



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

8th Annual International Conference on
Transportation

30-31 May & 1-2 June 2022, Athens, Greece

Edited by
Virginia Sisiopiku & Olga Gkounta

2022

8th Annual International
Conference on Transportation
30-31 May & 1-2 June 2022,
Athens, Greece

Edited by Virginia Sisiopiku &
Olga Gkounta

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Preface

This book includes the abstracts of all the papers presented at the *8th Annual International Conference on Transportation* (30-31 May & 1-2 June 2022), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications only after a blind peer review process.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which they can discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world can meet to exchange ideas on their research and consider the future developments of their fields of study.

To facilitate the communication, a new references section includes all the abstract books published as part of this conference (Table 1). I invite the readers to access these abstract books –these are available for free– and compare how the themes of the conference have evolved over the years. According to ATINER's mission, the presenters in these conferences are coming from many different countries, presenting various topics.

Table 1. *Publication of Books of Abstracts of Proceedings, 2015-2022*

Year	Papers	Countries	References
2022	42	20	Sisiopiku V and Gkounta O (2022)
2021	26	13	Papanikos (2021)
2020	24	16	Papanikos (2020)
2019	27	18	Papanikos (2019)
2018	29	18	Papanikos (2018)
2017	36	17	Papanikos (2017)
2016	36	21	Papanikos (2016)
2015	26	15	Papanikos (2015)

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world can regularly meet to discuss the developments of their

disciplines and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published over 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed after the Editors' Note.

Gregory T. Papanikos
President

Editors' Note

These abstracts provide a vital means to the dissemination of scholarly inquiry in the field of Transportation. The breadth and depth of research approaches and topics represented in this book underscores the diversity of the conference.

ATINER's mission is to bring together academics from all corners of the world in order to engage with each other, brainstorm, exchange ideas, be inspired by one another, and once they are back in their institutions and countries to implement what they have acquired. The 8th Annual International Conference on Transportation accomplished this goal by bringing together academics and scholars from 20 different countries (Australia, Austria, Brazil, Canada, China, Croatia, Cyprus, Czech Republic, France, Germany, India, Italy, Japan, Lithuania, Poland, Romania, South Africa, Spain, UK, and USA), which brought in the conference the perspectives of many different country approaches and realities in the field.

Publishing this book can help that spirit of engaged scholarship continue into the future. With our joint efforts, the next editions of this conference will be even better. We hope that this abstract book as a whole will be both of interest and of value to the reading audience.

Virginia Sisiopiku & Olga Gkounta
Editors

8th Annual International Conference on Transportation, 30-31 May & 1-2 June 2022, Athens, Greece

Organizing & Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Virginia Sisiopiku, Head, Transportation Engineering Unit, ATINER, & Associate Professor, The University of Alabama at Birmingham, USA.
3. Nicholas N. Patricios, Vice President of Strategic Planning & Analysis, ATINER and Professor & Dean Emeritus, School of Architecture, University of Miami, USA.

FINAL CONFERENCE PROGRAM

8th Annual International Conference on Transportation, 30-31 May & 1-2 June 2022, Athens, Greece

PROGRAM

Monday 30 May 2022

09.00-09.30

Registration

09:30-10:00

Opening and Welcoming Remarks:

- **Gregory T. Papanikos**, President, ATINER
 - **Nicholas N. Patricios**, Vice President of Strategic Planning & Analysis, ATINER, Dean Emeritus & Professor, School of Architecture, University of Miami, USA.
 - **Clara Germana Gonçalves**, Head, Architecture Unit, ATINER & Researcher, CITAD (Centro de Investigação em Território, Arquitectura e Design), Lusíada University, Portugal.
-

10:00-12:00 TIME SLOT 1 - MORNING PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Roman Klementsitz**, Senior Scientist, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria.
Title: In Depth Analysis of Trip Chains and Tours Based on the National Travel Survey Database in Austria. (Monday)
 2. **Frane Tadic**, Researcher, University of Rijeka, Croatia.
Sinisa Vilke, Head, Department of Technology and Organization in Transport, University of Rijeka, Croatia.
Title: Development of Urban Traffic Management in the City of Rijeka.
 3. **Gaurab Das Mahapatra**, PhD Scholar, Hokkaido University, Japan.
Title: Role of Cognition in Pedestrian-Level Universal Mobility: Case of Central Kolkata, India.
 4. **Martin Bárta**, PhD Student, Palacký University Olomouc, Czech Republic.
Title: Analyze of Public Transport Accessibility in Novi Sad Based on Population Address Points.
 5. **Javier Cubas**, Associate Professor, Polytechnic University of Madrid, Spain.
Title: UPMQuBe: An Academic/Educational PocketQube Proposal for the EU2Space Challenge.
-

12:00-13:30 TIME SLOT 2 - NOON PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Jelena Culin**, Associate Professor, University of Zadar, Croatia.
Title: Cruise Ships as a Source of Pollution of the Adriatic Sea by Pharmaceuticals and Personal Care Products.

2. **Leila Khodabakhsh**, PhD Candidate, Catholic University of Eichstätt-Ingolstadt, Germany.
Title: The Discursive and Institutional Scalar Transformation of the State: (Re)Production and (Re)Configuration of the Hydro-social Territories in Iran.
 3. **Tahmid Rouf**, PhD Candidate, York University, Canada.
Title: Lessons about our World from Re-Migration Among the Children of Immigrants.
-

13:30-15:00

Lunch

15:00-16:30 TIME SLOT 3 – AFTERNOON PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Lingjin Wang**, PhD Student, Southeast University, China.
Title: A Research on Local Response and Optimization Strategies of International Student Settlement in China on Globalization.
 2. **Qian Zhang**, PhD Candidate, Southeast University, China.
Title: Location Choices of Internal Migrants in Yangtze River Urban Agglomeration, China.
 3. **Kamna Karan**, Assistant Director, Delhi Development Authority, India.
Title: Smart City Planning and Heritage – An IoT based Toolkit Framework.
 4. **Sisi Xia**, PhD Student, National University of Singapore, Singapore and Southeast University, China.
Title: A Coupling Study of Public Service Facilities and Land Price in Wuxi City Based on Big Data Perspective.
-

16:30-18:00 TIME SLOT 4 – AFTERNOON PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Foteini Papadopoulou**, PhD Student, University of Hertfordshire, UK.
Title: Safe Houses: Design Principles, Potentials and Limitations. An Analysis through Data-Driven Approaches.
 2. **Loreta Šutinienė**, PhD Student, Vilnius University, Lithuania.
Title: Investigation of Reading Geographical Educational Maps Using Eye Movement Analysis.
 3. **Ann Borst**, Professor, Wentworth Institute of Technology, USA.
Title: Industrial Heritage and Urban Regeneration: Reinventing the Port District in Nantes, France.
 4. **Amber Horning**, Assistant Professor, University of Massachusetts, Lowell, USA.
Title: The Shifting Geography of Sex Markets in NYC (the 1970s-2000s) through Mental Maps of Third-Party Facilitators.
-

21:00-23:00

Greek Night

Tuesday 31 May 2022

08:00-11:00 TIME SLOT 5 – MORNING PRESENTATIONS

<p>08:00-09:30 Time Slot 5a1 Coordinator: Mr Konstantinos Manolidis</p>	<p>Time Slot 5b Coordinator: Ms Olga Gkounta, Researcher, ATINER</p>
<ol style="list-style-type: none"> Mee Kam Ng, Professor, The Chinese University of Hong Kong, China. <i>Title: Planning for Multifaceted well-being? A Review of the Planning for Multifaceted Well-being: Hong Kong Planning Standards and Guidelines.</i> Yunyi Li, Student, Shanghai Jiao Tong University, China. <i>Title: Research on Types and Characteristics of Fishing Village Space in Coastal.</i> Alwyn Hoffman, Professor, North-West University, South Africa. Crynos Mutendera, PhD Student, North-West University, South Africa. <i>Title: A Simulation Approach for Optimized Border System Design.</i> Yipin Xu, PhD Student, Southeast University, China. <i>Title: Approaches to the Planning and Management of Architectural Style and Feature in China.</i> 	<p>Old and New-An Educational Urban Walk</p> <p>The urban walk ticket is not included as part of your registration fee. It includes transportation costs and the cost to enter the Parthenon and the other monuments on the Acropolis Hill. The urban walk tour includes the broader area of Athens. Among other sites, it includes: Zappion, Syntagma Square, Temple of Olympian Zeus, Ancient Roman Agora and on Acropolis Hill: the Propylaea, the Temple of Athena Nike, the Erechtheion, and the Parthenon. The program of the tour may be adjusted, if there is a need beyond our control. This is a private event organized by ATINER exclusively for the conference participants. Some participants have videotaped the event. Click here for an example.</p>
<p>09:30-11:00 Time Slot 5a2</p>	
<ol style="list-style-type: none"> Crynos Mutendera, PhD Student, North-West University, South Africa. Alwyn Hoffman, Professor, North-West University, South Africa. <i>Title: Comparing Transport Corridors Based on Total Economic Cost.</i> Sara Sánchez Muñiz, Manager, TECH Friendly, Spain. <i>Title: The New Urban Agenda, a Good Excuse for Strategic Urban Planning.</i> Ágota Ladó, PhD Student, Babeş-Bolyai University, Romania. <i>Title: Urbanization Processes of a Town that Affect Collective Memory and Urban Identity in Miercurea Ciuc, Transylvania, Romania.</i> Laura Garcia Insa, Researcher, Universidad Carlos III de Madrid, Spain. <i>Title: Introduction to a Common European Framework for Aerospace Engineering Studies.</i> 	

11:00-13:00 TIME SLOT 6 – MORNING PRESENTATION

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Marko Kiessel**, Lecturer, Arkin University of Creative Arts & Design, Cyprus.
Title: Urban Dystopia on Screen: The City, Architecture and Power in the 21st Century Science Fiction Film.
2. **Asu Tozan**, Lecturer, Eastern Mediterranean University, Cyprus.
Title: Multi-Unit Housing Projects in British Cyprus during WWII and the Post-War Period.
3. **Viktor Holmik**, PhD Student, University of Canberra, Australia.
Title: Diagramming Urban Fragments: Collage City and the 'Vest-pocket' in the Case Study of Canberra.
4. **Chiara Bocchino**, PhD Student, University of Campania "Luigi Vanvitelli", Italy.
Title: Circular Urban Metabolism as Analysis and Design Tool for the Cities of Tomorrow.
5. **Antonia Koukouvelou**, Research Associate, Technical University of Munich, Germany.
Title: The Challenge of Transforming Post-industrial Landscapes in Greece.
6. **Denver Hendricks**, Senior Lecturer, University of Johannesburg, South Africa.
Title: The Effects of Apartheid Architecture and Policy on the Human Psyche.
7. **Solomon Eghosa Uhumamure**, Postdoctoral Fellow, Cape Peninsula University of Technology, South Africa.
Title: Towards an Effective Management of E-Waste In South Africa. A Comprehensive Review of The Prospects and Challenges.

13:00-15:00 TIME SLOT 7 – AFTERNOON PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Toni Bielic**, Professor, University of Zadar, Croatia.
Title: Sociotechnical Aspects of a Modern Technology Applied at Maritime Transport.
2. **Vlatko Knežević**, Assistant Professor, University of Zadar, Croatia.
Zoran Pavin, Assistant Professor, University of Zadar, Croatia.
Title: Impact of Hull Fouling on Vessel's Fuel Consumption and Emissions Based on a Simulation Model.
3. **Suzanne Hiller**, Assistant Professor, Hood College, USA.
Title: Citizen Science as a Vehicle for STEM Career Motivation: Research, Assessment, and Implications.
4. **Ana Gundic**, Head, University of Zadar, Croatia.
Title: Harmonization of Short-Courses for Seafarers.
5. **Srdjan Vujcic**, Assistant Professor, University of Dubrovnik Croatia.
Title: From Comfort Zone to Growth Zone in the Context of Maritime Education and Training.
6. **Kyriacos Polycarpou**, PhD Student, The Open University UK.
Title: Spatial Planning and Policy: An Enabling or a Procrastinating Actor of Sustainability Design Decisions?

15:00-16:00

Lunch

16:00-17:30 TIME SLOT 8 – AFTERNOON PRESENTATIONS

Coordinator: Ms Olga Gkounta, Researcher, ATINER

1. **Dani Sabalja**, Assistant Professor, University of Rijeka, Croatia.
Title: Contribution to the Improvement of the System of Action in the Event of Sudden Marine Pollution.
2. **Nermin Hasanspahic**, Researcher, University of Dubrovnik, Croatia.
Title: Ballast Water Discharge Profile of a Port as a Tool for Ballast Water Risk Management – A Case Study of Port of Ploče, Croatia.
3. **Sławomir Goliszek**, Institute of Geography and Spatial Organization PAS, Poland.
Title: The Significance of the Components of Transport Accessibility in Szczecin with Particular Emphasis on Public Transport in the Years 2009-2018 – Project Summary
4. **Gustavo Bittencourt Machado**, Associate Professor, Federal University of Bahia, Brazil.
Title: Affection and Reflexive Expectations in Geographical Indication.
5. **Michela Scaglione**, Researcher, University of Genova, Italy.
Title: Landscapes of Reuse: Enhancement Processes And New Opportunities Through Architecture.

20:00-21:30

Greek Home-Made Dinner (includes the traditional Greek household hospitality and quality)

Wednesday 1 June 2022
Educational Islands Cruise
Mycenae Visit

Thursday 2 June 2022
Delphi Tour

Martin Bárta

PhD Student, Palacký University Olomouc, Czech Republic

&

Minucer Mesaros

Associate Professor, University of Novi Sad, Serbia

Analysis of Public Transport Accessibility in Novi Sad based on Population Address Points

Urban public transport serves as one of the most important tools for the mobility of inhabitants within individual city districts. A key factor in its use is the sufficiently dense network of stops, which to some extent covers the accessibility of as many inhabited and other demanded places for visit as possible.

Finding a specific degree of such transport accessibility is done using network analysis and the relevant attributes of the transport infrastructure.

The broader administrative delimitation of the Serbian city of Novi Sad, together with its 16 subunits, has been chosen as the study area.

In Novi Sad there are only public buses in operation, hence the study deals exclusively with this one mode of public transport.

The methodology is based on a combination of the use of precise non-public population address points, network analysis and publicly available transport data.

Population address points represent a network of almost 50,000 residential units, in which the entire population of the city is located. This compact network is connected to the transport infrastructure, including bus routes and their stops. Using network analysis based on Openstreetmap data, the level of accessibility between the nearest bus stop and a given population address point has been calculated. Selected attributes of the bus infrastructure and the population weight of each address point have been included in the analysis.

The result of the study forms a comprehensive picture of public transport depending on the detailed point distribution of the population.

Toni Bielic

Professor, University of Zadar, Croatia

Sociotechnical Aspects of a Modern Technology Applied at Maritime Transport

This study deals with terms such as sociotechnical theory and sociotechnical system applied on ship's organization, as an approach to the complex design of work processes, aiming at identifying the interaction between humans and ship's technical systems. From this aspect human element in maritime accidents including poorly designed and not standardized ship equipment will be analysed. For analysing internal ship's organization and working process control "Talcott parsons" method of structural functionalism - Adaptation, Goal attainment, Integration and Latency (AGIL) will be presented. Based on this method various ways to achieve unity of human and technical resources will be proposed. The study is based on sociotechnical theory and proposes that the human factor and maritime institutions need to form an integrated system that needed to be optimized by joining social and technical resources on the principle of "human-centered design".

Gustavo Bittencourt Machado

Associate Professor, Federal University of Bahia, Brazil

Affection and Reflexive Expectations in Geographical Indication

This paper is based on the theoretical discussion on the following analyse categories: Reflexive expectations, affection, agrarian systems and geographical indication. The reflexive categories and affection are adressed to the technological and knowledge transmission. The reflexive expectations category has its proposition based on the notion, the concepts of expectations and reflexivity, supporting etymologically, this concept which is analyzed specifically when the agrarian system formation is considered and the recognize of the geographical indications of a product, culturally linked to a territory and region. It is not about a specific study of a product, a region, contemplated with a geographical indication, as well as Indication of Origin and Denomination of Origin or a specific agrarian system. The aim is to comprehend how the knowledge is disseminated, appears and resignifies itself in the agrarian systems formation and its products in its regions linked to a public policy of the geographical indication. The thesis is that the social formation happens through, at least, two affection-cognitive process: knowledge transmission by affection and knowledge transmission by reflexive expectations.

Chiara Bocchino

PhD Student, University of Campania "Luigi Vanvitelli", Italy

Circular Urban Metabolism as Analysis and Design Tool for the Cities of Tomorrow

Taking into account the worsening of the effects of the climate crisis (IPCC Sixth Assessment Report 2021), the always more tangible consequences in most European cities and the renewed awareness of some European governments of the ineffectiveness of actions taken to date toward a real ecological transition, a radical paradigm shift is needed to govern territories and cities. Overcoming the rhetoric of “sustainable development”, in which growth and GDP remain the key factors, it is necessary to understand and solve the environmental problems upstream and to consider other indicators that better show the state of the entire population wellness, apart from the world economy.

Although cities are responsible for 60-80% of global emissions (UN Environmental Report 2019) and 60% of resource consumption, they should no longer be considered merely as parasites, but as potential places for innovation and experimentation (Barles, 2021) (van Broekhoven, S., Vernay, A., L., 2021), where changes can take place quickly if they are well structured and systemized.

The article will argue the importance of a transition towards a systemic management of urban transformations and, in particular, how Circular Urban Metabolism (CUM) can represent an important design method within a new and optimised urban planning and design approach. Considering the city as a living organism (Geddes, 1915) (Rogers, 1997), optimising and integrating the flows that compose it, the application of CUM in the urban projects aims to limit or even eliminate waste so that the urban system can become efficient in the same way as a terrestrial ecosystem.

In particular, the article will examine and compare some French and Dutch experiences of urban and neighbourhood planning that have been equipped with an analysis of local urban metabolism, which has proved to be fundamental to design choices. Metabolic analyses of resources give back to the researchers and planners a clear and scientific image of the chosen territory or city, highlighting those activities that most influence negatively urban resource flows or that better act in a circular way, in order to know precisely where and how to intervene. Metabolic analyses influence the way planners and designers observe the city and the final project as well.

The differences between France and the Netherlands concerning national strategies and local urban plans will be examined: the progressist and state-of-the-art legislation of France suggest the importance for the achievement of the ecological transition to have a nationally distributed methodological approach; the applicative and inclined-to-experiment Dutch planning reality display the innovative character that cities of tomorrow need to acquire.

Ann Borst

Professor, Wentworth Institute of Technology, USA

Industrial Heritage and Urban Regeneration: Reinventing the Port District in Nantes, France

Recent regenerative urban projects have increasingly focused on engaging the latent potential of post-industrial sites and artifacts to enrich the urban palimpsest, thereby establishing both physical and cultural links with a city's past. These iconic structures and landscapes have the ability to convey complex local histories and to capture the *genius loci* of their site. The process of revitalizing industrial heritage need not be strictly guided by the rules or motives of historic preservation; rather, it presents the opportunity to find new meaning for the unique scale and presence that these striking ensembles lend to the urban fabric.

This paper examines a decades-long regenerative urban project in the former port district of Nantes, France that provides a striking illustration of these principles. From the outset, the City and its design team set a mandate to integrate this enclave with the historic center while respecting and reinstating its unique industrial character. Vast shipbuilding workshops, foundries, launch slipways, and cranes stand prominently in the midst of extensive new development, revealing the capacity of such structures to establish a highly specific sense of place. This ongoing project, begun in 1989, has been shaped by enlightened politicians, urban planners and designers. It was also greatly influenced by input from associations of former port workers as well as scholars and advocates of industrial heritage.

Notably, planning began with an inventory of industrial buildings and infrastructure from Nantes' shipbuilding era (early 18th to late 20th century), recognizing a type of patrimony that goes unseen or unvalued in most cultures. Many large structures have been restored and repurposed to host new uses - primarily education, creative arts, and innovation enterprises - providing a platform for economic growth in the district. The scale and dramatic form of these artifacts sets the tone for new architecture as well as for site and landscape design. The continuity of creative enterprise defines the energy and character of this new district.

The Île de Nantes project provides insights on the planning process and broad public commitment that have ensured the continued relevance of its port legacy. The results of this work support an

expanded recognition of industrial built heritage and its potential to
endow the urban fabric with a profound sense of cultural memory.

Javier Cubas

Associate Professor, Polytechnic University of Madrid, Spain

UPMQuBe: An Academic/Educational PocketQube Proposal for the EU2Space Challenge

In the present paper, the UPMQube PocketCube proposal for the EU2Space challenge (Figure1) is described. This proposal has been developed by a group of Master's Degree students led by Ph.D. students and Professors from the *Instituto Universitario de Microgravedad "Ignacio Da Riva"* (IDR/UPM) at *Universidad Politécnica de Madrid* (UPM). PocketQube is a recent new picosatellite concept, which is currently underdevelopment. Its reduced size and mass require a significant effort to reduce the characteristic size of the elementary subsystems. One of the subsystems that offers the greatest capacity for improvement is the Attitude Determination and Control Subsystem(ADCS), since most PocketQubes do not usually have one due to lack of space. The most relevant technical aspect from this proposal is the development of a new ADCS which fits the high restrictive size and mass requirements, and it is based on Commercial-Of-The-Shelf (COTS) components. This ADCS is composed by: (i) a purely Autonomous Magnetic Controller (AMC) based on magnetorquers and magnetometers on board the spacecraft (S/C)platform; (ii) an Attitude Determination System (ADS) based on solar sensors and thermal sensors on board the S/C and an On-Ground Attitude Determination Algorithm (OGADA)for post processing the sensors flight data.

The work carried out by the Master's Degree students is integrated within the academic program of the UPM's Master in Space Systems as a Case of Study. It also provides an excellent training program the Ph.D./Assistant Professors included in proposal's Team. The tasks assignments and responsibilities of all members of the Team are fully described in the paper. Additionally, it should be underlined that this proposal is quite well balanced in term of gender, as 40% of the Team (including the Principal Investigator) are women. This figure is higher than the mean percentage of women present in STEAM (Sciences, Technology, Engineering, and Mathematics) careers (29% of workforce, 19% of company board members, 3% industry CEOs).

Figure 1. *Mission Patch for UPMQube*



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Cruise Ships as a Source of Pollution of the Adriatic Sea by Pharmaceuticals and Personal Care Products

Cruise tourism creates a significant environmental burden, particularly in the Adriatic Sea, which is a vulnerable ecosystem. Research on cruise ship emissions usually addresses substances covered by international and national legislation such as nutrients, pathogens, and greenhouse gases. Pharmaceuticals and personal care products (PPCPs) are rarely investigated. PPCPs have been detected in various compartments of the marine environment globally. They gained attention because of their potential to harm human health and ecosystems. Many of them are not regulated and are considered emerging contaminants. Bearing in mind that there is a possibility that cruise ships emit significant amounts of PPCPs in the Adriatic Sea, there is a need to address this issue. This paper briefly discusses problems related to PPCPs and proposes the next steps to identify needs for preventive measures.

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Role of Cognition in Pedestrian-Level Universal Mobility: Case of Central Kolkata, India

There are 26.8 million differently-abled people in India as per the last census in 2011. Additionally, there are 103.8 million elderly people. In similar lines, the “United Nations Sustainable Development Goals” (UN-SDG) number 11 “Sustainable Cities and Communities” becomes more significant than ever in the Indian context. Universal Mobility is a fundamental component of “Sustainable Cities and Communities”, which suggests equal mobility preferences for all devoid of the users’ physical conditions. Pedestrian (including wheelchair-bound users) level use of urban areas is a relatively challenging domain of Universal Mobility in India. Specifically in old urban areas of India, the Universal Mobility scenario is more complicated due to organic urban development, low temporal changes, and high density. Amongst the numerous factors of pedestrian-level Urban Mobility, “Cognition” is significantly important. Cognition is important for differently-abled and elderly people alike; since it (Cognition) ensures legibility, orientation, and sense of place. Despite multiple international, national, and state-level guidelines related to Universal Mobility in India, the aspect of cognition has been disregarded in these guidelines. Although there has been immense research in accessibility and Universal Design in India, the impact of cognition in Universal Mobility at the pedestrian-level of old Indian cities is a relatively newer research topic.

In this research, the role of cognition in Universal Mobility at the pedestrian-level has been investigated. A stretch of approximately 850m in the core of Kolkata Municipal Corporation, India has been delineated as the case area for this research. The data sets considered for this research are: 1) Physical data: Pedestrian Count and Vehicular Traffic Volume, 2) Cognitive data: Light Intensity, Sound Intensity, and Temperature. The data were collected from the case area by the authors in the years 2020 and 2021. This paper initially involves determining the pedestrian “Level of Service” (LOS) based on the pedestrian count. Furthermore, the authors co-relate the LOS data with the light intensity,

sound intensity, and temperature data; for establishing a relationship between them. The paper further links five senses in humans to their pedestrian behavior in the context of old Indian cities. Along these lines, the authors attempt to explain the role of hormones in facilitating cognition in streetscape for differently-abled and elderly people. The importance of Assistive Technology in achieving “Service Level Benchmark” (SLBs) by fostering cognition in Universal Mobility is also discussed in this paper.

The result of this research indicates that the improvement of cognition in pedestrian-level Universal Mobility can lead to a better physical environment for the differently-abled and elderly. Furthermore, the findings shall be beneficial for researchers while designing/planning for pedestrian-level Universal Mobility in other old cities of India.

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Introduction to a Common European Framework for Aerospace Engineering Studies

With the fourth largest worldwide presence, the European space sector stands out for its efficiency and competitiveness. However, as more space industries choose Europe to establish, the space trends evolve while the space academic offer remains unchanged. This paper follows a new approach to identify the gaps between the European space education and the capabilities demanded by the industry. The main aim of the research is to provide a mapping of the skills that the renewed European space industry requires and encourages recent graduates to have, in order to set up a common European framework for contrasting the education outcomes against the business demands.

The space sector review performed in this study is divided into two parts. On the one hand, the graduate level space courses offered in different European universities are reviewed. A total of twenty-seven master's degrees from eleven different European countries are evaluated by classifying each programme's courses into a taxonomy and weighting the ECTS for a more accurate comparison. In particular, the Spanish Aerospace Technology Platform (PAE) Space Taxonomy has been considered. Moreover, additional skills taught in the different degrees are evaluated by checking for quality accreditations and audits, considering the EUR-ACE® label certificate the highest quality assurance system.

On the other hand, the European industries' needs when hiring entry level engineers have been identified. Knowing how the European industries are distributed in different space branches will allow an estimation of what the educational needs for the different Space Engineering master's degrees are. Also, the study aims at double checking if the interpersonal skills obtained in degrees holding an EUR-ACE® label are what the space industry wants, or if there is something missing that should be added to the master's competences.

The main outcome of this paper is, therefore, the introduction of a common foundation to assess the space sector in Europe, both in

universities and companies. This allows each entity to analyse and contrast their data with that of the other bodies, helping in their plan of action. The goal of a shared European standard is to advance towards an updated and more efficient European space sector.

Sławomir Goliszek

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**The Significance of the Components of Transport
Accessibility in Szczecin with Particular Emphasis on
Public Transport in the Years 2009-2018 - Project Summary**

This presentation will focus on the importance of specific conditions shaping the components of transport accessibility (transport, spatial, temporal and individual components) in Szczecin, where a specific river-port system shapes the daily accessibility of residents. The primary aim of the project is to determine how the distribution of trip sources and destinations affects changes in the accessibility of the city's districts (housing estates): by public and individual transport; in reaching various trip destinations in statistical and dynamic terms; during selected hours of the day, during the morning peak; by residents of various ages. General conclusions were drawn based on the influence of the individual transport components on the change in accessibility, including the choice of the travel path, mode and the assessment of infrastructure layout. The methods used were: nearest distance, percentage of the population, cumulative accessibility, potential accessibility, potential quotient. The main conclusion confirms the strong influence of the spatial component of travel sources and destinations on overall accessibility. Also, the specific travel time, both by public and private transport, is determined by the state of infrastructure and traffic organisation. The influence of the components on changes in accessibility depending on the area analysed, whether it is a district or a housing estate, is not very differentiated since each district and housing estate is specific, comparing the locations of destinations and the state of infrastructure.

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Harmonization of Short-Courses for Seafarers

Maritime industry is global industry and seafarers are educated in accordance with international standards, i.e., STCW Convention. Apart from formal education, carried out at accredited higher educational institutions according to accredited programmes, short-courses for seafarers play a key role in maritime industry. Seafarers are usually required to attend numerous short-courses during their seagoing career. These courses can be divided into courses that are standardized by STCW Convention and the ones that are the result of shipping companies' requirements and are not standardised (non-STCW short courses).

Harmonization of non-STCW short courses will enhance the certification and recognition of non-STCW short courses and it will enhance the attractiveness of seafarers' educational and training programmes. This development should be based on multinational cooperation in all fields of the industry, especially between the most important stakeholders in the field of maritime education and training, e.g. maritime higher institutions, maritime training centre and maritime shipping companies. Today, cooperation on improving educational and training programs for seafarers is not at satisfactory level. The main problem is lack of cooperation between maritime education and training providers in different countries, as well as, the lack of cooperation between maritime education and training providers and shipping companies. All parties involved in maritime education and training may improve their education and training system through cooperation and coordination with maritime education and training providers from different countries. This cooperation may lead to exchange of knowledge in the field of seafarers' education among different countries and can significantly improve the quality of non-STCW short courses. Therefore, it is important to provide the

environment that maritime education and training institutions can pick good practices from each other.

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**Ballast Water Discharge Profile of a Port as a Tool for
Ballast Water Risk Management –
A Case Study of Port of Ploče, Croatia**

Water that was taken onboard a ship as a ballast contains numerous aquatic organisms. Marine organisms found in ballast can pose a severe problem to the local environment and the local population's health. However, not all of these aquatic organisms will survive in the ship's ballast tank due to a lack of food and light. Thus, ballast water is recognised as one of the major vectors of potentially invasive alien species. To efficiently manage ballast water discharges in ports, it is necessary to determine its ballast water discharge profile and, based on obtained data, set parameters for risk mitigation and reduction. Therefore, discharged ballast water data for the port of Ploče (Croatia) was collected and analysed. It was found that most of the ballast water discharged in Ploče originates from the Mediterranean Sea, or more precisely, the Adriatic Sea. Furthermore, the most considerable amount of discharged ballast water was taken from Italian ports on the shores of the Adriatic Sea, and ports of Ravenna and Brindisi were the sources of the most considerable quantities of ballast water discharged. Additionally, visiting ships discharging ballast were analysed according to the flag they are flying, and it was found that ships sailing under Panama and Malta flags were the most frequent visitors discharging ballast water in Ploče. Based on the findings, proposals for efficient ballast water management measures were given.

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&

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The Effects of Apartheid Architecture and Policy on the Human Psyche

The powerful intersecting effects of architecture and psychology can be understood through spatial interventions employed by the apartheid regime during the mid-1950s. These interventions were designed to control and oppress non-white people of South Africa. The 'new' South Africa that was established after the end of Apartheid in 1994 promised to uplift and provide equality for the future 'rainbow' nation of South Africa. Twenty-three years later many of these socio-spatial interventions still remain and should be rendered as inhumane and unconstitutional. The design of the township, the home and its effects on the psyche is significant and still frames the experience of the disenfranchised South African cities of today. There is a direct correlation between policy, power, space and psychology and the lasting effects are still profound.

The aim of the paper is to unpack the relationship between psychology and space. This paper aims to unpack the various political design strategies implemented to successfully disenfranchise and facilitate segregation within South Africa during Apartheid. Urban design and architecture were used as a tool to enhance group and racial segregation and further reinforce negative stereotypes and their perceived threat. The intention is to understand how policy and power in design affected the body and the psyche. This analysis can expose significant insights into the lasting and damaging effects of power, politics and space that still plague the South African spaces and human psyche today. This legacy has left South Africans with social and psychological scars and issues that have been shaped by 'badly' designed spaces that have negatively affected the 'new' promised, anticipated, equal and inclusive 'rainbow nation's' ability to uplift and better their lives.

Suzanne Hiller

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Citizen Science as a Vehicle for STEM Career Motivation: Research, Assessment, and Implications

Citizen science is an activity in which volunteers assist professional scientists in data collection as a form of *contributory* citizen science or in designing, interpreting, and disseminating information in *collaborative* or *co-created* citizen science programs. Citizen science activities can range from outdoor studies where students collect data on organisms such as butterflies (Jeanpierre et al., 2005), analyze urban decay through Minecraft platforms with the support of architects (Magnussen & Elming, 2015) or evaluate stream quality with scientists in labs (Weigelhofer et al., 2019).

Regardless of the citizen science context, researchers and educators have recognized the potential for advancing learners' STEM identity formation and science achievement. Notably, in 2000, Bombaugh proposed that citizen science programs could reshape student identity in engineering fields, particularly for students who are traditionally underrepresented in STEM fields. The authentic nature of these types of activities provides a lens for students to view and participate in the work of professional scientists.

Initially, research studies on the impact of student development in the 2000s focused on content knowledge, environmental stewardship, and environmental literacy. Most recently, citizen science research has examined the impact on hobbyist/scientist collaborations in terms of career identity formation, self-motivational beliefs in the sciences, STEM motivation, and science achievement (Hiller & Kitsantas, 2022). For example, Hiller and Kitsantas (2014) found that students studying horseshoe crabs based on the work of a professional biologist showed significant gains in self-efficacy for scientific observation skills, interest, outcome expectations, identity formation, and content knowledge. These findings were subsequently reflected in a study conducted by Wallace and Bodzin (2017) with secondary students contributing to phenomenological databases. Moreover, there is a burgeoning group of scholars interested in the impact of these types of activities on students who do not typically follow a STEM oriented career path (Shim & Lee, 2019).

The proposed presentation entitled, *Citizen Science as a Vehicle for STEM Career Motivation: Research, Assessment, and Implications*, focuses on three areas related to citizen science research: (a) research trends, (b)

approaches to assessment in outdoor settings, such as citizen science, and (c) practical implications in classrooms and for college programs. The presentation will provide an overview in the ways citizen science research has transcended from covering content and environmental stewardship to encompass self-motivational beliefs, STEM career motivation, and student performance. Secondly, explicit examples of multiple ways to assess student gains in outdoor experiences will be given for researchers interested in measuring the impact of outdoor activities on student motivation and achievement. Finally, practical implications will be provided for ways to integrate citizen science in formal school settings as well as in collegiate courses.

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&

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A Simulation Approach for Optimized Border System Design

Imports and exports have steadily increased in recent times as fraction of the global economy. Border posts therefore form a vital link between the economies of trading partners residing on different parts of the globe. The application of just-in-time (JIT) logistics practices by global trading partners implies that borders should not create unpredictable delays to the movement of cargo. Two of the primary performance criteria for JIT logistics operations is the time consumed by the overall process and the utilization levels of assets and infrastructure required to process goods through the value chain. While most developed economies have streamlined their customs and border processes, this is not yet the case in most developing countries, including on the African continent. In the case of Sub-Sahara Africa (SSA) border post delays for cargo still vary between 1 and 14 days, compared to global benchmarks of less than an hour. These delays add cost to the supply chain; as a result, transport as fraction of the total cost of landed goods is about twice in SSA compared to the rest of the world. This places countries within SSA in a disadvantageous position compared to competitors from continents like South America and Australia that also largely export raw materials and import manufactured goods.

Improving the efficiency of such corridors is complicated by the inefficient management of border crossings. The factors that add to long border delays include the variability of vehicle processing times, the lack of sufficient capacity at critical service desks during peak traffic periods, and the fact that vehicle classes with different levels of compliance are processed through the same channels, resulting in long delays even for compliant traffic. This paper proposes improvements to the border management systems that were previously presented in literature, using a simulation approach to quantify the impact of the proposed solutions. A simulator was developed that accurately models each important aspect of the cross-border process. The simulator was calibrated against data collected during cross-border surveys. We quantified the potential for reduction in border delays through

improved quality control over service delivery by measuring the sensitivity of total border crossing time with respect to the variability of process times. A dynamic adjustment model was developed to enable an optimal compromise between the number of service desks for each process, utilization levels of available capacity and average delay time. The benefit of our proposed approach to capacity adjustment compared to previous approaches is that it does not depend on data that must be collected from traffic in transit to the border but relies only on data that can be collected inside the border area. We compared different approaches to dynamically restrict border access for vehicle classes experiencing high traffic levels, thus preventing the creation of bottlenecks for all border traffic. The optimal division of service capacity between a drive-through Green Lane for compliant vehicles and a Red Lane for non-compliant vehicles was determined. Recommendations are made towards improved policy to regulate the future design of One Stop Border Posts.

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&

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Diagramming Urban Fragments: Collage City and the 'Vest-pocket' in the Case Study of Canberra

Written as part of the reaction to Modernist planning in the late 1970s, Collage City by Colin Rowe and Fred Koetter proposes an urban design theory which applies collage as a method from art, shifting the focus from the scale of the totality down to the 'fragments' of the city. As design theory, Collage City focuses on the relationships between different elements in space through space and time, and it is through this multi-dimensional approach to the understanding of the city and its fragments that Collage City theory has the potential to generate different approach. This research is part of a larger project that tests Collage City theory as a framework for analysis rather than design and focuses on development of the techniques to study three aspects: the (I) City as Museum metaphor, the role of the (II) bricoleur and the (III) 'vest-pocket' fragments.

This paper starts by outlining the aspects of Collage City theory to generate the framework for the analysis of the 'vest-pocket' fragments and proposes the use of diagram as the main tool to examine the relationships between various scales, alongside a diachronic study of change and persistence of the urban fragment. Diagrammatic approach is applied here as a tool to understand the relationships between fragments rather than fragments themselves. In addition, diagramming as a process of analysis presupposes a level of abstraction which captures both subjective and objective qualities of the place. In this research, diagram is considered as the map of intensity that captures relationships in both synchronic and diachronic studies. Canberra's early civic precinct will be utilised as a case study, mapping its context over time and the relationships of urban fragments to the city. The analysis of the selected area will occur at four key points in time, reflecting significant moments in construction and development. The points in time for the diachronic study are the following: the 1913 Griffin Plan and its interpretation of the landscape, the 1920s Gazettal of the 1918 Griffin Plan and subsequent development, the 1960s Modernism era, and the case study area in its current form. The paper concludes that the analysis of the 'vest-pocket' scale creates a different

viewpoint to the city and its urban spaces, revealing the relationships between the plan, its interpretation, and the current and future meaning in the palimpsest of the city. The diagram complements to the palimpsest of the reading of the city within its unintentional interpretation and the level of abstraction which contributes to the spatio-temporal collage.

Amber Horning

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The Shifting Geography of Sex Markets in NYC (the 1970s-2000s) through Mental Maps of Third-Party Facilitators

Many studies analyze the geographic tendencies of sex workers; however, few studies examine how third-party facilitators perceive these spaces. Author 1, a criminologist, and Author 2, a visual artist, used an interdisciplinary approach when collecting data. Eighty-five third party facilitators were interviewed, and sixty drew mental maps of their operation in urban space. Using a mixed-methods approach to these maps, we analyzed how they perceived shifts in NYC sex markets from the 1970s to the 2000s. Next, we used Lynch's traditional markers; that is, we analyzed each map for paths, edges, districts, nodes, and landmarks. These methods showed how these spaces shifted from visible to camouflaged. Their paths changed from traditional street networks with fewer nodes and landmarks to local, hidden, or underground escape zones filled with parties, sex, and other forms of deviance.

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Smart City Planning and Heritage – An IoT based Toolkit Framework

The aim of this paper is to review and assess national and international developments in smart cities and their contribution in preserving the cultural heritage, thus facilitating the policy makers to embrace the concept of Smart Heritage. Smart city planning majorly focuses on IoT, ICT, big data, real time data and monitoring. This gives an opportunity to the policy makers to adopt the dynamic concept of IoT for heritage and integrate past and future through policy intervention, while managing the challenges faced by heritage and minimizing or negating the damage or decay of heritage assets of a city. The focus of this paper is upon integration of Smart Heritage in Smart City embracing a bottom-up approach from local level to national level. The objective encompassed herein is to explore the use of IoT in providing End-to-End (E2E) Solution using various smart tools, in a form of standard toolkit, which could be modified on a case by case basis. This toolkit will help enabling the capabilities of local bodies in monitoring and maintenance of heritage assets, thus assisting them to incorporate the smart heritage concept as a part of smart city planning.

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The Discursive and Institutional Scalar Transformation of the State: (Re)Production and (Re)Configuration of the Hydro-social Territories in Iran

The existing research on the hydrosociology in Iran is mainly characterized by two different approaches. The first view frames the state as the main, dominant, and even the only political actor; while the second perspective entails an abstract anthropological explorative standpoint towards nature-society interactions, excluding the role of the state – on other levels, particularly on the local scale.

By taking “politics of scale” and Historical Political Ecology (HPE) as the theoretical framework, this paper discusses how both above-mentioned perspectives have led to the de-politicization of water issue in Iran, which consequently made the political mobilization for environmental emancipation impossible.

Through a critical systematic review of interdisciplinary scholarly literature and historical and legal documents over the course of the last six decades, the study sheds light on the hegemony of these approaches and their embeddedness in the context of politico-economic and development discourses of “modernized” Iran. In so doing, the paper illustrates the discursive and institutional change of the Iranian state and the subsequent transformation of core-periphery relations, which led to new political power dynamics and mechanism around water supply and water management in the region.

Lastly, the study discusses and emphasizes integration of inter-scalar approaches for any eco-political contribution in the context of Iran.

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Urban Dystopia on Screen: The City, Architecture and Power in the 21st Century Science Fiction Film

This paper assesses the visualization of urban environments in several major science fiction film dystopias of the 21st century. The urban science fiction film is investigated because it has commonly been interpreted as reflection of and as comment on societal aspirations and anxieties of the respective present, mirroring contemporary discourses about values, politics, economy, social aspects, and built environments and technology.

Comprehensive scholarly work exists on architecture, the city and power on one side and on architecture, the city and film on the other side. Scholars agree that science fiction film dystopias critically comment on modern urbanism and architecture. However, research is insufficient in the analysis of the triangle of architecture/city, film and power. The paper investigates therefore whether recurring or continuous patterns of visualization and patterns of meaning(s) of the city and its architecture with regards to *power* occur. It also seeks to answer whether the meaning(s) conveyed on screen are useful or generalizable for the interpretation of meaning(s) of the existing city and its architecture.

Considering several key works about built environment and power, such as Markus (1993) and Dovey (1999), and Foucault's notion of the disciplinary quality of (modern) architecture and space through spatial partitioning according to rank, class or function, this study also takes recourse to a semiological-phenomenological approach, assuming that producers, directors, set-designers, screenwriters on one side and the audience on the other 'speak' a similar language and share cultural codes and symbols.

The recent urban science fiction films visualize dystopian narratives of totalitarianism, class segregation, technology and surveillance. They repeatedly portray a modern urban environment, and modern architectures in states of decay, and thereby ridicule the utopian aspirations that are frequently associated with modern architecture and urbanism. And through a frequent juxtaposition of modern built environment with a romanticized countryside they can be read as critique of the modern city in general. These features can be traced back to classic science fiction films of the 1960s, to the beginning of postmodern criticism.

The power relations between classes and/or societal groups are visualized, as this research demonstrates, through an inside-outside/centre-periphery dialectic on architectural and urban level, and to some extent through spatial partitioning on the basis of rank and function. The paper argues, finally, that the meaning(s) that are associated with modern architecture and urbanism on screen reflect a widespread, real-world perception of the modernist built environment.

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In Depth Analysis of Trip Chains and Tours based on the National Travel Survey Database in Austria

The database of the Austrian national travel survey is accessible to the public and many detailed analyses were carried out meanwhile based on these data. What is missing, was the in depth analysis of trip chains and tours of the mobile persons in the database, i.e., linking the single trips to chains at first as putting together tours from leaving the place of residence until returning to it. All mobile persons in the database will have at least one tour. In combination with other variables, this allows detailed analyses of interrelation and effects on these trip chains, such as length, number of trips or modes used. The paper will show the distribution and types of the trip chains, starting from 2 trips per tour (i.e., going somewhere e.g., for work and going back home after work) to more complex trips with a combination of different modes and purposes at the different destinations. The influence of the different trip purposes carried out during the tour on the mode choice, even for the whole trip chain is analysed. Differences in trip chaining in dependence on social demographic variables such as gender, age, family size, the area type of the place of residence, type of occupation are shown. Another aspect is the influence of the trip length and number of trips towards the mode choice. Results show, the big majority with a share of 76.20% of all tours consists of two trips per tour only. People tend to avoid a bigger number of more complex tours, when leaving their place of residence. Furthermore, the majority of peoples' tours (88.3%) not more than one main transport mode within the tour itself was combined (only in 10% of the tours, two modes were combined and less than 1% of the tours, more than 2 modes). However there are differences, e.g. between cities (higher degree of complexity of tours) and the rural areas (lower degree of complexity of tours). Most of the tours are work related (19.96%), followed by leisure related and shopping. The tour with the highest share consisting of more than two trips are trips with a combination of two leisure activities, but with a share of 1.27% of all tours only (followed by the combination of work

and shopping). As an example, looking at differences between male and females: the share of more complex tours including more than two trips is higher within the female population, especially in combining three trips within one tour (females 14.4% of all tours, whereas males 11.9% of all tours). In parallel, the total trip length in km (m: 33.5km/f: 26.2km) and duration in minutes (m: 61.5min/f: 55.6min) is shorter within the group of females. This leads to the conclusion females more likely combine more but shorter trips.

The paper and presentation will give an overview of the most interesting socio demographic interrelations and impacts on trip chains and mode choice within these trip chains.

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&

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Impact of Hull Fouling on Vessel's Fuel Consumption and Emissions based on a Simulation Model

With an ever increasing trend of analyzing and improving vessel energy and economic efficiency in recent years and decades, every aspect of a vessel's system needs to be observed with the goal of reducing fuel consumption and emissions. Hull fouling can have a significant effect on these variables. Since hull maintenance is an expensive effort its use has to be optimized and fine-tuned to increase the economic efficiency of a vessel's exploitation cycle. In order to do this, data and a subsequent analysis have to be obtained on different stages of the hull fouling process and the effect these states have on vessel energy efficiency and consequently emissions and economic efficiency. This paper will analyze a set of data including emission pollutants such as NO_x, SO_x and CO₂ as a greenhouse gas and the effect that different amounts of hull fouling have on the vessel's fuel consumption and emissions under different propulsion loads. The aforementioned data is obtained from a simulation model of a RoPax vessel. The advantage of using data from a simulation model of a RoPax vessel for the research discussed in this paper is the ability to analyze various conditions not easily reproduced on actual ships.

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The Challenge of Transforming Post-industrial Landscapes in Greece

In the Greek-Mediterranean context, the implications of industrialisation in the landscape are not yet thoroughly discussed and researched. Heavy industry has a particular unknown history and impact on the landscape and only a few academics have been researching on it. This paper exposes the current problem of continuous brownfield's appearance from the degradation of Greek heavy industries. It aims to show the most important strategies of successful brownfield transformation and their dependence on cultural characteristics by investigating successful transformation strategies of other European industrial brownfields, such as the Ruhr region in Germany.

The transformation of former industrial sites is an important phase in the process of de-industrialisation. Many industries that have been built and operated in the '90s keep closing down and turn into waiting lands. This phenomenon especially affects heavy industry in Greece which started developing around 1920 (such as petroleum, concrete and lignite extraction) and thus unexpectedly fast, entered the era of de-industrialisation around 1970. Workers suddenly lose their jobs, villages get deserted and the landscape quickly transforms from an active land to no-use land.

Industry developed in Greece without the support of the state and with no proper strategic plan which led in a chaotic expansion of the sector. As several authors have pointed out, there is a lack of knowledge in understanding and working with the Greek post-industrial context and this absence has been actively aggravated by the Greek state. Nowadays, the state repeats the same mistake, since it does not yet have a plan for the de-industrialisation of these sites and it reacts only by demand. Therefore, Greek industrial heritage and identity rust in the course of time and get buried under new developments which do not take into consideration their importance. Brownfield's deterioration and alternation cannot escape time and its loss of identity is now more than evident.

Greece has an industrial past which has not been given the importance it deserves and as a consequence, it has led to further degradation of its industrial heritage. These terrain vagues offer a fertile ground to re-establish and regenerate the relation between humans and

nature, city and surrounding, heritage and future strategic design. The understanding and challenge of transformation of such brownfields will bring a new vision and growth on today's Greek cultural landscape and will influence the further cultural transformation. There is now a need to counter the invisibilisation of Greek post-industrial landscapes and formulate strategies for their future transformation.

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Urbanization Processes of a Town that affect Collective Memory and Urban Identity in Miercurea Ciuc, Transylvania, Romania

Miercurea Ciuc (in Hungarian Csíkszereda) is a town in the historical region of Szeklerland in Transylvania, Romania, but until the First World War it has been part of Hungary and the Austro-Hungarian Empire. The population of the town is still predominantly Hungarian.

In the case of Miercurea Ciuc we can talk about two types of urbanization. The first one started in 1876 when the town became the seat of the historical Csík county: new administrative buildings, railways, a railway station, a hospital, a redoute, new schools and new streets have been built, but also new private houses with modern decorative and lifestyle elements have appeared. The Kossuth street linking the town center with the newly built railway station has become a symbol of modernization. The second urbanization process started exactly one hundred years later, in 1976 with the visit of the Romanian communist leader Nicolae Ceauşescu in Miercurea Ciuc. He decided to demolish the old houses of the Kossuth street and to replace them with tall blocks of flats. In the upcoming years a whole new avenue has been built in the idea of socialist urbanization.

Besides the research in the archives (researching documents, maps, photographs etc.) in order to reconstruct the 19th – early 20th century urbanization of the town, I have also done oral history research for more than two years to understand the impact the second urbanization process has had in the collective memory and urban identity of the locals.

I have found out that not only the historical urban landscape has been dramatically transformed, the demolition of the old Kossuth street is still a trauma in the memory of those who can remember. Moreover, there is a rupture in the urban identity of younger locals: since a very important part of the town (as a historical venue, a context and a heritage) has been erased, people cannot have a physical access, an understanding and a connection to the most important segments of the history of the town.

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Research on Types and Characteristics of Fishing Village Space in Coastal

Fishing village is one special kind of villages, which has witnessed the long development of fishery. Under the background of the development of urbanization and the decline of fishery resources in China, the construction and transformation of fishing village space should get more attention, thus leading to the key issue in this thesis: How to excavate the practical spatial information and realize the rational utilization of characteristic space during the continuous construction of fishing villages? The main methods are POI analysis and graphic analysis, the former for the direct manifestation of the connection between fishing village space and characteristic essential factors like fishery production waters and so on, the latter one for the rapid recognition of the distribution of fishing village space. The main research process can roughly be divided into four steps: Firstly, acquire and process POI of the fishing villages to recognize their spatial distribution quickly and realize visual expression. Secondly, summarize the spatial cluster types based on the previously obtained spatial distribution. Thirdly, derive the settlement pattern types and spatial layout types based on the spatial forms of fishing villages. Fourthly, analyze the spatial layout types and characteristics of three typical fishing villages within the research scope to confirm and refine the previous classification. Then the expected result is a valuable space classification system covering rich fishing village space types. The research scope is the coastal area of Yangtze River Delta, for the reason that this area has the dual advantages of geography and humanities, in which the fishing villages are relatively more comprehensive and representative in quantity and quality so as to discover the significant and universal space classification basis. It can be found that there are three kinds of classifications: The first are four types of spatial clusters from macroscopic aspect, including island spatial clusters, peninsula spatial clusters, estuary spatial clusters and inland spatial clusters. The second are four types of settlement patterns from middle aspect, including massive shoal type, wedge piedmont type, banded platform type and dendritic plain type. The third are spatial layouts from microscopic aspect, including road layout, architectural layout and production layout, each of which can be further divided into three types and their free combination can cover almost all the spatial forms

of fishing villages. Such space classification system is one major innovative point in this thesis, which can provide effective support and instrument for the further research on the protection and inheritance of fishing village characteristic space.

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Comparing Transport Corridors based on Total Economic Cost

The landlocked countries of the South African Development Community (SADC), comprising the Eastern Democratic Republic of Congo (DRC), Malawi, Zambia, and Zimbabwe, are served by three intermodal corridors. These countries have the option of using either the Beira Corridor, Dar es Salaam Corridor or North-South Corridor (with Durban as port). When choosing between routes users consider time efficiency and cost-effectiveness of the corridor as of paramount importance. According to Hanaoka et al (2019) many landlocked developing countries (LLDCs) encounter difficulties importing and exporting goods because cargo must pass through land borders and lengthy roads or railways to access seaports located in transit countries (TCs). They argue that difficulties arise due to the poor condition of transport infrastructure and border facilities, which forces LLDCs to endure higher logistics costs and longer transit times compared with TCs, making them less competitive in the global context.

From an economic cost perspective, it would be expected that the proximity of competing ports to the hinterland should determine the share of cargo moving on each corridor between the hinterland and the Indian Ocean seaboard. As we demonstrate in this paper, this is however not the case: while Beira Port is by far the closest to the primary economic hubs of the landlocked SADC countries, it also enjoys the smallest share of imports and exports. We investigate this paradox by developing a Total Economic Cost (TEC) model to explain the rational choices made by cargo owners and logistics service providers when selecting the most appropriate route to move cargo between the coast and the hinterland.

Previous research mainly considered the cost of infrastructure and direct transport costs and incorporated other factors like infrastructure and regulations only by way of qualitative discussions. These studies furthermore compared time delays but without converting time delay and variability of time delay into their respective economic impacts on corridor users. We however found that these approaches could not explain the above paradox, as both the cost required to provide and

operate infrastructure as well as the direct transportation cost is the lowest for Beira Corridor. We therefore proceeded to quantify the hidden costs from the perspective of cargo owners, mostly resulting from variability in time delays, to arrive at a Total Economic Cost model that can explain the reasons for the observed share of cargo that each corridor enjoys.

The use of the TEC model provided evidence that the choices of corridor made by cargo owners and their logistics service providers are indeed rational and based on maximising economic value for corridor users. The lack of providing for the impact of variability in time delays is thus proven to be a severe limitation in previous work that compared corridor performance. It is furthermore important to notice that the TEC model incorporates all the factors impacting corridor performance, including policy, regulations, infrastructure, direct and indirect costs, since the total delays experienced by cargo transported along a corridor reflect the impact of all these factors.

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**Planning for Multifaceted Well-being?
A Review of the Planning for Multifaceted Well-being:
Hong Kong Planning Standards and Guidelines**

The Hong Kong Planning Standards and Guidelines (HKPSG) provides parameters for land use planning and development control at city and local geographical levels in Hong Kong. This study ascertains if the document satisfies people's rights to spatial development for their physical, psychological and social well-being. This paper first synthesises literature that highlights place qualities important for people's multi-faceted well-being. For instance, people's living space, housing options, biophilic design and neighbourhood characteristics are important for people's physical and emotional well-being. And inclusive, diversified neighbourhoods, opportunities for place-making, community building and staying, accessibility and mobility and local economic opportunities are important for people's psychological and social well-being. Based on the synthesised literature, the HKPSG will then be systematically analysed to examine if the current planning standards (including the processes involved in determining these standards) are adequate to produce spatial qualities that are essential for people's multifaceted well-being. Recommendations will be provided to fill in identified gaps in the HKPSG, and lessons will be extracted to guide reviews of planning standards and guidelines in general.

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Safe Houses: Design Principles, Potentials and Limitations - An Analysis through Data-Driven Approaches

This paper presents findings on the use of computational design techniques to develop a safe house based on a set of defined design principles. In this study, we explored and established the design principles of safe houses for female victims of sex trafficking that contribute to the overall recovery and reintegration of these women into society. Additionally, we examined and evaluated the use of parametric design as a computational tool, which led to the development of a model for the design of these safe houses. We address this issue by creating a set of desired guidelines based on data research and literature review, and test several data-driven techniques, including generative design and models for self-organising floor plans. The paper explores the benefits as well as the possible drawbacks of several design approaches by comparing to this set of desired guidelines. We present preliminary findings from this analysis and suggest further research directions.

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Spatial Planning and Policy: An Enabling or a Procrastinating Actor of Sustainability Design Decisions?

Building design is a highly complex process and design decisions are subjected to both technical and social influences, either from external or internal parameters. Decisions taken during the design of buildings are a vital factor in determining their carbon impact throughout their whole life cycle.

A growing literature has dealt with the significance of the building design process, highlighting its influence on the carbon impacts and identifying the most important stages and stakeholders which affect these impacts.

Spatial planning and policy is one of the first limitations that designers have to consider, and is often out of their control since it is based on local and national plans. Interviews with practitioners reveal that those plans are one of their most important influences or limitations in shaping the carbon impact of a project. Moreover, the level of detail prescribed by those plans can have a different influence on the behaviour of the designer.

This article aims to understand the interactions of practitioners and the planning policy documentation in two very distinct European cultures and contexts, Sweden and Cyprus, and the effect of different planning and policy models on the designers' activities.

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Lessons about our World from Re-Migration among the Children of Immigrants

Current academic literature on second generation (children of immigrants born/raised in a society different from their parents) transnationalisms tend to avoid comparative analysis. Each case study seems to be conceived and written in its own silo. There needs to be more dialogue and collaboration between case studies and researchers. Therefore, in this paper I pursue a comparative case study approach rooted in academic literature, analyzing six popular journal articles that emphasize issues of identities and aspirations among diverse second-generation groups from around the world who have undertaken the processes of re-migration back to their motherland in significant numbers during the 21st century. Using inductive logic and discourse analysis, I synthesize underlying recurring trends among the diverse experiences expressed by the youth in these qualitative case studies to draw general conclusions as well as suggest future collaborative research directions. The experiences of the following second generation groups experiencing re-migration in the 21st century are explored; Italian-Swiss (Wessendorf, 2007), Greek-American (Christou and King, 2006), Barbadian American/British (Potter, 2005), Indian American (Jain, 2013), Hongkonger Canadian (Kobayashi and Preston, 2007) and Filipino Canadian (Kelly, 2015).

Furthermore, aside from similarities in the experiences of the second generation I also note significant differences in analytical perspectives and frameworks that have been utilized in the literature to examine the same phenomena of re-migration based on contextualized and situated understandings of the researchers and informants. My approach is not meant to be universalist or civilizational but rather unpack trends and similarities that set the basis for better future research integration across geographically and culturally distinct second-generation groups in our contemporary world.

Through my comparative case study and discursive analysis grounded in academic literature, I hope to demonstrate the possibility and utility of such an integrationist approach. I also believe that we can learn more about current trends of globalization and transnationalism from the young people who are at the forefront of such processes through their re-migration. My a priori hypothesis is that there should be some common micro, meso and macro elements that underlie the

experiences of diverse second-generation individuals across the world. Common trends observed across second generation groups in this analysis encompass several different realms of their identities and aspirations such as gendered expectations, structural forces fueling transnationalism and globalization, moving around due to limited economic opportunities in their locale, the quest for 'better' cultural belonging, pull of strong family ties/histories in the ancestral homeland and general settlement challenges tied to (re)migration.

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Contribution to the Improvement of the System of Action in the Event of Sudden Marine Pollution

The continuous increase in maritime traffic from year to year results in greater opportunities for oil pollution of the sea. The danger of marine pollution from oils threatens not only tankers but also other ships that have a significant amount of oil in their tanks using for propulsion. The application of MARPOL significantly reduced the number of maritime accidents that resulted in greater pollution of the sea with oils. While in the 1970s there were 24.5 large (> 700 tonnes) oil spills per year, in the 2010s the average number of large oil spills decreased to 1.7 oil spills per year. In addition to all the rules introduced, maritime accidents still occur with oil pollution. It is very important that countries with closed seas such as the Mediterranean have well-developed action plans because otherwise, the consequences for their economy of oil pollution can be disastrous. The most important thing in such cases, in addition to well-developed action plans, is to have suitably educated people and equipment. It is not uncommon in such cases to lack educated personnel and equipment to act in the event of sudden oil pollution of the sea. This paper aims to point out the options for proper education of people that would be available 24/7 with the possibility of prompt action in such situations. In addition to the above, it is desirable to show the option of continuous storage of the necessary equipment to act in such situations.

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The New Urban Agenda, a Good Excuse for Strategic Urban Planning

The New Urban Agenda (NUA) was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador, in 2016. It was also endorsed by the United Nations General Assembly in plenary meeting later that year. The NUA depicts a shared vision for a better and more sustainable future.

The New Urban Agenda is part of a multi-level governance strategy, which must be specified from the global level (represented by the NAU itself), through the national or even local scope. In the specific case of Spain, the Government approved the Spanish Urban Agenda in a Council of Ministers in 2019. It is a document of a non-normative strategic nature, which the corresponding Ministry undertakes to adapt to the local sphere by municipalities themselves.

The Spanish Urban Agenda provides municipal administrations, regardless of their size, a methodology and tools for a comprehensive approach to city planning. It is a strategic approach, which marks a roadmap until 2030. Each municipality will make its own Urban Agenda, based on this methodology. In practice, it has been a very interesting exercise to see how this shared methodology served towns with 200 inhabitants and cities with one million inhabitants (always taking into account specificities of the environment, governance, social economy, social cohesion or resilience and mitigation of climate change).

The specific methodology takes into account social agents as city makers, with a high percentage of participation.

50 municipalities of varying size have been established as a pilot experience in Spain. Its concrete examples of good practices and learning in the process, adapting general and universal criteria such as those of the New Urban Agenda, will serve as a lesson for European municipalities (or any part of the globe). The example of Spain, which thus guarantees the aforementioned multilevel governance, contributes to fairer, more resilient and equitable cities, with a clear roadmap that marks a horizon to be achieved.

The paper seeks to expose the governance process in Spain that materializes in municipalities the great objectives of the NAU, including cases of good practices from which to learn. The methodology that will be explained will contribute to the

comprehensive planning of cities and municipalities, which can take the Spanish case as an example for their sustainable urban development.

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**Landscapes of Reuse: Enhancement Processes and New
Opportunities through Architecture**

NOT AVAILABLE

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Investigation of Reading Geographical Educational Maps Using Eye Movement Analysis

Cartographers aim to make maps as attractive and understandable to the user as possible. When designing maps for school geographic atlases, the key question is how much information needs to be shown on the maps. As a general principle, it is often suggested that the map should not display more information than is necessary for the user to perform a specific task.

The main goal of this study is to analyse how senior students read the maps in the geographic atlases of Lithuanian schools. Eye movement tracking technologies have been used to achieve this goal. The study was performed using the eye-tracking device "Gazepoint GP3". Thematic maps of Lithuanian schools geographical atlases with different visualization styles and legends were selected for the research. The task of the experiment was to find a certain object in the legend and then identify it on a map.

The most commonly used eye-tracking metrics were selected for analysis of eye monitoring data: study duration, the number of fixations, fixation duration, and scan path length. The performed analysis of eye movements provided valuable qualitative and quantitative information about the visual search of objects on maps. Qualitative information reflects how the user perceives maps, shows strategies for finding answers, and how answers are found. Quantitative information describes the time taken for the user to perceive the information, the speed at which responses are found, and how quickly objects are identified.

With the help of an eye movement tracking device, it is possible to determine where the subject is looking, in what order and how fast he reads the information on the map, which elements of the map he first notices, how many times he looks at the legend while searching for an object. The study clearly showed that using an eye-tracking device can improve the design of maps, the layout of elements to make it as attractive and user-friendly as possible.

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Development of Urban Traffic Management in the City of Rijeka

The paper analyzes traffic management related to Real-time passenger information, Split Cycle and Offset Optimization Technique system, Congestion Charge and Parking Management system in several European cities. The scientific research project Connected Traffic started in March 2020 will establish quality solutions in urban and multimodal transport of the city of Rijeka and promote sustainable, clean, and energy-efficient modes of transport. The aim of this paper is to analyze urban mobility and traffic management to present research activities as well as the results achieved so far of the Connected Traffic project related to the improvement of traffic management in the city of Rijeka.

The importance of measuring traffic, meteorological and environmental parameters in the city of Rijeka and the application of energy efficiency measures in urban transport is aimed to reduce primary energy consumption and emissions of carbon dioxide and other harmful gases, ensuring the sustainability of urban transport system. Through research activities, elements of the decision support system in smart cities with application in transport have been defined, which will improve the work of the traffic management center in the city of Rijeka. One of the results of the project will be a platform for data aggregation in the decision-making function in urban transport and urban mobility, which will be examined in the function of the Center for Monitoring and Management of Integrated Traffic. At the same time, it would enable automatic distribution of data, i.e., their easy availability to all interested traffic participants.

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Multi-Unit Housing Projects in British Cyprus during WWII and the Post-War Period

Multi-unit housing projects played an important role in urban development in the industrialized world, also due to the urgent need for housing after WWI and WWII. They strongly contributed to the transformation of living culture in many countries. The overpopulation of the cities, causing unhealthy conditions, led to attempts for improvements in urban contexts. Governments, several organizations and individuals attempted to provide better housing for middle and low income families.

This paper discusses some of the multi-unit housing projects in Cyprus of the WWII- and post-war periods, with regards to their local and international context.

Parallel to other countries, the increase of the population in major Cypriot cities, especially in Nicosia in the first half of the 20th century caused a deterioration of the quality of living conditions. The war caused the reduction in industrial and other production facilities, a shortage in economic resources, limited trade facilities and extraordinary developments which caused the move of parts of the rural population to the cities (such as sub-industries and service sectors that fulfilled the needs of the army base located next to Nicosia). These developments resulted in the urgent need for a housing project in Nicosia under the British administration (1878-1960).

The author's research on minute papers from the "Colonial Secretary's Archive" shows the differences in perception and concerns between the administrative departments and the Public Works Department (PWD) regarding the first multi-unit housing project. The cooperation between governmental administration and municipality led to a special design solution for Cyprus. This "Subsidized Workers' Housing" complex at Nicosia-Omophita (Küçükkaymaklı), designed in 1946, consists of housing units and several public facilities such as a health centre and a primary school.

The design and construction of housing complexes continued during the second half of the 20th century under the responsibility of the PWD. International tendencies are reflected in several projects such as the concept of prefabrication in the ARCON houses (1948-1950) or the Brutalist "street decks" in the Police Flats (1958) in Nicosia.

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Towards an Effective Management of E-Waste in South Africa: A Comprehensive Review of the Prospects and Challenges

The management of electronic waste (e-waste) is one of the major environmental challenges facing South Africa and the world at large. Improper handling of this waste stream can cause a severe health hazard to the inhabitants. Worldwide estimation indicates an annual growth rate of about 4 to 5%, thus regarding e-waste as one of the fastest-growing waste streams. In South Africa, the e-waste stream is increasing three times faster than solid waste, and account for about 8% of the total waste generated, and represent about 2-3% of materials disposed of in the landfill. Approximately 6.2kg of e-waste is generated by a single individual in the country with about 12% recycled from the 360,000 tons generated annually. This present study is aimed towards comprehensively addressing the challenges and management of e-waste in South Africa by critically examining the properties, disposal and treatment. Based on the review, the study concluded that most of the adopted measures for managing e-waste in the country are disconnected from the current technological capability. Suggested by the study along with its challenges and implementation strategies are a set of a sustainable management system of e-waste. It is anticipated that these measures will alleviate the current percentage of e-waste recycling.

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From Comfort Zone to Growth Zone in the Context of Maritime Education and Training

When former seafarers become educators after years of navigation they leave what became their familiar environment and expose themselves to new levels of stress. At sea they have skills in their particular job they are trained for. However, those who become educators now have a different role where they impart their knowledge to a completely different audience. This is where seafarers-educators challenge themselves and go beyond their comfort zone. They have to develop a new set of skills and competencies in order to become “appropriately qualified for the particular types and levels of training or assessment of competence of seafarers either on board or ashore”, as set forth in the STCW Code Part A.

On the other hand, teachers of English for specific purposes (ESP) have a very difficult task of teaching subject-specific Maritime English. The role of ESP teachers is to provide students with a powerful means that will help them grow in their career. Hence, ESP teachers have to be competent to bestow on students the knowledge of general and maritime English.

Against this background, it is a venture for seafarers to enter the world of teaching and for English language teachers to enter the world of maritime education and training. For both sides this implies leaving their comfort zone, and if they want their educational engagement to carry great weight then they will propel themselves into the growth zone with their constant professional development.

This article gives an overview of responses provided by WMU educators on the topic of education and training in MET institutions. The data were collected by means of a questionnaire. The main focus was on IMO Model Courses, educators' training and qualifications. This paper brings to light the most important conclusions and recommendations supported by the findings.

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&

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A Research on Local Response and Optimization Strategies of International Student Settlement in China on Globalization

In the tide of globalization, transnational immigrants, as a special immigrant group, flow around the world, and the settlements generated by their agglomeration have gradually become a research hot spot. Therefore, this research focuses on international student, a subgroup of transnational immigrant. Taking China, a new destination country for international students, as an example, this research investigates residents, operators and public service personnel of Nanxiucun international student settlement of Nanjing and its surroundings, and has been carried out from the following three aspects:

- (1) From social and spatial attribute to the community response, summarize the dynamic evolution response of employment structure, living custom, cultural identity, space structure, public service facilities, and characteristic industry layout, presenting impact and changes brought by influx of transnational immigrant groups in Chinese cities and communities under globalization.
- (2) Further analyze the causes and mechanisms of community response from three levels: macro, meso and micro. Among them, increasingly open internal environment and cultural integration and isolation in the context of globalization provide the necessary basis and guarantee for the response; the promotion of urban renewal and transformation, and the support of multi-cultural environment provide effective ways and means for response generation; the inherent differentiated thinking habits of international student and the changing consumption concept of local residents provide internal drive and power for response generation.
- (3) On this basis, discuss optimization strategies to improve international student settlements in China, so as to provide a more diversified daily living environment for international student and highlight the regional characteristics of internationalization and diversification.

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A Coupling Study of Public Service Facilities and Land Price in Wuxi City Based on Big Data Perspective

Under the background of Chinese urbanization changing from incremental development to stock development, the completion of urban public service facilities is essential to urban spatial quality. As public services facilities is a huge and complicated system, clarifying the various types of internal rules associated with the land market price is key to optimizing spatial layout. This paper takes Wuxi City as a representative sample location and establishes the digital analysis platform using urban price and several high-precision big data acquisition methods. On this basis, it analyzes the coupling relationship between different public service categories and land price, summarizing the coupling patterns of urban public facilities distribution and urban land price fluctuations. Finally, the internal mechanism within each of the two elements is explored, providing the reference of the optimum layout of urban planning and public service facilities.

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Approaches to the Planning and Management of Architectural Style and Feature in China

After the rapid urbanization process in recent decades, China's urban construction has made remarkable achievements, and the appearance of the cities has changed greatly, but it also has the problem about lack of order and characteristics. Therefore, in China, the urban architectural style and feature are part of the key contents in the management of urban planning and construction, they reflect the image, characteristics and culture of the cities.

In recent years, some cities have carried out relevant explorations and practices on the urban architectural style and feature's planning and management, but these events still lack integrity, pertinence and operability. As a result, firstly, this paper analyzes the position of the urban architectural style and feature's planning and management in China's planning system; Then it defines the contents and strategies about planning and management of urban architectural style and feature; Finally, taking Yantai, a Chinese city, as an example, this paper explores a complete set of methods from the early characteristic research to the later planning and management implementation, in order to provide reference for the future related research and practice.

In the planning practice of Yantai, this study firstly determines the natural and cultural characteristics of Yantai architecture. Then, through the investigation of the whole city, it forms the architectural style and feature map, and clarifies the current construction characteristics and related problems with the analysis software. It determines the planning objectives and problems to be solved. Combined with the natural and cultural characteristics and construction status of Yantai, this paper establishes the planning structure and zonings. Finally, for each zoning, the architectural style and feature are guided and controlled by making the design guideline.

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Location Choices of Internal Migrants in Yangtze River Urban Agglomeration, China

The Yangtze River urban agglomeration is one of the most developed, wealthy and crowded urban regions in China, it consists of one direct state-controlled city, 25 prefectural-level cities, 40 county-level cities and a large number of towns. It is also one of the most popular destination regions of internal migrants. In the year 2020, more than 70 million migrants chose to settle in Yangtze River Urban Agglomeration, accounting for 20% of the total internal migrant population (National Bureau of Statistics). However, there exist large differences among cities in this urban region in terms of economy, amenity, housing supply and size. This paper tries to answer the question of how migrants distributed within Yangtze River urban agglomeration and what the determinants of migrants' location choices are. By adopting the enlarged Rosen-Roback Model as a conceptual framework and the data from 2017 China Migrants Dynamic Survey and the 2018 year book of each city, this paper evaluates the endogenous and exogenous variables affecting the destination choices of migrants based on city size, and finds that local productivity, housing supply, housing price, local amenities and migration policy all play significant role in migrants' decision-making process. This study verified the effectiveness of enlarged Rosen-Roback model under the Chinese circumstances and sheds light on the measures to be taken for different-sized cities to better attract internal migrant populations and to better achieve a spatial equilibrium with Yangtze River urban agglomeration.

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