly consumption frequencies. Exploratory factor analysis followed by hierarchical and K-means clustering produced seven profiles, which were named according to their dietary and behavioural characteristics. Sustainability was summarized across four normalized pillars within an equal-weight Sustainable Diet Index framework. Profile-level sustainability values were expressed as lower bounds or upper limits rather than exact means.

The reported factor solution explained 67.3% of variance. The Sustainable Vegan profile had an environmental lower bound of 0.75, while the Budget-Conscious Student profile had an economic lower bound of 0.75. Vegetarian and pescatarian profiles combined environmental lower bounds of 0.70 and 0.65, respectively, with nutritional lower bounds of 0.70. The Ultra-Processed Consumer profile was below 0.40 in all four dimensions. Profile mean BMI ranged from 19.8 to 28.7 kg/m². These summaries identified contrasting sustainability characteristics but did not establish an exact overall ranking.

The findings support examining the four dimensions together when considering university food provision. Dietary restrictions alone do not describe affordability or the social conditions of eating. Campus initiatives should address nutritional quality alongside access and acceptability, with their effects evaluated through direct measures of student food choices.

Key words: Dietary profiles, sustainable diets, Sustainable Diet Index, food consumption, university students, body mass index, Albania.

FROM POLICY TO PRACTICE: A HUMAN-CENTERED FRAMEWORK FOR TEACHER SUPPORT AND AI GOVERNANCE IN SCHOOLS

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Abstract

The rapid diffusion of generative artificial intelligence in education has outpaced schools' capacity to govern it responsibly. European policy sets a clear direction: Article 4 of the EU AI Act, as amended by the Digital Omnibus in 2026, requires measures supporting AI literacy; the Commission's updated ethical guidelines for educators (2026) offer practical guidance; DigComp 3.0 (2025) embeds AI competence across all competences; and the OECD–European Commission AI Literacy Framework (2026) defines AI literacy for schools. Yet teachers often lack support to translate these instruments into classroom decisions. This paper argues that education advisers and similar school-support structures occupy a strategic intermediary position between European policy and school practice, and proposes a human-centered framework for teacher support and AI governance at school level.

Drawing on the authors' professional experience as education advisers in the Greek system and, in the first author's case, as a classroom teacher for nine years at the European School of Brussels III, a multilingual and multicultural setting, where she also worked as digital learning coordinator and Erasmus+ coordinator, the paper synthesizes practice-based insights into a framework with three interlinked dimensions. First, a professional learning dimension develops teachers' AI literacy through collaborative, scenario-based inquiry rather than isolated tool training. Second, a participatory governance dimension applies agile principles, namely short iterations, feedback loops and co-design with teachers, students and parents, to develop transparent, adaptable school AI policies grounded in human oversight, data protection and accountability. Third, a sustainability dimension introduces a proportionality criterion that weighs the pedagogical value of AI use against its social, equity and environmental costs, including energy consumption.

The paper discusses implications for inclusion in multilingual classrooms and offers recommendations for national and European policy. It is conceptual and invites European project partnerships.

Key words: human-centered AI, AI literacy, teacher professional development, European policy, AI governance in schools, participatory design, sustainable education

LEADING INCLUSIVE AND EQUITABLE EDUCATION: A PRISMA-BASED SYSTEMATIC REVIEW

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Abstract

Inclusive and equitable education is central to social sustainability, yet persistent inequalities in access, participation, recognition and educational outcomes continue to affect learners across different contexts. Educational leaders are expected to respond to these challenges, but the relevant evidence remains fragmented across studies of inclusive leadership, social justice leadership, equity-oriented leadership and leadership for well-being. This systematic review examines how educational leadership practices contribute to inclusive and equitable education and identifies the organisational conditions that enable or constrain their implementation. The review follows the PRISMA 2020 guidelines. Searches will be conducted in Scopus, Web of Science and ERIC using combinations of terms related to educational leadership, inclusion, equity, equality, social justice and well-being. Peer-reviewed empirical studies published in English will be screened against predefined inclusion and exclusion criteria. Study characteristics, educational settings, leadership practices, target groups, enabling conditions, barriers and reported outcomes will be extracted systematically. A thematic synthesis will be used to identify recurring leadership approaches and relationships across school, higher education and adult learning settings. The review is expected to distinguish between leadership that treats inclusion as a set of isolated interventions and leadership that embeds equity in organisational culture, decision-making, professional learning and resource allocation. It will also clarify how participation, trust, shared responsibility and attention to learner and staff well-being support more sustainable educational organisations. The findings will offer researchers an integrated account of the field and provide educational leaders with an evidence-informed framework for reviewing institutional practices, identifying barriers to participation and developing more inclusive and equitable learning environments.

Keywords: Educational leadership, inclusive education, equity, social sustainability, systematic review, PRISMA

THE EXPERIENCE AND CHALLENGES OF UNIVERSITIES IN THE IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT ACTIVITIES ACROSS SECTORS: CASE STUDIES OF FACULTY OF ECONOMICS AND BUSINESS IN OSIJEK, CROATIA AND THE GERMAN UNIVERSITY OF TECHNOLOGY IN OMAN

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Abstract

Universities play a significant role in the sustainable development of cities, regions, and countries, not only by supplying skilled labor but also by driving eco-innovation through joint research and informing sustainable practices across primary, secondary, and tertiary sectors. Although universities are recognized as important actors in sustainable development, existing research focuses on students (Xu et al., 2024), education (Ribeiro et al., 2023), and the implementation of the SDGs in teaching and research (Leal Filho et al., 2023).

This paper uses a comparative case study design (Yin, 2009; Stake, 2013) to examine the experiences, operational strategies, and barriers higher education institutions face in fostering sustainable transitions between sectors. Semi-structured interviews were conducted with key administrative representatives from two institutional and national contexts: the Faculty of Economics and Business in Osijek (EFOS) and the German University of Technology in Oman (GUtech).

The comparative case study analysis shows that while both institutions share a universal commitment to sustainability, their practical approaches diverge significantly because of contextual heterogeneity. At EFOS, challenges stem mainly from legacy industrial decline and the need to modernize the secondary sector. In contrast, at GUtech, the primary challenge is decoupling tertiary education output from hydrocarbon dependence and embedding sustainable technologies into emerging primary and secondary industries. Furthermore, cultural attitudes toward entrepreneurship, the maturity of local innovation ecosystems, and existing social welfare frameworks heavily influence how each university prioritizes research agendas, designs interdisciplinary curricula, and negotiates industry partnerships.

The findings contribute to the discussions on place-based sustainable development by showing that "best practices" cannot be copied. Instead, HEIs must develop strategies that fit their local context to effectively engage with the primary, secondary, and tertiary sectors. Ultimately, this paper provides practical guidance for policymakers and university leaders who want to align their institutions' goals with the diverse needs of sustainable growth.

Keywords: Universities, Sustainable Development, Primary-Secondary-Tertiary Sectors, Place-Based Development, Croatia, Oman

Session:

SUSTAINABLE URBAN DEVELOPMENT, ENVIRONMENT, CULTURE AND NEW TECHNOLOGIES

AI-ENABLED DIGITAL TWINS FOR SUSTAINABLE URBAN DESIGN DECISION-MAKING: A SYSTEMATIC REVIEW AND CONCEPTUAL FRAMEWORK

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Abstract

The integration of Artificial Intelligence (AI) and Digital Twins (DTs) offers new opportunities to support sustainable decision-making in cities and the built environment. However, research remains dispersed across building energy management, performance simulation, predictive maintenance, environmental quality, and urban planning, limiting a comprehensive understanding of how these technologies can support sustainable design and planning decisions. This review investigates how AI and DT technologies are integrated in sustainable building and urban applications, which data sources, AI and simulation techniques, and sustainability indicators are used, and which types of design, retrofit, operational, and urban planning decisions they support. It also examines the relationships among these components to identify the requirements for an integrated decision-support framework.

A systematic literature review is conducted following the PRISMA 2020 principles. Peer-reviewed studies addressing Digital Twins, AI, and sustainability in buildings and urban environments are systematically identified and analysed. A structured extraction and thematic synthesis examine the links between data sources, DT functions, AI methods, sustainability assessment, alternative evaluation, and decision-making.

The review provides a decision-oriented synthesis of current research for sustainable urban and regional development. It identifies recurring application patterns and integration gaps, particularly in the transition from monitoring and prediction toward the evaluation and comparison of sustainable alternatives. Based on the findings, a conceptual framework is developed linking data acquisition, DT modelling, AI-enabled analysis, sustainability assessment, alternative evaluation, and decision support. The framework provides a structured basis for future research and practical applications of AI-enabled Digital Twins in sustainable urban development.

Key words: Artificial Intelligence; Digital Twins; Sustainable Urban Development; Sustainable Design; Decision Support; Smart Cities; Urban Planning.

ADAPTIVE INFRASTRUCTURE GOVERNANCE IN PERI-URBAN ZONES: OVERCOMING AGGLOMERATION SHADOWS UNDER MACROECONOMIC SHOCKS

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Abstract

Rapid industrialization and high FDI inflows in developing peri-urban areas often create "agglomeration shadows"—a phenomenon where foreign investment enclaves crowd out domestic enterprises and strain municipal governance. Existing studies mostly diagnose these issues qualitatively, offering little in the way of data-driven tools to guide public resource allocation under economic uncertainty. To bridge this gap, we present a spatial-institutional framework that integrates a modernized Central Place Theory (CPT) with a Macro-UTAUT governance model.

Rather than relying on traditional expert-led Analytic Hierarchy Process (AHP), which is prone to subjective bias, our framework uses an algorithmic Derivative AHP powered by deterministic empirical data imputation. We then stress-test the structural stability of the priority weights through a 10,000-iteration Monte Carlo simulation. Applied to Bac Ninh province (Vietnam), the model demonstrates that "soft" connectivity assets—namely Smart Logistics (23.59%) and Digital Trade (19.03%)—take clear precedence over traditional physical infrastructure.

Interestingly, under severe simulated economic stress, the framework reveals a non-linear crossover dynamic: while logistics sectors drive steady-state economic integration, policy focus must dynamically shift toward protecting human capital (Education) during crises. Overall, this study offers a mathematically verified, practical blueprint for adaptive zoning, institutional readiness, and strategic infrastructure allocation in fast-growing emerging markets.

Key words: Agglomeration Shadows, Peri-Urbanization, Macro-UTAUT, Derivative AHP, Monte Carlo Simulation, Infrastructure Governance.

SUSTAINABLE CONSERVATION AND ADAPTIVE REUSE OF URBAN HERITAGE BUILDINGS; CHALLENGES AND OPPORTUNITIES. CASE STUDIES FROM MANCHESTER AND THE NORTHWEST, UNITED KINGDOM

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Abstract

Conservation and adaptive reuse of buildings, of historic and cultural significance, has always been a challenging and complex process. In the 21st century, sustainability in the built environment, in all its dimensions, has become the priority for our Society. Conservation professionals (architects, engineers, heritage consultants, etc.), stakeholders, planners, clients and curators of heritage buildings are facing with the challenge of balancing heritage buildings' significance, sustainable design, resolving technical issues and securing buildings' future with sympathetic and compatible new uses, in urban conservation projects.

This paper explores challenges and opportunities in the conservation of urban heritage buildings in Manchester and Northwest in the UK, through the perspectives of architects and other professionals involved, and the users. This paper is the cumulative result of the author's several site visits to conservation projects and presentations of conservation professionals involved, through her association with the Institute of Historic Building Conservation and Royal Institute of British Architects. Case studies include heritage buildings of different architectural languages, styles, typologies, and adaptive reuse design concepts. These projects have been completed since 2017 or are due for completion in 2027. The paper captures the professionals' challenges, from concept to completion, and public/users' views.

The results concluded that across all case studies, conservation professionals had to balance multiple challenges, from improvements of thermal and acoustic performance, structural integrity of the historic fabric, removal of dangerous substances (asbestos, etc), repairing and preserving the significant architectural details, to meet the requirements of planning permissions and clients' inspirations on the adaptive reuse concepts. The knowledge gained from the study can inform other conservation projects in the future.

Key words: Challenges of Conservation, Adaptive Reuse, user's perspectives

URBAN DIGITAL TWINS IN GREECE: OPPORTUNITIES AND PATHWAYS TOWORDS A NATIONAL FRAMEWORK

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Abstract

Urban Digital Twins (UDTs) offer a promising framework for integrating heterogeneous urban data, supporting simulation and strengthening evidence-based planning. This paper examines the opportunities and requirements for establishing a national framework for UDT development in Greece, with emphasis on a coordinated but decentralized model in which municipal Digital Twins operate through common technical and semantic standards. The study draws on an exploratory review of Greece's current digital governance environment, existing Smart City and GIS initiatives, identified implementation barriers, and lessons derived from international UDT practices.

The analysis shows that Greece already possesses important enabling conditions for the development of UDTs, including national geospatial and digital infrastructures, growing municipal use of IoT and sensor technologies, participation in European initiatives and access to national and European funding instruments. Building on these existing resources, a national framework could support the coordination of municipal initiatives, promote common technical and sematic standards, improve interoperability between heterogeneous data sources and facilitate the reuse of digital infrastructure across municipalities. Such a framework could also enable the gradual scaling of local UDT applications, knowledge transfer and consistency in urban data management.

To translate these opportunities into practice, the paper proposes a phased national approach based on targeted municipal pilot projects, open data, open APIs, automated data-integration processes and common standards such as CityGML. A nationally adapted semantic extension, such as a Hellenic Planning Application Domain Extension, could further support the consistent representation of planning and regulatory information. Rather than creating a single Digital Twin for the entire country, the proposed framework enables interoperable municipal UDTs that can gradually connect through a shared architecture. Such an approach can strengthen urban resilience, mobility planning, environmental monitoring, infrastructure management and cross-sector collaboration, while creating a scalable pathway toward more sustainable and data-driven Greek cities. For planners and local authorities, the framework provides a practical roadmap for sequencing actions and progressively scaling UDT implementation.

Key words: Urban Digital Twins, Greece, national framework, interoperability, digital governance, smart cities, municipalities

TRADITIONAL URBAN FORM AND ITS INFLUENCE ON ENERGY AND MICROCLIMATIC CONDITIONS IN GREEK HERITAGE URBAN CORES

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Abstract

Historic urban cores differ significantly in form and geometry from contemporary cities. Their organic urban structures have evolved in close response to the natural landscape, local topography, and climatic conditions. In many cases, these traditional urban environments demonstrate resource-efficient approaches to urban development, incorporating strategies for adaptation to local climate and land morphology. Their spatial organization, street configuration, and building typologies often reflect careful consideration of orientation, solar access, wind exposure, and daylight availability.

This paper investigates the characteristics of traditional Greek urban form within small historic urban districts and examines their influence on energy performance and microclimatic conditions. Particular attention is given to the relationship between urban morphology, building typologies, and the climatic conditions of open urban spaces. The study focuses on two representative historic urban districts in the Region of Eastern Macedonia and Thrace, Greece: the Old Town of Xanthi and the Panagia district of Kavala. These areas are characterized by distinctive traditional urban tissues that have developed in close relationship with their local topography and environmental conditions. Through the analysis of their urban form and building characteristics, the study aims to quantify the relationship between traditional urban morphology and the energy and microclimatic performance of the urban tissue. The findings contribute to a better understanding of the environmental qualities embedded in traditional Greek urban form and highlight their potential to inform climate-responsive and energy-conscious approaches to the regeneration and design of contemporary urban environments.

Keywords: Historic urban districts; Climate-responsive urban design; Microclimate; Urban heritage

SOLAR ACCESS AND URBAN MORPHOLOGY IN THE HISTORIC CORE OF XANTHI

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Abstract

Solar access is an important component of environmental quality and thermal and visual comfort in historic urban environments. Solar radiation can contribute to passive solar heat gains and reduced heating demand, improve daylight availability, and influence moisture conditions in buildings. In outdoor spaces, the distribution of sunlight and shade strongly affects thermal and visual comfort and the overall quality of urban spaces.

Historic urban cores are typically characterized by high building density, compact layouts, and narrow streets, creating urban canyons that can significantly restrict direct solar exposure and produce diverse patterns of sunlight and shade. Therefore, the morphology and orientation of the urban fabric play a key role in determining solar availability in both open spaces and buildings.

This study investigates solar availability in the historic urban core of the Old Town of Xanthi, Greece, focusing on incident solar radiation on building surfaces and outdoor spaces. It examines the relationship between solar exposure and key morphological parameters, including street and building orientation, building density, street width-to-height ratios, and urban plot proportions. The study aims to identify how the spatial configuration of the historic fabric influences solar access and its implications for outdoor thermal and visual comfort and indoor environmental conditions.

Keywords: solar radiation; urban morphology; outdoor thermal comfort; visual comfort; historic cities

CLIMATE SECURITY AFTER THE RETURN OF WAR: EUROPEAN ARMED FORCES AND NORMATIVE FRAGILITY

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Abstract

Climate change is now recognised by most European governments, the European Union (EU) and NATO as a security concern affecting military readiness, infrastructure, interoperability, and the wider strategic environment of a turbulent international society. Yet shared recognition has not produced a uniform European defence response. This paper examines how the United Kingdom and selected European states construct and operationalise climate security, and what their divergent approaches reveal about collective adaptation under conditions of international self-help. It combines qualitative discourse analysis with a structured comparison of national defence strategies and NATO and EU policy documents published between 2020 and 2026. Particular attention is paid to four linked areas: operational adaptation, energy and supply-chain security, military decarbonisation, and nuclear risk.

The paper argues that climate-security discourse has become more institutionalised since 2020 but remains normatively fragile. Particular attention is given to the return of large-scale war in Europe, energy insecurity, rapid rearmament and growing pressure on defence industries and military resources. The paper finds that the original concerns remain relevant: climate change continues to multiply existing risks, place additional demands on armed forces and create practical incentives for cooperation. However, the current strategic environment has altered how these challenges are understood. Climate adaptation is increasingly translated into the languages of national resilience, strategic autonomy, force protection, energy security and operational advantage. Although climate-security cooperation has become more institutionally developed since 2020, its implementation remains uneven and constrained by the self-help dynamics of the international system. The paper provides readers with an updated assessment of European military adaptation and a theoretically informed explanation of why recognition of a shared, cross-border threat can coexist with divergent national priorities. It concludes that climate change can encourage interoperability, but cannot by itself overcome the political and normative fragility of European defence cooperation.

Keywords: Climate security; securitization; self-help; nuclear energy; European defence; normative security

THE ROLE OF ARTIFICIAL INTELLIGENCE IN THE DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATION FOR SUSTAINABLE DEVELOPMENT: AN EMPIRICAL STUDY OF GREEK CIVIL SERVANTS' PERCEPTIONS

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Abstract

The digital transformation of public administration underpins public-sector modernization and sustainable development. Artificial Intelligence (AI) may create opportunities to improve the effectiveness, efficiency, transparency, and accountability of public administration. In addition, digital transformation may foster the provision of faster and higher quality public services This study aims to provide insight on how AI may affect the modernization of public systems and the advancement of sustainable development. This was done via empirical quantitative research of the perceptions of Greek civil servants A total of 1556 questionnaires were collected via a home-made instrument of closed-ended questions in the period between March-June 2025. The results indicated a moderately positive perception regarding the role of AI for promoting sustainability and the achievement of Sustainable Development Goals (SDGs). The participants acknowledged the relatively high role of certain factors which affect the collaboration between the public and private sector for the exploitation of AI for SDG advancement. These factors include the lack of funding, possible differences in goals and priorities, the limited training of public employees and the level of training technological readiness of the public sector. Civil servants place particular emphasis on improving cooperation among the public and private sectors and academic institutions, addressing social inequalities, creating smart and sustainable cities, promoting employment as well as equal access to quality education. At the same time, participants express concerns regarding privacy, social inequalities, algorithmic bias, and the intentional harmful use of AI, and expressed a low acceptance and trust level toward AI among citizens.

The findings indicate that for AI to have a positive impact on sustainable development, it requires appropriate governance, human oversight, promotion of transparency, protection of human rights and digital equity of the workforce. The results of this research can be used as a basis for developing policies that will help the use of AI in the digital transformation of public administration in order to promote sustainable development and fulfill the Sustainable Development Goals more effectively.

Key words: Artificial intelligence, Confirmatory factor analysis. Digital transformation, Exploratory factor analysis, Public administration, Public sector governance, Sustainable development goals.

FROM ARISTOTELIAN EUDAIMONIA TO THE SUSTAINABLE CITIZEN: ETHICAL VIRTUES AND THIRD-GENERATION PATTERN LANGUAGES FOR SUSTAINABLE URBAN COEXISTENCE

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Abstract

The transition towards sustainable cities and urban reconstruction is usually framed in technocratic and environmental terms, such as energy efficiency, smart infrastructure and measurable indicators, while its human and ethical dimension remains underexplored. Technical solutions alone cannot secure long-term civic commitment and may even generate new inequalities, such as green gentrification. This paper argues that the sustainable city presupposes a sustainable citizen and reframes this notion by bridging Aristotelian virtue ethics with contemporary theories of well-being.

Methodologically, the paper combines a close reading of the *Nicomachean Ethics* and the *Politics* with a comparative review of contemporary well-being theories (Ryff's psychological well-being model, Self-Determination Theory, the Capabilities Approach) and of Environmental Virtue Ethics. Building on the distinction between hedonic and eudaimonic well-being, it shows that virtues such as the mean (*mesotes*), practical wisdom (*phronesis*), justice, temperance and civic friendship are not merely private traits but foundations of ecological responsibility and of social coexistence in a city that exists for the sake of living well (*eu zen*).

To translate these ethical concepts into applicable practice, the paper proposes third-generation Pattern Languages (Pattern Language 3.0). Whereas the first generation (C. Alexander) addressed physical space and the second software design, the third, developed by T. Iba and colleagues, focuses on human action, collaboration and social innovation. The main outcome is a conceptual framework that links five Aristotelian virtues to proposed socio-spatial patterns of urban coexistence, together with a four-stage participatory process: bottom-up pattern mining, dialogue and co-design workshops, tactical urbanism prototyping, and the institutionalisation of urban commons. The framework offers planners, municipalities and communities a shared vocabulary for designing public space in which ethical cultivation and spatial design reinforce each other, turning citizens into active co-creators of a sustainable, resilient and just city.

Key words: Aristotelian eudaimonia, sustainable citizen, eudaimonic well-being, Pattern Language 3.0, virtue ethics, sustainable urban coexistence, public space

SUSTAINABLE DEVELOPMENT VERSUS CIVILIZATION COLLAPSE: A CONCEPTUAL INTERDISCIPLINARY APPROACH

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Abstract

We often view economic and social development as a positive force. But how do we measure what is actually beneficial? The 1987 Brundtland Report, Our Common Future, offers a clear benchmark. According to the report, development is truly positive when it "meets the needs of the present without compromising the ability of future generations to meet their own needs."

While interpretations vary, the core of sustainable development is long-term survival. Realizing this goal demands a fundamental shift in how we perceive societal priorities and the economic framework within which we exist.

In today's human society, people's needs have become more complex. Modern survival now relies heavily on societal infrastructure, requiring access to shelter, healthcare, and reliable energy systems alongside our basic biological necessities.

Humanity's soaring demand for resources is outpacing nature's capacity to recover. Despite conservation efforts, population growth continues to accelerate deforestation, water scarcity, soil degradation, and the consumption of other raw materials and energy sources.

Expert calculations warn that depleting our fossil fuel and mineral reserves could trigger a forced socio-economic shift by the middle or late 21st century. This transformation could span 300 to 500 years, moving global society from modern civilization to a simpler, post-modern era. The resulting world would feature decentralized social structures, basic technology, a dramatically smaller global population, and a restored natural environment.

Over the past few decades, science fiction has increasingly functioned as a propaganda that distracts people from our planet's ecological crisis. Instead of addressing human-caused environmental destruction, these stories offer a distracting hope: that humanity can simply migrate to another planet once Earth becomes uninhabitable.

We must make preserving Earth's ecosystems our absolute priority. It is the only planet in the known universe that can sustain us. Earth gave rise to human society, and it is the only home that can keep us alive for hundreds of millions of years in the future.

Key words: long-term survival, socio-economic shift, interdisciplinary approach

BEYOND ENGAGEMENT: EVALUATING COMMUNICATION STRATEGIES FOR CULTURAL SUSTAINABILITY

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Abstract

Audience engagement is commonly used to compare communication strategies in cultural organizations. Yet the strategy generating the strongest immediate response may not best support retained understanding or subsequent cultural participation. This creates a decision problem when engagement is used to guide strategy selection for objectives centred on learning, retention, or participation.

This conceptual paper addresses this problem through a critical integrative literature review and theory adaptation. It connects research on cultural communication, audience engagement, and cultural learning with scholarship on proxy and surrogate outcomes. It distinguishes individual-level associations from comparative effects of communication interventions. More engaged audiences may display greater knowledge, but this does not establish that a strategy increasing engagement will also improve learning or participation.

The paper develops a framework identifying three conditions under which engagement-based evaluations may diverge from goal-relevant outcomes. Divergence may occur when engagement is generated by features weakly related to cultural interpretation, when strategies differ in the persistence of understanding, or when opportunities to translate interest or learning into cultural participation vary across local contexts.

The framework does not assume that engagement is either valid or misleading. Instead, it examines whether alternative strategies are ranked consistently across immediate engagement and delayed, goal-relevant outcomes. Its theoretical contribution is to apply and adapt proxy-validity reasoning to cultural communication and clarify when apparent communication success may provide an insufficient basis for strategy selection. Its practical contribution is an evaluation logic requiring cultural objectives to be defined before strategies are compared.

Applicable to museums, arts organizations, and local cultural programmes, the framework provides a basis for experimental and longitudinal research. Cultural sustainability is treated as a broader collective process to which communication may contribute, rather than as an outcome demonstrated by engagement or learning alone.

Keywords: cultural communication; cultural sustainability; audience engagement; communication evaluation; cultural learning; cultural participation

CAVE-TEMPLES IN AKRAIFNO IN BOEOTIA AND THEIR PILGRIMATE ROUTE

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Abstract

This work presents a pilgrimage route of local scope, but of great religious, spiritual, historical, archaeological and cultural value. In the wider area of research, archaeological finds have been found that prove pilgrimage activities from the Late Neolithic I, to the present day. The period of the route was not continuous, like its pilgrimage reference point was different. This is because the religious beliefs of the people of the region, at different historical times, they were different. In sum, the total number of years preceding the journey to date is approximately 4000 years. The pilgrimage route proposed in this research, highlights both ancient and modern elements of religious, archaeological, historical and cultural interest. These landmarks of this particular path will give pilgrims the spirituality and well-being they seek, and for the local community in the region, it will be a new beginning for the sustainable development of their place.

Keywords: Religious tourism, pilgrimage route, Cultural heritage, Sustainable Development.

Session:

SUSTAINABLE TOURISM, SUSTAINABLE LOCAL DEVELOPMENT AND NATURAL DISASTERS

THE VISA EXPRESS SCHEME AS A TOOL FOR CROSS-BORDER TOURISM DEVELOPMENT: EVIDENCE FROM CHIOS ISLAND

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This study examines the Visa Express scheme as a tool for facilitating cross-border tourism between Turkey and Chios, focusing on whether the increase in Turkish visitor arrivals following its reinstatement in May 2024 represents a distinct policy effect or the continuation of a pre-existing market trend.

The study contributes to the discussion on border mobility, island accessibility and sustainable regional tourism development by examining visa facilitation within the wider system of maritime connectivity and destination capacity. A quantitative, non-experimental longitudinal design is employed, using exclusively official monthly administrative data from the Chios Regional Unit on arrivals of Turkish nationals through the Chios port of entry from January 2022 to June 2026.

The analysis comprises 54 monthly observations (arrivals of Turkish nationals in Chios during the period January 2022–June 2026) and combines descriptive statistics, annual and like-for-like first-half comparisons, pre/post-policy comparisons and exploratory linear regression models controlling for monthly seasonality and linear time trend. Arrivals increased from 53.855 in 2022 to 92.263 in 2023 and 129.395 in 2024, before stabilising at 131.316 in 2025. The first half of 2026 recorded 50.791 arrivals, 14.7% above the corresponding period of 2025. Although the post-May 2024 period is associated with substantially higher monthly traffic, the Visa Express coefficient becomes statistically insignificant when the pre-existing upward trend is controlled.

The findings therefore suggest that Visa Express should not be interpreted as the sole cause of increased arrivals but rather as a mechanism facilitating and institutionally reinforcing an already expanding cross-border tourism market. For policymakers and destination managers the results underline that visa facilitation can generate more sustainable regional benefits when combined with reliable ferry connectivity, adequate port and border capacity, reduced seasonality and strategies aimed at increasing length of stay and local expenditure.

Key words: Visa Express, cross-border tourism, Chios, visa policy, ferry connectivity, sustainable regional development, Eastern Aegean.

THERMAL TOURISM AS A DRIVER OF SUSTAINABLE TOURISM DEVELOPMENT: THE CASE OF IKARIA. GREECE

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Abstract

Thermal tourism refers to tourism activities focused on the use of natural thermal and mineral waters for therapeutic, preventive, recreational, and wellness purposes. Beyond its health and well-being dimension, thermal tourism can contribute to the sustainable development of destinations by diversifying the tourism product, reducing dependence on seasonal mass tourism, and attracting visitors throughout the year. The development of thermal destinations can also support local employment, stimulate investment in local infrastructure and services, and strengthen the economic viability of rural and peripheral areas.

In this context, the aim of this paper is to explore the level of thermal tourism development in Ikaria, the challenges, opportunities and future development prospects, as well as the its role in the sustainable development of the island. Ikaria was selected as a case study as is well-known for its thermal springs, while thermalism is an important part of the island's natural and cultural heritage. In order to meet this aim, qualitative research using semi-structured in-depth interviews with twenty-five key informants was conducted.

The participants' responses show that Ikaria has a significant number of springs that can form the basis for the development of thermal tourism. Thermal tourism is recognized as an alternative form of tourism that can offer significant benefits to the destination and local communities. It can promote the sustainable use of natural resources, encourage the preservation of thermal springs and their surrounding environments, and enhance local cultural heritage. Furthermore, it can extend the tourist season or even create new demand, while it can be combined with other alternative forms of tourism. However, despite the significant benefits that seem to accompany thermal tourism, its development in Ikaria seems to face pathogens and problems, such as inadequate infrastructure, lack of collaborations, absence of an organized strategic plan, insufficient promotion, problematic ferry and air connections, etc.

Key words: Thermal tourism, thermalism, sustainable tourism development, alternative forms of tourism, Ikaria

URBAN RESILIENCE TO CRUISE-SHIP EMERGENCIES IN SMALL ISLAND PORTS: AN INTEGRATED MARITIME, FIRE AND ENVIRONMENTAL RISK ASSESSMENT OF ARGOSTOLI BAY, KEFALONIA

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Abstract

The development of cruise tourism constitutes an important component of economic and tourism activity in island regions. At the same time, it increases population concentration, operational complexity, and exposure to hazards in small urban ports. This paper examines the resilience of a small island port-city to a major cruise-ship emergency, using the port and bay of Argostoli, Kefalonia, Greece, as a case study.

The study is based on the operational characteristics of Argostoli Port and on scenario-based assessment under conditions of increased operational pressure. The main scenario considers a major fire occurring on a cruise ship berthed in the port, combined with the simultaneous presence of one or more additional cruise ships at anchorage. The analysis adopts an interdisciplinary approach integrating maritime and port safety, firefighting and civil protection, and environmental risk management.

The maritime dimension focuses on the ship–port–city interface, berth and anchorage management, passenger flows, port accessibility, disruption and restoration of port operations, and potential impacts on other vessels and port activities. The emergency-response dimension examines early detection and notification, access for emergency services, firefighting, rescue operations, mass evacuation, casualty management, and inter-agency coordination. The environmental dimension addresses potential impacts on air quality and the marine and coastal environment, including possible fuel releases, smoke emissions, and the transport of pollutants through firefighting runoff.

Based on the assessment of the scenarios and the interdependencies between people, vessels, port infrastructure, the urban environment, and natural systems, the paper proposes an **Integrated Cruise-Port Emergency Resilience Framework (ICERF)**. The framework is structured around five functions: prevention, early detection and warning, emergency response, protection of people and the environment, and recovery. The proposed approach aims to strengthen preparedness, cross-sectoral coordination, environmental protection, and the rapid restoration of port and urban functions. It may provide a transferable framework for assessing resilience in other small coastal and island ports exposed to increasing cruise-ship activity.

Keywords: Cruise tourism, Urban resilience, Island ports, Emergency management, Firefighting, Environmental risk, Civil protection

FROM ADOPTION INTENTION TO INVESTMENT READINESS: CLEAN PROPULSION TECHNOLOGIES IN GREEK SHIPPING

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Abstract
The decarbonisation of maritime transport is creating new challenges and investment opportunities for shipping companies worldwide. As environmental regulations become increasingly demanding, the transition towards clean propulsion technologies is gaining importance in strategic fleet investment decisions. For Greek shipping, however, adopting greener technologies involves balancing environmental commitments and regulatory compliance against substantial investment costs, technological uncertainty and limitations in alternative fuel infrastructure.

This study investigates the factors influencing Greek shipping companies' intention to adopt clean propulsion technologies and explores whether this intention translates into investment readiness. Building on technology-adoption literature and previous qualitative research involving Greek shipping executives, the study develops a quantitative framework focusing on five key determinants: regulatory pressure, perceived benefits, technological uncertainty, investment costs and financial risk, and infrastructure availability. Data are intended to be collected through a structured questionnaire addressed to decision-makers involved in fleet management, technical operations and investment planning.

The anticipated findings suggest that regulatory requirements and the perceived long-term benefits of cleaner propulsion technologies are important drivers of adoption intention. Environmental performance, compliance with evolving international standards and the potential to strengthen competitiveness are expected to encourage investment interest. Nevertheless, high capital expenditure, uncertainty regarding the maturity and future competitiveness of alternative propulsion technologies, and insufficient fuel availability and supporting infrastructure are expected to remain significant barriers. The study also anticipates a distinction between companies' willingness to adopt clean technologies and their readiness to commit financial resources, reflecting the practical challenges of converting strategic objectives into investment decisions.

By examining both adoption intention and investment readiness, this research seeks to provide a more comprehensive understanding of the transition towards greener Greek shipping. Its contribution lies in identifying the factors that may support or hinder investment decisions and informing policymakers, shipping companies, financiers and maritime infrastructure stakeholders seeking to accelerate the adoption of sustainable propulsion solutions.

Keywords: Greek shipping; clean propulsion technologies; adoption intention; investment readiness; green ships; technological uncertainty; sustainable maritime transport.

ENVIRONMENT PRESSURES, NATURAL DISASTERS, AND GROWTH PATTERNS IN THE MENA REGION: EMPIRICAL ANALYSIS, 1990-2021

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Abstract

Environmental pressures and natural disasters related to climate change pose an increasingly significant challenge to economic performance, especially in environmentally sensitive economies. In this paper, the link between environmental pressures, natural disasters, and economic performance is analyzed using data on eleven countries in the Middle East and North Africa for the period 1990-2021. Economic performance is defined as the natural logarithm of GDP in constant US dollars (2015). Environmental pressures are captured by water stress, PM2.5 exposure, and temperature change, while natural disaster impact is measured through the share of the population affected relative to the total population and adjusted economic losses in percentage of GDP. The analysis considers individual vs. combined environmental pressures and the human impact vs. the economic impact of natural disasters. Two way fixed effect panel regressions with Driscoll Kraay standard errors are applied to account for country specific heterogeneity, time effects, heteroskedasticity, autocorrelation, and cross section dependence. The results reveal that water stress poses the strongest constraint on economic performance. Specifically, the water stress coefficient is negative and statistically significant in both individual and combined environmental models. On the other hand, temperature change is negative and weakly statistically significant as an individual variable and loses statistical significance in the combined environmental pressures model, while PM2.5 exposure remains negative but not statistically significant. As far as natural disasters are concerned, the affected population share is negative and statistically significant when entered alone but becomes statistically insignificant after accounting for economic damages. In contrast, adjusted disaster damages in percentage of GDP are found to be negative and statistically significant in the combined disaster model. Foreign trade openness, population density, and energy consumption are positive determinants of GDP, while foreign direct investment is not statistically significant. The results highlight the economic significance of water security, natural disaster reduction, resilient infrastructure, and adaptation policy in the region.

Key words: Environmental pressure; Natural Disasters; Economic Performance; MENA Region

BEYOND DISASTER COUNTS: MEASURING DISASTER SEVERITY AND ITS ASSOCIATION WITH AGRICULTURAL PRODUCTION

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Abstract

Accurately measuring the severity of disasters remains a major challenge in empirical research on agriculture and climate risk. Existing studies typically rely on event counts, binary indicators, or single hazard measures, which fail to capture the multidimensional nature of disaster impacts. We address this limitation by developing a composite Disaster Severity Index based on Principal Component Analysis that integrates human and economic losses across multiple natural hazards. Thus, to provide a more comprehensive characterization of disaster impacts by integrating several components, we construct a composite Disaster Severity Index (DSI) that combines human and economic losses across multiple natural hazards. To do that, we analyze the relationship between disaster severity (as measured by DSI) and agricultural production across the top 20 agricultural-producing countries over 2000-2020. By accounting for multiple factors that affect disaster severity, our results show that a one-unit increase in standardized DSI is associated with a 7.9% decline in agricultural output, and the results are consistent with greater vulnerability among developing countries.

Keywords: Disaster Risk, Disaster Severity Index, Agricultural production, Food Security

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ENTREPRENEURSHIP, SUSTAINABLE DEVELOPMENT AND INTERNATIONALIZATION: ASYMMETRIC OUTCOMES IN A PERIPHERAL EU ECONOMY

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Abstract

In the current landscape of International Business (IB), data is constantly changing due to the complexity of global market operations, rising geopolitical and geo-economic risks, and the challenges of sustainable development, such as climate change, regional regulatory variations and increasing pressure from investors, consumers, and stakeholders for sustainability commitment. This paper explores the determinants of internationalization, focusing on the asymmetric relationship between outward foreign direct investment (OFDI) and exports and their relationship with sustainable practices and entrepreneurship in Greece, a small Mediterranean country dominated by SMEs. In recent years, there has been increasing interest in understanding the reasons behind firms' engagement with ESG criteria. Sustainability and internationalization are not two separate paths – as companies with an international presence are expected to grow globally and act responsibly. In order to confirm the positive impact of sustainable principles in extroversion and to assess whether this also applies to companies based in Greece, where academic research on the relationship between internalization and ESG is almost absent, we examine the performance of companies across the three core pillars of sustainable development Environmental, Social, Governance, while also including the Economic Pillar. Results highlight that ESG functions as a mode-contingent set of capabilities rather than a uniform ownership advantage. For Greek firms, exports are strengthened by governance transparency, financial stability, and selected environmental initiatives, whereas outward FDI is mainly shaped by practices that build social legitimacy. These findings speak to the wider agenda of sustainable development in peripheral, SME-dominated EU economies, where export activity and outward investment are the key channels through which sustainability commitments feed into national economic development and international competitiveness.

Keywords: Internalization, Sustainable Development, Entrepreneurship, Exports, OFDI

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The authors declare no conflict of interest.

IS THE INFRASTRACTURE DEVELOPMENT INHERENTLY GREEN? EVIDENCE FROM THE MENA REGION

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Abstract

This study empirically examines the impact of infrastructure development on environmental performance across ten Middle East and North Africa (MENA) countries from 2000 to 2024. This aspect was acknowledged by the existing literature but few of them focused on this environmental dimension in the MENA region. Acknowledging that atmospheric and holistic ecological stresses differ, environmental performance is evaluated using two separate dependent variables: carbon dioxide emissions and the load capacity factor (LCF). The study implements a robust econometric framework to ensure structural and distributional validity. First, Pooled OLS and Fixed Effects (FE) models establish baseline average relationships across countries. To address systemic panel data diagnostic vulnerabilities, specifically cross-sectional dependence, heteroskedasticity, and serial correlation, the analysis applies Driscoll-Kraay standard error estimates, and several other techniques are used to yield robust, unbiased inference. The empirical findings reveal that infrastructure expansion raised the level of emissions and caused lower LCF due to fossil-fuel-reliant construction and energy sectors. This was evident especially for the digital infrastructure measured in terms of mobile cellular subscriptions and sanitation services. The only infrastructure-related development measurements that caused a decline in the level of emissions, thus an improvement in LCF, were health expenditure as % of GDP and air transport carried departures. These findings underscore the need for a structural transition from carbon-intensive frameworks to green infrastructure systems. Policymakers must eliminate fossil fuel subsidies, integrate passive energy cooling codes into infrastructure grids, and issue sovereign green bonds to preserve the region's fragile biocapacity.

Keywords: Infrastructure development; Environmental degradation; Ecological footprint; Technological innovation; MENA region

KEY INDICATORS FOR MONITORING URBAN CIRCULAR BIOECONOMY IN CITIES OF THE AUTONOMOUS PROVINCE OF VOJVODINA

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Abstract

Urban circular bioeconomy represents an important approach to sustainable urban development, contributing to more efficient use of biological resources, reduction of waste generation and improved management of locally available biomass and bio-waste streams. In this context, the establishment of appropriate indicators is necessary for assessing existing conditions, identifying development potential and monitoring progress towards circular bioeconomy at the local level.

The present paper investigates the potential for urban circular bioeconomy development in selected cities of the Autonomous Province of Vojvodina, Serbia. The analysis includes Novi Sad, Subotica, Zrenjanin, Pančevo, Sombor, Kikinda, Sremska Mitrovica and Vršac. The main objective of the research is to propose a set of key indicators that can be used for comparative monitoring of available biological resources, existing infrastructure and opportunities for their circular utilisation.

For the purposes of the research, twenty indicators were defined, covering demographic and territorial characteristics, municipal waste generation, bio-waste availability, agricultural biomass, wastewater sludge, separate bio-waste collection, composting and biogas infrastructure, as well as the overall potential for circular bioeconomy development. The analysis was based on available official statistical data, local waste-management plans, reports of public utility companies, environmental and agricultural databases, spatial and urban planning documents, and author calculations. Where direct data were unavailable, working estimates were applied.

Key words: urban circular bioeconomy, circular bioeconomy, bio-waste, indicators, resource efficiency, Vojvodina

FROM DESIGN GUIDELINESS TO SIMULATION A SIMULATION BASELINE AND MOP/POM-DRIVEN SCENARIOS FOR AUTONOMOUS VEHICLES IN PATRAS, GREECE

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Abstract

Autonomous and shared autonomous vehicles (AVs/SAVs) are expected to change both traffic conditions and the use of urban space, especially parking, the curb and the street as public space. Assessing these changes credibly first requires a realistic model of the current situation.

This paper presents a microscopic traffic simulation model in SUMO of the current traffic state in the centre of Patras. The study area is a closed network of junctions with measured flows. The model uses cordon traffic counts, parking-turnover data from the municipal Sustainable Urban Mobility Plan (SUMP) and an OpenStreetMap-derived road network. We describe how the network was built, how demand was generated, how the sampled counts were extended to a 24-hour profile, and how the model was calibrated against the observed inflow–outflow balances and parking accumulation.

AV impacts are deeply interconnected: the same technology can produce radically different urban outcomes depending on the deployment model and the design context. The scenarios are therefore grounded in the MOP/POM tool, developed at an earlier stage of this research. The tool converts descriptive statements from the literature and from other studies' results into normative design guidelines. These guidelines are used to define a set of scenarios that vary AV and SAV penetration rates and operating models.

We propose a set of indicators that links traffic measures (vehicle-kilometres travelled, delay, link loads) to spatial measures (parking demand, curb occupancy, reclaimable street space). This lets changes in traffic and in urban space be analysed as functions of one another. The framework provides the basis for comparing the scenarios and for linking the model to a city-scale digital twin in future work.

Keywords: SUMO, autonomous vehicles, shared autonomous vehicles, MOP/POM, urban space, parking, traffic simulation, Patras

POSSIBLE BARRIERS TO BASIC SOCIAL SERVICES: AN EXPLORATORY ADMINISTRATIVE BURDEN PERSPECTIVE FROM BẮC NINH

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Abstract

Rapidly industrializing provinces can expand the supply of basic social services, yet some eligible residents may still be unable to use them. This exploratory paper considers possible reasons, using social housing and education services in Bắc Ninh, Vietnam, as an illustrative case. We outline a conceptual framework that brings together the administrative burden perspective (learning, compliance, and psychological costs), behavioural-economic accounts of take-up and information frictions, and social-psychological accounts of procedural justice, trust, and self-efficacy. Psychological cost and perceived approval probability are discussed as possible links between these approaches. As descriptive indications only, we draw on a secondary provincial survey report and selected indicators from the Provincial Governance and Public Administration Performance Index (PAPI). These sources appear to suggest that some respondents are unaware of housing credit and social housing policies, that approval procedures are often described as difficult, and that government policy information is not widely seen as useful or trustworthy, even where it is easy to obtain. On this basis, we put forward tentative propositions on how information, procedural, and psychological costs may interact, and on how mismatches between citizens' information channels and official channels might raise learning costs. Because the evidence is perceptual, secondary, and drawn from small subgroups, the findings should be read as preliminary and cannot support causal claims. We outline a two-step research agenda combining validated measures with vignette experiments.

Key words: administrative burden; take-up of social benefits; basic social services; social housing; procedural justice; Vietnam

The 4th OPEN-AIR CITIES International Conference, organized by Open-Air Cities, HAROKOPIO UNIVERSITY of Athens - Postgraduate Programme "Sustainable Development", Syros Institute and in co-organization: Municipality of Nea Smyrni.

The conference aims to present and disseminate research results related to the Sustainable Development of cities and regions at a global level.

The main subject is the presentation of relevant research in the field of Sustainable Development.

The conference is organized and structured on the four main pillars of Sustainable Development, which in fact are also the main pillars of Urban and Regional Development: Environment, Economy, Society and Culture. Each of these pillars includes its subcategories, which are detailed through the thematic sections related to the 17 Global Goals of Sustainable Development.

The conference brings together many distinguished researchers of Local and Regional Sustainable Development and Urban Reconstruction from many countries all over the world. Participants have the opportunity to present new research, exchange information, and discuss current issues.

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