

FEMIB 2025

7th International Conference on Finance, Economics,
Management and IT Business

PROCEEDINGS

Porto, Portugal

5 - 6 April, 2025

EDITORS

Mitra Arami

Vincenzo Corvello

Patricia Baudier

<https://femib.scitevents.org>

SPONSORED BY



PAPERS AVAILABLE AT



FEMIB 2025

Proceedings of the
7th International Conference on
Finance, Economics, Management and IT Business

Porto - Portugal

April 5 - 6, 2025

Sponsored by
INSTICC - Institute for Systems and Technologies of Information, Control and Communication

IEEE Technically co-sponsored by
IEEE SMC - TC on Enterprise Information Systems

ACM In Cooperation
SIGMIS - ACM Special Interest Group on Management Information Systems

Copyright © 2025 by SCITEPRESS – Science and Technology Publications, Lda.

Edited by Mitra Arami, Vincenzo Corvello and Patricia Baudier

Printed in Portugal

ISSN: 2184-5891

ISBN: 978-989-758-748-1

DOI: 10.5220/0000189400003956

Depósito Legal: 542099/25

<https://femib.scitevents.org>

femib.secretariat@insticc.org

BRIEF CONTENTS

INVITED SPEAKERS	IV
ORGANIZING COMMITTEES	V
PROGRAM COMMITTEE	VI
FOREWORD	VII
CONTENTS	IX

INVITED SPEAKERS

Wim Vanhaverbeke

University of Antwerp

Belgium

Kambis Kohansal Vajargah

Austrian Federal Economic Chamber

Austria

Loic Bachelart

Microsoft

France

JinHyo Joseph Yun

Daegu Gyeongbuk Institute of Science and Technology

Korea, Republic of

ORGANIZING COMMITTEES

CONFERENCE CHAIR

Patricia Baudier, EM Normandie Business School, France

PROGRAM CO-CHAIRS

Mitra Arami, Ecole Normandie Oxford Campus, United Kingdom

Vincenzo Corvello, University of Messina, Italy

SECRETARIAT

Vitor Pedrosa, INSTICC, Portugal

GRAPHICS PRODUCTION AND WEBDESIGNER

Inês Teles, INSTICC, Portugal

WEBMASTER

João Francisco, INSTICC, Portugal

Carolina Ribeiro, INSTICC, Portugal

PROGRAM COMMITTEE

Emmanuel Adamides, University of Patras, Greece

Syed Ahsan, Concordia University, Canada

Chantal Ammi, Mines Telecom Business School, France

Mongi Arfaoui, University of Manouba Tunisia, Tunisia

Lidija Barjaktarovic, Singidunum University, Serbia

Cristian Barra, University of Salerno, Italy

Niyazi Berk, Bahcesehir University, Turkey

Beatriz Casais, University of Minho, Portugal

Mohamed Chakroun, German University of Technology in Oman, Oman

Ibrahim Halil Eksi, Gaziantep University, Turkey

John Henry Hall, University of Pretoria, South Africa

Amran Harun, Tun Hussein Onn University of Malaysia, Malaysia

Aycan Hepsag, Istanbul University, Turkey

Mohammed Hussain, Zayed University, United Arab Emirates

Galina Kondrateva, EDC Paris Business School, France

Kyriaki Kosmidou, Aristotle University of Thessaloniki, Greece

Ayben Koy, Istanbul Ticaret University, Turkey

Peter Kristofik, Matej Bel University in Banska Bystrica, Slovak Republic

Meziane Lasfer, Bayes Business School, City, University of London, United Kingdom

Carlos Madeira, Bank for International Settlements, Mexico

Ostap Okhrin, Dresden University of Technology, Germany

Mirela Panait, Petroleum-Gas University of Ploiesti, Romania

Massimo Pollifroni, University of Turin, Italy

Afsin Sahin, Ankara Haci Bayram Veli University, Turkey

Fernando Tejerina Gaité, Universidad de Valladolid, Spain

Nugzar Todua, Tbilisi State University, Georgia

Turgut Tursoy, Near East University, Cyprus

Liang Wang, University of Hawaii, United States

FOREWORD

This book contains the proceedings of the 7th International Conference on Finance, Economics, Management and IT Business. This year, FEMIB is held in Porto, Portugal, on April 5-6, 2025. It was sponsored by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC) and technically co-sponsored by the IEEE SMC - TC on Enterprise Information Systems. FEMIB 2025 was also organized in cooperation with the ACM Special Interest Group on Management Information Systems.

We live in a fast-paced and interconnected world, in which different focuses in businesses are related and dependent on each other. Four emerging areas of business: Finance, Economics, Management and IT Business (FEMIB) are essential for each country, organization, society and individual as follows. Finance is important to the individual, corporate and national wealth, profits and long-term future. Economics can help us understand how the past and current status of the regional, national and global financial performance. Management allows organizations, governments, decision-makers to make their projects and services more structured, efficient, productive and competitive. IT business stands for new trends of development, opportunities and innovation. We believe that only doing well in these four areas, this can ensure each organization, decision-maker, investor, government and country to achieve long-term success and collaboration.

FEMIB 2025 received 47 paper submissions from 23 countries, of which 23% were accepted and published as full papers. A double-blind paper review was performed for each submission by at least 2, but usually 3 or more, members of the International Program Committee, which is composed of established researchers and domain experts.

The high quality of the FEMIB 2025 program is enhanced by the keynote lectures delivered by distinguished speakers who are renowned experts in their fields: Wim Vanhaverbeke (University of Antwerp, Belgium), Kambis Kohansal Vajargah (WKO, Austria), Loic Bachelart (Microsoft, France) and JinHyo Joseph Yun (Daegu Gyeongbuk Institute of Science and Technology, Korea, Republic of).

All presented papers will be available at the SCITEPRESS Digital Library and will be submitted for evaluation for indexing by SCOPUS, Google Scholar, The DBLP Computer Science Bibliography, Semantic Scholar, Engineering Index and Web of Science / Conference Proceedings Citation Index.

Several awards, based on the combined marks of paper reviewing, as assessed by the Program Committee, and the quality of the presentation, as assessed by session chairs at the conference venue, are conferred at the conference's closing session as recognition for the best contributions.

A shortlist of papers presented at the conference will be selected for publication of extended and revised versions in the special issue of the European Journal of Innovation Management, FinTech Journal and Journal of Open Innovation: Technology, Market, and Complexity.

The program for this conference required the dedicated effort of many people. Firstly, we must thank the authors, whose research efforts are reported here. Next, we thank the members of the Program Committee and the auxiliary reviewers for their diligent and professional reviewing. We would also like to deeply thank the invited speakers for their invaluable contribution and for taking the time to prepare their talks. Finally, a word of appreciation for the hard work of the INSTICC team; organizing a conference of this level is a task that can only be achieved by the collaborative effort of a dedicated and highly competent team.

We wish you all an exciting and inspiring conference. We hope to have contributed to the development of our research community, and we look forward to having additional research results presented at the next edition of FEMIB, details of which are available at <https://femib.scitevents.org>.

Mitra Arami

Ecole Normandie Oxford Campus, United Kingdom

Vincenzo Corvello

University of Messina, Italy

Patricia Baudier
EM Normandie Business School, France

CONTENTS

INVITED SPEAKERS

KEYNOTE SPEAKERS

Digital Technologies, Business Model Innovation & Innovation Ecosystem Management in Institutionalized Industries <i>Wim Vanhaverbeke</i>	5
Entrepreneurs of the 21st Century: Innovation, Inclusion and Impact <i>Kambis Kohansal Vajargah</i>	7
Technological Adoption in the Era of Generative AI <i>Loic Bachelart</i>	9
Post-Capitalism with Digital Transformation <i>JinHyo Joseph Yun</i>	11

PAPERS

FULL PAPERS

SDG Disclosure and Financial Performance: Evidence from Europe <i>Salah Kayed and Rasmi Meqbel</i>	17
A Clustering Approach for S&P 500 Index Based on Environmental, Social and Governance Ratings of Multiple Agencies <i>Celma de Oliveira Ribeiro and Gabriela Curti Geraldo</i>	29
Corporate Venturing in Sustainability Transition: Conceptual Framework <i>Diana Smite</i>	38
Portfolio Optimization Based on Prospect Theory <i>Celma de Oliveira Ribeiro and Alan Teixeira dos Santos</i>	51
Industrial Parks in Italy: A Systematic Overview and Preliminary Analysis of the Fosso Imperatore Case Study <i>Carlotta D'Alessandro, Giuseppe Ioppolo, Grazia Calabrò and Giuseppe Caristi</i>	61
The Effect of Consumer Acquisition Process on Consumer Satisfaction in Purchasing Fresh Food Online in the Context of Uncertainty <i>Xinyi Chu, Ruilong Li and Zengwen Yan</i>	68
Synthetic Data Generation and Federated Learning as Innovative Solutions for Data Privacy in Finance <i>Elif Özcan, Ruşen Akkuş Halepmollası and Yusuf Yaslan</i>	78
Exploring the Role of Brownian Motion in Financial Modeling: A Stochastic Approach to the Black-Scholes Model for European Call Options <i>Mehul Zawar</i>	90
Fuzzy Based Model for Mitigating Employee Attrition <i>Nida Hasib, Syed Wajahat Abbas Rizvi and Vinodani Katiyar</i>	105

Market Reactions in China to the US-Houthi Conflict: An Event Study Approach <i>Rizky Yudaruddin, Dadang Lesmana, Felisitas Defung and Ardi Paminto</i>	118
Advanced Supervised Machine Learning Algorithms in Credit Card Fraud Detection <i>Simin Yu, Victor Chang, Gia Linh Huỳnh, Vitor Jesus and Jiabin Luo</i>	126
SHORT PAPERS	
Impact of Project Delays on Financial Losses on the Green Economy <i>Dewi Nusraningrum and Agus Jerry Suarjana Putra</i>	141
Fuzzy MCDM Framework for Risk Management in Construction Supply Chain <i>Abdullah Ali Salamai</i>	146
Developing a Research Framework Model for Assessing the Impact of Social Media Marketing Activities on Brand Loyalty <i>Meng Xin, Kyriakos Christofi, Lycourgos Hadjiphannis, Pieris Chourides and Nikolaos Boukas</i>	154
Bits and Biases: Exploring Perceptions in Human-like AI Interactions Using the Stereotype Content Model <i>Fernando Jorge F. Macieira, Diego Costa Pinto, Tiago Oliveira and Mitsuru Yanaze</i>	161
An Exploratory Investigation of the Artificial Intelligence Adoption on Teachers Job Designs <i>Tarek El Mourad, Lykourgos Hadjiphannis, Kyriakos Christofi, Pieris Chourides and Alexios Kythreotis</i>	167
Introducing the Cluster-Momentum Portfolio in Alternative Risk Premia Investing <i>Berouz Fatemi, Alireza Kobravi, Duncan Larraz, Francesc Naya and Nils S. Tuchschnid</i>	175
Using Adaptive Neuro-Fuzzy Inference System and Deep Learning to Predict and Estimate the Current Stock Prices <i>Ying Bai and Dali Wang</i>	183
Trust and Risk Management Interplay: A Review in the Digital Context <i>Julija Saveljeva</i>	189
The Role of Sustainable Loan Products in Managing Sustainability Risks in German Regional Banks <i>Dominic Strube</i>	197
Do ESG Ratings Drive Financial Performance? A Systematic Analysis of Trends and Challenges <i>Amelie Heinelt, Dominic Strube and Christian Daase</i>	203
COVID-19 and Macro-Financial Forces: Who Drives the Conventional and Islamic Stock Markets? <i>Melissa Putritama, Natanael Christian Adinata, Nathalie Noviani and Shinta Amalina Hazrati Havidz</i>	209
Analysing Italian Historical Small Towns: A Cultural and Geographic Mosaic of Identity <i>Cristina Ciliberto, Giuseppe Ioppolo, Giuseppe Caristi and Grazia Calabrò</i>	217
Implementing Healthcare Innovation via ISO Standards: An Exploratory Literature Overview <i>Carlotta D'Alessandro, Antonio Licastro, Alberto Bongiorno, Katarzyna Szopik-Depczyńska and Giuseppe Ioppolo</i>	224
Unicorn Illusions: A Novel Approach to Startup Valuation Using ESG <i>Veda Ganesan</i>	232

Economic Determinants and Oil Shocks: Unravelling the Impact of Kuala Lumpur Composite Index (KLCI) Performance <i>Dhia Damia Husni and Abd Hadi Mustaffa</i>	243
Earnings Management Practices During the Covid-19 Pandemic: A Comparative Study of Jordanian Family and Non-Family Controlled Firms <i>Rasmi Meqbel and Hanady Qamoom</i>	251
The Impact of Digital Transformation on Financial Performance and Green Development: Evidence from Chinese Manufacturing Companies <i>Mohammad Alzyod, Ling Yi and Mahmoud Al-Sayed</i>	259
A Review on Large Language Models and Generative AI in Banking <i>Daniel Staegemann, Christian Haertel, Christian Daase, Matthias Pohl, Mohammad Abdallah and Klaus Turowski</i>	267
Bank Risks, and Bank Stability: The Moderating Role of State Ownership in the MENA Region <i>Ahmed Rashed and Dexiang Wu</i>	279
AUTHOR INDEX	287

Analysing Italian Historical Small Towns: A Cultural and Geographic Mosaic of Identity

Cristina Ciliberto, Giuseppe Ioppolo, Giuseppe Caristi and Grazia Calabrò

Department of Economics, University of Messina, Via dei Verdi 75, Messina, Italy

cristina.ciliberto@unime.it, giuseppe.ioppolo@unime.it, giuseppe.caristi@unime.it, grazia.calabro@unime.it

Keywords: Tourism, Historical Small Towns, SWOT, Sustainable Tourism Development.

Abstract: The recent increase in the Tourism sector has underlined its economic centrality, contributing to 9,1% of global GDP in 2023. The European Union holds a significant position, counting more than 50% of international arrivals. This, in turn, can be translated into considerable economic effects that positively affect the member states. Among such states, Italy has been ranked in the top five international destinations, registering over 57 million tourist inflows. Such an increase has been driven by affluence in major cities and the modern trend of rediscovering historical small towns (HST). This research aims to analyse the components of this trend, underscoring the geographical position and features of the HSTs throughout the Italian territory. Moreover, a descriptive analysis with quantitative data and a SWOT analysis will be conducted to assess their distribution through the Italian territory and their strengths, weaknesses, opportunities, and threats. Preliminary findings reveal that regions such as Central Italy host the highest concentration of villages, while climate change and depopulation threaten their viability. By analysing these HSTs, the study aims to inform strategic planning for sustainable tourism development, enhancing local identities and preserving cultural heritage while positioning these areas as viable alternatives in the global tourism landscape.

1 INTRODUCTION

Tourism constitutes a pivotal force in driving economic growth and job creation while serving as a social need (Agovino et al., 2017; Streimikiene et al., 2021). Streimikiene et al. (2021) recognize this sector as one of the most important economic sectors in leading countries worldwide, contributing approximately 9.1% to the global Gross Domestic Product (GDP) (nearly 10 trillion U.S. dollars) (Statista 2023). In this international perspective, the European Union (EU) holds a dominant position (Roman et al., 2020), counting over 50% of global international tourist arrivals, with over 700 million people visiting the region (Statista, 2024). This substantial number of tourists can be translated into a significant economic effect across the EU countries, as the travel and tourism sector contributed more than two trillion euros to the continent's GDP that year (Statista, 2024). For this reason, the EU tourism policy seeks to provide directives and regulations for the member states to maintain the status of the top global destination while transforming it into a sustainable place to visit, considering its social and environmental dimensions (European Commission,

2024). Among EU countries, Italy holds a significant position, ranking in the top five international tourist destinations, with 57.3 million arrivals in 2023 (Castellano et al., 2020; ISTAT, 2024; Statista, 2023). Here, tourism represents one of the core economic sectors, offering a considerable amount of job opportunities and contributing to 18% of the domestic GDP (in 2023) (OECD, 2010; ISTAT, 2024). In this context, the latest measurements show an increase in visitor numbers higher than the national average (9.5%). Such increments regarded some Italian regions such as Lazio (25.3%), Lombardy (16.8%), Sicily (13.9%), Campania (13.3%), and Aosta Valley (11%) (Italian Ministry of Tourism, 2023). According to Barbera et al. (2022), two main factors have driven such increases: the tourist flows in regional capitals as Rome, Milan, Palermo, Naples, and Aosta and the modern trend of rediscovering Historical Small Towns (HST). Such a trend embraces the quest for authenticity, including cultural and social identities, traditions, memories, local features, and rural landscapes, prompting local, national, and European authorities to address evolving tourism demands (Garau, 2015). This, in turn, has significantly impacted Italian HSTs, elevating them as emerging

spots and positioning them as appealing alternatives to major cultural cities (Biconne, 2020). Many of these villages in Italy are known as “Borghi” or HSTs. They typically have no more than 5,000 residents and, according to the Ministry of Cultural Heritage and Cultural Activities and Tourism (MIBACT), possess “a valuable cultural heritage, whose preservation and enhancement are highly significant for the national system, as they embody authenticity, uniqueness, and beauty distinctive qualities of Italy’s tourism appeal” (Bizzarri & Micera, 2021). Despite the growing interest, there is a lack of identification and categorizing of Italian villages and their potential. To fill this gap, this study will provide an overview of the typologies and related features of Italian HSTs. In addition, a SWOT analysis can be conducted to identify internal factors, such as strengths and weaknesses, and external factors, like opportunities and threats, that can enable or impede the historical small-town mission.

To this end, preliminary results will provide insights to pave the way for further HSTs valorizations.

2 METHODOLOGY

This analysis employs a mixed approach, employing a descriptive study with quantitative data and a qualitative analysis through the SWOT Analysis. The dataset used for the identification of each “borgo” includes information from the International Federation “Les Villages plus belle de la Terre” and “I Borghi più Belli d’Italia” together with data from multiple sources, including the Italian National Institute of Statistics (ISTAT) (Istituto Nazionale di Statistica in Italian) and Statista, Google Maps and geographical information systems (GIS). The data has been collected on the year of observation (2023) as well as the geographical zone (NUTS1), region (NUTS2), and province (NUTS3) according to the Nomenclature of Territorial Units for Statistics (NUTS) established with the Regulation (EC) No 1059/2003 (European Commission 2023). The dataset analysis allows the assessment of the number per region. Hence, the HSTs were classified based on geographical position first and geographical features second. In the first phase, the HSTs distribution was performed, and the sites were according to the geographical classification provided by ISTAT (north, centre, south, and island) (ISTAT, 2023). Then, to deepen the analysis, a further classification considered the geographical features, individuating three categories: Mountain HSTs (MB), referring to

sites located at a certain altitude above 600 meters above sea level; Coastal HSTs (CB) if it has a direct connection with sea or a large lake; Rural HSTs (RB) if it is characterized by hilly territory, low population density (less than 200 inhabitants per square kilometre) and sparse distribution of housing. The different territorial identities reflect different focuses in terms of economy, culture, and technology (Capello, 2019). For this reason, understanding the diverse advantages and barriers characterizing the various typologies of the HSTs can provide helpful information to foster effective policies and support local development. At this stage, a SWOT has been conducted, highlighting the strengths, weaknesses, opportunities, and threats of each category of the HSTs (Almutairi et al., 2022; Bisu et al., 2024). (Witara et al., 2024). This, in turn, aims to provide a clearer understanding of HSTs distribution and the specific challenges that must be addressed to enhance valorisation, supporting strategic planning and decision-making processes effectively.

3 RESULTS AND DISCUSSION

According to the International Federation “Les Plus Beaux Villages de la Terre” (2024), Italy with 363 villages, holds the first position in terms of number of villages, followed by France (178), Spain (116), Japan (58), Switzerland and Lichstein (50) and Wallonia (32). Considering the HSTs’ geographic position, it has been possible to notice a heterogeneous distribution among the different areas of the Italian territory has been observed (Table 1).

These preliminary results highlight that “Central Italy” has the largest number of villages, with 149. Here, regions like Tuscany, Umbria, and Marche are known for their well-preserved medieval and Renaissance villages (such as San Gimignano and Urbino), often considered pillars of tourism and regional identity. Differently, Northern Italy shows a varied distribution of villages, totalling 131. In such areas, regions such as Liguria and Lombardy present the highest number of villages, perhaps due to the development of many small, isolated villages, often perched on cliffs or nestled in valleys. In contrast, industrialized regions like Veneto and Emilia-Romagna also maintain a considerable number of HSTs, reflecting a balance between urban development and rural preservation in northern Italy. Moreover, the southern part of Italy shows fewer people, with only 50 HSTs. This lower number may reflect the South's historical economic and industrial challenges and the migration trends of people

Table 1 - Distribution of villages in Italy, Source: I Borghi più belli d'Italia, Elaboration: Authors.

Region	Number of HSTs
North of Italy	
Aosta Valley	3
Piedmont	19
Lombardy	26
Veneto	11
Trentino-South Tyrol	16
Friuli Venezia Giulia	13
Liguria	27
Emilia Romagna	16
Central Italy	
Tuscany	30
Marche	31
Umbria	32
Lazio	26
Abruzzo	26
Molise	4
South of Italy	
Campania	13
Apulia	13
Basilicata	9
Calabria	15
Islands	
Sicily	24
Sardinia	9

(approximately 1.1 million) moving from southern regions to northern regions for better economic opportunities, resulting in rural depopulation (Lepore, 2020; ISTAT, 2021). Lastly, the Italian Islands (Sicily and Sardinia) have a total of 33 HSTs, with a greater concentration in Sicily (24). This could be due to Sicily's historical significance as a cultural and trade crossroads, which led to the establishment of numerous settlements. In Sardinia, the context is slightly different, as social and economic development may hinder the valorization process (Garau et al., 2019). Despite its unique landscapes and panoramas, this region ranks among the lowest in Italy for the number of sites, placing third from the bottom alongside Basilicata. These preliminary

findings pave the way for a further classification that integrates geographical location and geographical features, leading to the following categorization (Figure 1):

This, in turn, enables a better understanding of local identities, distinguishing the HSTs by geographical position and features underlining historical and cultural practices inherent to each area. By analysing the distribution of the HSTs and considering such classification (Table 2), it has been possible to gain a picture of the Italian panorama.

Table 2 - Numerical distribution of Italian HSTs, Source: Authors.

Area	MB	CB	RB	Total
North	92	17	31	140
Centre	95	16	26	137
South	42	14	3	59
Islands	20	5	2	27
Total	249	52	62	363

The prominent presence of MB and RB in northern and central Italy likely reflects the historical settlement patterns. These areas are characterized by communities that have adapted to the challenges related to transportation routes and economic and social infrastructure, demonstrating impressive resilience and adapting to challenging and shifting natural conditions (Ehrlich et al., 2021; Wyss et al., 2022). This adaptation is evident in how these communities have maintained their cultural heritage and sustainable practices over generations. From this perspective, these HSTs offer attractions that leverage mountain features, aligning with recent experiential tourist needs by promoting winter sports such as hiking and skiing and providing opportunities for adventure (Steiger et al., 2024). In contrast, CB is typically favoured for its sea views and recreational opportunities next to the sea. Here, tourists often gravitate towards relaxing pursuits such as sunbathing, sailing, and nautical sports (European

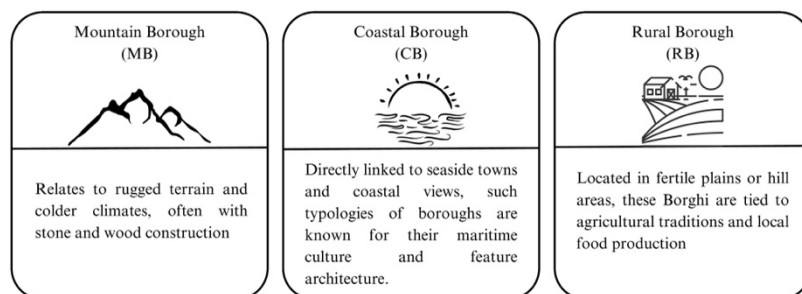


Figure 1. Categories of HSTs Source: Authors.

STRENGTHS			WEAKNESSES		
MB	CB	RB	MB	CB	RB
<ul style="list-style-type: none"> Mountain landscapes appeal Cooler climate and mountainous terrain promote unique flora, fauna, and outdoor activities 	<ul style="list-style-type: none"> Coastal view, Landscapes and Sunsets Maritime Culture, Food and Lifestyle Identity tied to the sea, fishing and nautical heritage 	<ul style="list-style-type: none"> Fertile land support local agricultural production Strong connection with nature 	<ul style="list-style-type: none"> Limited agricultural land Restricted local food production 	<ul style="list-style-type: none"> High Vulnerability to sea-level rise, storm and coastal erosion Seasonal Tourism can lead to economic instability Dependence on tourism and fishing 	<ul style="list-style-type: none"> Scarce infrastructures due to rural setting Lack of modern facilities Vulnerable demographic trends
<ul style="list-style-type: none"> Expansion of adventure tourism Potential to satisfy the sustainable tourism demand 	<ul style="list-style-type: none"> Growth in marine ecotourism Sustainable food and culinary tourism Increased demand for waterfront properties 	<ul style="list-style-type: none"> Expansion of agro-tourism and rural cultures Eco-friendly accommodation Growing interest on 0km food 	<ul style="list-style-type: none"> Natural Disaster and related risks Risk of depopulation Economic dependence on seasonal tourism 	<ul style="list-style-type: none"> Overfishing and marine pollution Increasing cost for coastal defenses and infrastructure Competition from other seaside destinations 	<ul style="list-style-type: none"> Depopulation of young people Traditional agricultural based economy Irregular weather patterns
MB	CB	RB	MB	CB	RB
OPPORTUNITIES			THREATS		

Figure 2. SWOT Analysis of Italian HST. Source: Authors.

Commission, 2024b). However, more than such information is needed. A SWOT analysis has been employed, underlining strengths, weaknesses, opportunities, and threats (Figure 2).

The SWOT analysis of HSTs reveals distinct patterns across mountain, coastal, and rural settings, each presenting challenges and opportunities for sustainable development and preservation. As Bitušíková (2021) observed, these settlements often serve as repositories of cultural heritage.

Mountain-based historical towns benefit from their unique landscape heritage and climatic conditions, which increasingly align with growing adventure tourism trends (Apollo and Andreychouk 2022). These locations often preserve traditional architectural elements and cultural practices that have evolved in response to their geographical constraints. However, they face significant challenges related to accessibility and economic sustainability, particularly during off-peak seasons. Research by Romeo et al., (2020) indicates that mountain communities often struggle with limited agricultural capacity and restricted local food production, leading to increased dependence on external supply chains.

Maritime culture and heritage of coastal historical towns create unique opportunities for tourism (Ounanian et al., 2021). However, these communities face escalating challenges from climate change impacts. According to Major and Juhola (2021), coastal settlements are increasingly vulnerable to storm surges and rising sea levels, necessitating substantial investments in protective infrastructure. The seasonal nature of tourism in these areas, while

providing essential economic benefits, also creates significant social and infrastructural pressures during peak periods.

Rural historical towns possess fertile agricultural land and strong connections to nature; however, they face significant demographic challenges. Eurostat (2024) article on rural communities highlights how the lack of modern infrastructure and limited economic opportunities contribute to youth outmigration. However, these areas are experiencing renewed interest through the growing popularity of agritourism and eco-friendly travel experiences (Ndhlovu and Dube, 2024).

Across all three typologies, common threads emerge regarding the opportunities for sustainable tourism development. The post-pandemic shift toward experiential and authentic travel experiences has created new possibilities for these historical settlements (Sunder and Dixit, 2023). However, this opportunity must be balanced against the threat of overtourism and the need to preserve local cultural identity (Capocchi et al., 2019; Dodds & Butler, 2019).

The analysis suggests that successful development strategies must address three key areas: infrastructure modernization, economic diversification, and environmental resilience. The future viability of HSTs depends on their ability to adapt to changing demographic and economic patterns while preserving their unique cultural and architectural heritage (Božić et al., 2019).

Analyzing these SWOT Factors has played an essential role in understanding internal and external

elements interacting with each HSTs category. In this sense, the natural landscapes of the Italian HSTs represent a common strength. Indeed, Skowronek et al. (2018) emphasized the landscape's role, making them a critical component in pursuing sustainable tourism, balancing and preserving natural and cultural heritage with social needs and economic interests. Achieving this balance depends on carefully assessing how landscapes are described, evolve, and manage their resources effectively (Skowronek et al., 2018).

In addition, the mild climate needs to be considered, as it fosters seasonal tourism in winter, mainly MB; in summer, CB, autumn, and spring, RB is the leading destination. This, in turn, creates the basis for the latest opportunities in sustainable tourism, encompassing ecological, financial, societal, and cultural development elements (Pan et al., 2018). Thus, it contributes to achieving environmental sustainability, economic viability, and ethical and social equity (Pan et al., 2018).

Furthermore, local, seasonal products are experiencing renewed appreciation, and the process involved in their creation enhances their significance in modern contexts (Gonda et al., 2021). Indeed, Choe & Kim (2018) emphasized that tourists seek experiences that broaden their knowledge or cultural understanding through local products. This might include discovering new cooking methods, exploring the origins of specific ingredients, or uncovering the stories behind traditional dishes (Choe & Kim, 2018). However, difficulties do exist. The effects of climate change led to hydrological and meteorological irregularities (Mokhov et al., 2022), resulting in extreme weather events and unpredictable rainfall patterns, posing significant risks to natural ecosystems but also to social and economic ones (European Commission, 2024a). Moreover, the trend of younger mountain people migrating to cities and other countries is leading to the depopulation of mountainous regions and the consequent economic decline (Rey, 2015). Furthermore, phenomenon such as overtourism can bring negative effects, such as excessive number of visitors, disruptive or inappropriate behavior by tourists, tension between locals and tourists, overcrowding, pressure on infrastructure, loss of cultural authenticity, diminished amenities, a decline in residents' quality of life, and reduced tourists experiences (Dodds & Butler, 2019). In this regard, technological solutions are widely considered essential for addressing, or at least reducing, the effects of overtourism and its adverse impacts on destinations (Gretzel, 2021). This, in turn, can lead to the development of an e-tourism

system where digitalization is integrated into every phase of the travel industry (Hamid et al., 2021). Moreover, implementing digital solutions such as digital platforms and e-commerce for local artisans could facilitate the trading of local businesses, improving the overall local markets and providing users with secure, reliable, and efficient solutions (Kalyan et al., 2024). From this perspective, an essential element is represented by the collaboration with local institutions, which allows HSTs to pool resources, secure shared infrastructure funding, and build collective resilience to sustain growth and adaptability in the face of actual and future challenges.

4 CONCLUSIONS

Harnessing the potential of Italian HSTs has emerged as a significant catalyst for national tourism, connecting local communities with tourists worldwide. The descriptive analysis of these HST reveals 363 Italian sites, which exhibit a heterogeneous distribution primarily concentrated in central and northern regions. This, in turn, reflects the nation's historical significance as a hearth of Italian culture and heritage, where many traditional practices and local customs have flourished over centuries. Moreover, examining these HSTs' geographical position and features provided a picture of how they are distributed across Italian territory. In this sense, a SWOT analysis identified strengths and opportunities, weaknesses and potential threats. The evaluation of the sites distribution and the assessment of their critical components leads to preliminary results. This, in turn, can provide helpful information so that public and private stakeholders can improve strategies to guide and guide a better decision-making process to bolster local and national tourism. In conclusion, promoting and valorizing local identities and the historical significance of these HSTs can effectively position these areas as attractive destinations that celebrate and preserve Italian traditions. Such initiatives enable better visibility and viability, ensuring the maintenance of their status as integral components of international tourism. The collaboration among various stakeholders, including local governments, tourism boards, and community organizations, can create a more cohesive approach to promoting these destinations while ensuring their cultural heritage is respected and preserved for future generations. These preliminary results will pave the way for initiatives designed to elevate the visibility and sustainability of Italian "Borghi" and solidify

their role as critical elements in national and international tourism strategies.

ACKNOWLEDGEMENTS

This research has received funding from PNRR - Missione 4, Componente 2, Investimento 1.1 - Bando Prin 2022 - Decreto Direttoriale n. 104 del 02-02-2022- Progetto “H-SMA-CE: a decision support system for circular economy transition” CUP J53D23009390006 - codice identificativo 2022JZLL7J.

REFERENCES

- Agovino, M., Casaccia, M., Garofalo, A., & Marchesano, K. (2017). Tourism and disability in Italy. Limits and opportunities. *Tourism management perspectives*, 23, 58-67.
- Almutairi, K., Hosseini Dehshiri, S. J., Hosseini Dehshiri, S. S., Mostafaeipour, A., Hoa, A. X., & Techato, K. (2022). Determination of optimal renewable energy growth strategies using SWOT analysis, hybrid MCDM methods, and game theory: A case study. *International Journal of Energy Research*, 46(5), 6766-6789.
- Apollo, M., & Andreychouk, V. (2022). Mountaineering adventure tourism and local communities: *Social, environmental and economics interactions*. Edward Elgar Publishing.
- Barbera, F., Cersosimo, D., De Rossi, A., & l'Italia, A. R. (2022). Contro i borghi: *Il Belpaese che dimentica i paesi*. Donzelli Editore.
- Biconne, V. (2020). *Borghi italiani come destinazione emergente: identificazione dei cluster e diffusione di Airbnb= Italian villages as emerging travel destinations: cluster analysis and Airbnb diffusion* (Doctoral dissertation, Politecnico di Torino).
- Bisu, A. A., Ahmed, T. G., Ahmad, U. S., & Maiwada, A. D. (2024). A SWOT Analysis approach for the development of Photovoltaic (PV) energy in Northern Nigeria. *Cleaner Energy Systems*, 100128.
- Bitušíková, A. (2021). Cultural heritage as a means of heritage tourism development. *Muzeológia a kultúrne dedičstvo*, 9(1), 81-95.
- Bizzarri, C., & Micera, R. (2021). The Valorization of Italian “Borghi” as a Tool for the Tourism Development of Rural Areas. *Sustainability*, 13(12), 6643.
- Božić, N., Dumbović Bilušić, B., & Kranjčević, J. (2019). Urban transformation and sustainable development of small historic towns. *Cultural Urban Heritage: Development, Learning and Landscape Strategies*, 113-125.
- Capello, R. (2019). Interpreting and understanding territorial identity. *Regional science policy & Practice*, 11(1), 141-159.
- Capocchi, A., Vallone, C., Pierotti, M., & Amaduzzi, A. (2019). Overtourism: A literature review to assess implications and future perspectives. *Sustainability*, 11(12), 3303.
- Castellano, R., Chelli, F. M., Ciommi, M., Musella, G., Punzo, G., & Salvati, L. (2020). Trahit sua quemque voluptas. The multidimensional satisfaction of foreign tourists visiting Italy. *Socio-Economic Planning Sciences*, 70, 100722.
- Choe, J. Y. J., & Kim, S. S. (2018). Effects of tourists' local food consumption value on attitude, food destination image, and behavioral intention. *International journal of hospitality management*, 71, 1-10.
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36.
- Dodds, R., & Butler, R. (2019). The phenomena of overtourism: A review. *International Journal of Tourism Cities*, 5(4), 519-528.
- Dodds, R., & Butler, R. (Eds.). (2019). *Overtourism: Issues, realities and solutions* (Vol. 1). Walter de Gruyter GmbH & Co KG.
- Ehrlich, D., Melchiorri, M., & Capitani, C. (2021). Population trends and urbanisation in mountain ranges of the world. *Land*, 10(3), 255.
- European Commission. (2023). *Glossary: Nomenclature of territorial units for statistics (NUTS)*. Eurostat Statistics Explained. Accessed on 17 November 2024, Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Nomenclature_of_territorial_units_for_statistics_\(NUTS\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Nomenclature_of_territorial_units_for_statistics_(NUTS))
- European Commission. (2024). *Tourism policy overview*. European Commission. Accessed on 17 November 2024, Available at: https://single-market-economy.ec.europa.eu/sectors/tourism/policy-overview_en
- European Commission. (2024a). *Consequences of climate change*. Climate.ec.europa.eu. Accessed on November 16, 2024, Available at: https://climate.ec.europa.eu/climate-change/consequences-climate-change_en
- European Commission. (2024b). *Coastal tourism*. EU Blue Economy Observatory. Accessed on 17 November 2024, Available at: https://blue-economy-observatory.ec.europa.eu/eu-blue-economy-sectors/coastal-tourism_en
- Eurostat (2024). Urban-rural Europe - demographic developments in rural regions and areas. ISSN 2443-8219. Accessed on 17 November 2024, Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Urban-rural_Europe_-_demographic_developments_in_rural_regions_and_areas&oldid=651687
- Garau, C. (2015). Perspectives on cultural and sustainable rural tourism in a smart region: The case study of Marmilla in Sardinia (Italy). *Sustainability*, 7(6), 6412-6434.
- Garau, C., Desogus, G., & Coni, M. (2019). Fostering and planning a smart governance strategy for evaluating the

- urban polarities of the Sardinian Island (Italy). *Sustainability*, 11(18), 4962.
- Gonda, T., Angler, K., & Csóka, L. (2021). The role of local products in tourism. *European countryside*, 13(1), 91-107.
- Gretzel, U. (2021). Technological Solutions to Overtourism: Potential and Limits. *Mediterranean Protected Areas in the Era of Overtourism: Challenges and Solutions*, 337-349.
- Hamid, R. A., Albahri, A. S., Alwan, J. K., Al-Qaysi, Z. T., Albahri, O. S., Zaidan, A. A., ... & Zaidan, B. B. (2021). How smart is e-tourism? A systematic review of smart tourism recommendation system applying data management. *Computer Science Review*, 39, 100337.
- Istituto Nazionale di Statistica (ISTAT) (2021), *Report Migrazioni 2021*, Accessed on 15 November 2024, Available at: https://www.istat.it/it/files/2023/02/REPORT_MIGRAZIONI_2021.pdf
- Istituto Nazionale di Statistica (ISTAT) (2023). *Annuario statistico italiano 2023*. Accessed on: 15 November 2023, Available at: <https://www.istat.it/produzione-editoriale/annuario-statistico-italiano-2023/>
- Istituto Nazionale di Statistica (ISTAT). (2024), Accessed on 11 November 2024, Available at: <http://dati.istat.it/#>
- Kalyan, C. V., Rajeswari, V. N. A. S., Phaneendra, Y. S. D., & Kishan, S. R. (2024, April). Lokart: Empowering Local Artisans through Mobile E-commerce. In *2024 International Conference on Emerging Technologies in Computer Science for Interdisciplinary Applications (ICETCS)* (pp. 1-6). IEEE.
- Lepore, A. (2020). L'evoluzione del divario tra il Nord e il Sud dal dopoguerra a oggi. *Estudios Históricos*, 12(23), 2-63.
- Les Plus Belle Villages de la terre (2024), Accessed on: 16 November 2024, Available at: <https://lpbvt.org/>
- Major, D., & Juhola, S. (2021). *Climate change adaptation in coastal cities: a guidebook for citizens, public officials and planners* (p. 202). Helsinki University Press.
- Ministero del Turismo. (2024). *Andamento turistico italiano 2023*. Ministero del Turismo. Accessed on 11 November 2024, Available at: <https://www.ministeroturismo.gov.it/wp-content/uploads/2024/06/Andamento-turistico-italiano-2023.pdf>
- Mokhov, I. I. (2022). Climate change: Causes, risks, consequences, and problems of adaptation and regulation. *Herald of the Russian Academy of Sciences*, 92(1), 1-11.
- Ndhlovu, E., & Dube, K. (2024). Agritourism and sustainability: A global bibliometric analysis of the state of research and dominant issues. *Journal of Outdoor Recreation and Tourism*, 46, 100746.
- OECD (2010). *OECD Tourism Trends and Policies 2010*. OECD Publishing. <https://doi.org/10.1787/9789264116030-it>
- Ounanian, K., Van Tatenhove, J. P., Hansen, C. J., Delaney, A. E., Bohnstedt, H., Azzopardi, E., ... & Frangoudes, K. (2021). Conceptualizing coastal and maritime cultural heritage through communities of meaning and participation. *Ocean & Coastal Management*, 212, 105806.
- Pan, S. Y., Gao, M., Kim, H., Shah, K. J., Pei, S. L., & Chiang, P. C. (2018). Advances and challenges in sustainable tourism toward a green economy. *Science of the total environment*, 635, 452-469.
- Rey, R. (2015). New challenges and opportunities for mountain agri-food economy in Southeastern Europe. A scenario for efficient and sustainable use of mountain product, based on the family farm, in an innovative, adapted cooperative associative system—horizon 2040. *Procedia Economics and Finance*, 22, 723-732.
- Roman, M., Roman, M., & Niedziółka, A. (2020). Spatial diversity of tourism in the countries of the European Union. *Sustainability*, 12(7), 2713.
- Romeo, R., Grita, F., Parisi, F., & Russo, L. (2020). *Vulnerability of mountain peoples to food insecurity: updated data and analysis of drivers*. Food & Agriculture Org.
- Skowronek, E., Tucki, A., Huijbens, E., & Jóźwik, M. (2018). What is the tourist landscape? Aspects and features of the concept. *Acta Geographica Slovenica*, 58(2), 73-85.
- Statista (2024). *Travel and tourism in Europe*. Statista. Accessed on 17 November 2024, Available at <https://www.Statista.com/topics/3848/travel-and-tourism-in-europe/#topicOverview>
- Statista. (2023). Travel and tourism: Share of global GDP 2019-2034. Accessed on: 17 November 2024, Available at: <https://www.Statista.com/statistics/1099933/travel-and-tourism-share-of-gdp/#:~:text=Travel%20and%20tourism%3A%20share%20of%20global%20GDP%202019%2D2034&text=Overall%2C%20these%20industries%20represented%209.1,nearly%2010%20trillion%20U.S.%20dollars>
- Steiger, R., Knowles, N., Pöll, K., & Rütty, M. (2024). Impacts of climate change on mountain tourism: A review. *Journal of Sustainable Tourism*, 32(9), 1984-2017.
- Streimikiene, D., Svagzdienė, B., Jasinskis, E., & Simanavicius, A. (2021). Sustainable tourism development and competitiveness: The systematic literature review. *Sustainable development*, 29(1), 259-271.
- Sunder, S., & Dixit, S. (2023). Post-Pandemic Tourism: An Article on the Recovery Strategies. *Integrated Journal for Research in Arts and Humanities*, 3(2), 174-179.
- Witara, K., Andriana, R., & Nugroho, D. C. (2024). A Innovative Approaches: SWOT Analysis of Balinese Souvenir Marketing in Sukawati Market During and After the Pandemi. *Warmadewa Management and Business Journal (WMBJ)*, 6(2), 70-80.
- Wyss, R., Luthe, T., Pedoth, L., Schneiderbauer, S., Adler, C., Apple, M., ... & Thaler, T. (2022). Mountain resilience: a systematic literature review and paths to the future. *Mountain Research and Development*, 42(2), A23-A36.