

Oswaldo Gervasi · Beniamino Murgante ·
Sanjay Misra · Ana Maria A. C. Rocha ·
Chiara Garau (Eds.)

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Contents – Part V

International Workshop on Socio-Economic and Environmental Models for Land Use Management (SEMLUM 2022)

A Methodological Approach Based on the Choquet Integral for Sustainable Valuations	3
<i>Francesco Tajani, Francesco Sica, Maria Rosaria Guarini, Pierluigi Morano, and Rossana Ranieri</i>	
An Evaluation Methodology for the Feasibility Analysis of Energy Retrofit Investments	15
<i>Francesco Tajani, Pierluigi Morano, Felicia Di Liddo, Endriol Doko, and Carmelo Maria Torre</i>	
The Cost-Benefit Analysis for the Validation of Next Generation EU Investments: An Application to the Healthcare Sector	27
<i>Marco Locurcio, Pierluigi Morano, Francesco Tajani, Felicia Di Liddo, and Ilaria Bortone</i>	

International Workshop on Ports of the Future Smartness and Sustainability (SmartPorts 2022)

Special Economic Zones Planning for Sustainable Ports: General Approach for Administrative Simplifications and a Test Case	47
<i>Domenica Savia Pellicanò and Maria Rosaria Trecozzi</i>	
Special Economic Zones Planning for Sustainable Ports: Aggregate Economic Impact of Port of Gioia Tauro	60
<i>Giuseppe Musolino, Antonio Cartisano, and Giuseppe Fortugno</i>	
Special Economic Zones Planning for Sustainable Ports: The Test Case of Territorial Attractiveness and Urban Planning in Calabria Region	72
<i>Dario A. Musolino and Paola Panuccio</i>	
Special Economic Zones Planning for Sustainable Ports: The Role of Research and Training in the Calabria Region	85
<i>Corrado Rindone, Francis M. M. Cirianni, Giuseppe Delfino, and Antonello I. Croce</i>	

A Study on Ports' Emissions in the Adriatic Sea.	98
<i>Luca Braidotti and Marco Mazzarino</i>	
The Logistic Carbon Footprint: A Dynamic Calculation Tool for an Indicator of the Sustainability of Logistic Processes with a Case Study on the Port of Trieste.	109
<i>Andrea Gallo</i>	
Investigating the Competitive Factors of Container Ports in the Mediterranean Area: An Experimental Analysis Using DEA and PCA.	124
<i>Gianfranco Fancello, Patrizia Serra, Daniel M. Vitiello, and Valentina Aramu</i>	
Port Clusters as an Opportunity for Optimizing Small-Scale LNG Distribution Chains: An Application to the Mediterranean Case	140
<i>Patrizia Serra, Simona Mancini, Gianfranco Fancello, Federico Sollai, and Paolo Fadda</i>	
Sea-Rail Intermodal Transport in Italian Gateway Ports: A Sustainable Solution? The Examples of La Spezia and Trieste.	156
<i>Marcello Tadini and Giuseppe Borruso</i>	
Strategic Planning for Special Economic Zones to Ports of the Future: System of Models and Test Case	173
<i>Francesco Russo, Giovanna Chilà, and Clara Zito</i>	
Smart Ports from Theory to Practice: A Review of Sustainability Indicators.	185
<i>Silvia Battino and Maria del Mar Muñoz Leonisio</i>	
Not Only Waterfront. The Port-City Relations Between Peripheries and Inner Harbors	196
<i>Ginevra Balletto, Giuseppe Borruso, and Tiziana Campisi</i>	
International Workshop on Smart Tourism (Smart Tourism 2022)	
Rural Tourism and Walkability. Compare Sardinia and Gran Canaria Models.	211
<i>Silvia Battino, Ginevra Balletto, Alessandra Milesi, and Ainhoa Amaro Garcia</i>	
Game-Based e-Tourism-e-Health Using SQL	222
<i>Chze-Yee Lim and Chien-Sing Lee</i>	

14th International Symposium on Software Engineering Processes and Applications (SEPA 2022)

Image Gradient Based Iris Recognition for Distantly Acquired Face Images Using Distance Classifiers	239
<i>Arnab Mukherjee, Kazi Shah Nawaz Ripon, Lasker Ershad Ali, Md. Zahidul Islam, and G. M. Mamun-Al-Imran</i>	
E-Payment Continuance Usage: The Roles of Perceived Trust and Perceived Security.	253
<i>Thanh D. Nguyen and Quynh N. T. Tran</i>	
Trustworthy Machine Learning Approaches for Cyberattack Detection: A Review	265
<i>Blessing Guembe, Ambrose Azeta, Sanjay Misra, and Ravin Ahuja</i>	
Comparing Effectiveness of Machine Learning Methods for Diagnosis of Deep Vein Thrombosis	279
<i>Ruslan Sorano, Lars V. Magnusson, and Khurshid Abbas</i>	
A Predictive Model for the Detection of Clients Suspicious Behavior	294
<i>Marcelo Leon, Fidel Shagñay, Claudia Rivas, and Fabricio Echeverria</i>	
Autoclassify Software Defects Using Orthogonal Defect Classification.	313
<i>Sushil Kumar, Meera Sharma, S. K. Muttoo, and V. B. Singh</i>	
Traffic Control System Development Based on Computer Vision	323
<i>Diogo Eugênio da Silva Cortez, Itamir de Moraes Barroca Filho, Everson Mizaél Cortez Silva, and Gustavo Girão</i>	
Cerebrospinal Fluid Containers Navigator. A Systematic Literature Review	340
<i>Yésica Rodríguez, Alejandra Huérfano, Fernando Yepes-Calderon, J. Gordon McComb, and Hector Florez</i>	
Business Intelligence Analytics Tools	352
<i>Teresa Guarda, Ana Carvaca, Ronald Gozabay, Mitzi Saquicela, and Helen Tomalá</i>	
Empirical Analysis of Data Sampling-Based Ensemble Methods in Software Defect Prediction	363
<i>Abdullateef O. Balogun, Babajide J. Odejide, Amos O. Bajeh, Zubair O. Alanamu, Fatima E. Usman-Hamza, Hammid O. Adeleke, Modinat A. Mabayoje, and Shakirat R. Yusuff</i>	
MySQL Collaboration by Approving and Tracking Updates with Dependencies: A Versioning Approach	380
<i>Dharavath Ramesh and Munesh Chandra Trivedi</i>	

Software Sentiment Analysis Using Machine Learning with Different Word-Embedding	396
<i>Venkata Krishna Chandra Mula, Sanidhya Vijayvargiya, Lov Kumar, Surender Singh Samant, and Lalita Bhanu Murthy</i>	
Development of a Web-Based Knowledge Management Framework for Public-Private Partnership Projects in Nigeria	411
<i>Akinbo Tomisin Faith, Fagbenle Olabosipo, and Amusan Lekan</i>	
Security Evaluation Criteria of Open-Source Libraries	422
<i>Vivian Mills and Sergey Butakov</i>	
Lean Robotics: A Multivocal Literature Review	436
<i>Adis Jasarevic and Ricardo Colomo-Palacios</i>	
Multiperspective Web Testing Supported by a Generation Hyper-Heuristic	447
<i>Juliana Marino Balera and Valdivino Alexandre de Santiago Júnior</i>	
On the Machine Learning Based Business Workflows Extracting Knowledge from Large Scale Graph Data	463
<i>Mert Musaoğlu, Merve Bekler, Hüseyin Budak, Celal Akçelik, and Mehmet S. Aktas</i>	
Augmented Intelligence Multilingual Conversational Service for Smart Enterprise Management Software	476
<i>Abidemi Emmanuel Adeniyi, Mukaila Olagunju, Joseph Bamidele Awotunde, Moses Kazeem Abiodun, Jinmisayo Awokola, and Morolake Oladayo Lawrence</i>	
Recommendation of Microservices Patterns Through Automatic Information Retrieval Using Problems Specified in Natural Language	489
<i>Álex dos Santos Moura, Mário Alan de Oliveira Lima, Fabio Gomes Rocha, and Michel S. Soares</i>	
Crime Detection and Analysis from Social Media Messages Using Machine Learning and Natural Language Processing Technique	502
<i>Xolani Lombo, Olaide N. Oyelade, and Absalom E. Ezugwu</i>	
Residential Water Consumption Monitoring System Using IoT and MQTT Communication.	518
<i>Jacqueline del Pilar Villacís-Guerrero, Daniela Yessenia Cunalata-Paredes, José Roberto Bonilla-Villacís, Angel Soria, and Fátima Avilés-Castillo</i>	

CALint: A Tool for Enforcing the Clean Architecture’s Dependency Rule in Python	534
<i>Clevio Orlando de Oliveira Junior, Jonathan Carvalho, Fábio Fagundes Silveira, Tiago Silva da Silva, and Eduardo Martins Guerra</i>	
Genetic Data Analysis and Business Process Management Platform for Personalized Nutrition Service	550
<i>Jitao Yang</i>	
Electric Monitoring System for Residential Customers Using Wireless Technology	560
<i>Jorge Buele, Juan Carlos Morales-Sánchez, José Varela-Aldás, Guillermo Palacios-Navarro, and Manuel Ayala-Chauvin</i>	
Computer-Aided Forensic Authorship Identification in Criminology	576
<i>András Kicsi, Péter Sánta, Dániel Horváth, Norbert Kóhegyi, Viktor Szvorenny, Veronika Vincze, Eszter Főző, and László Vidács</i>	
Improved CNN Based on Batch Normalization and Adam Optimizer	593
<i>Roseline Oluwaseun Ogundokun, Rytis Maskeliunas, Sanjay Misra, and Robertas Damaševičius</i>	
The Application of SISO LSTM Networks to Forecast Selected Items in Financial Quarterly Reports – Case Study	605
<i>Adam Galuszka, Eryka Probierz, Adrian Olczyk, Jerzy Kocerca, Katarzyna Klimczak, and Tomasz Wisniewski</i>	
Design Assertions: Executable Assertions for Design Constraints	617
<i>Yoonsik Cheon</i>	
DC Health: Node-Level Online Anomaly Detection in Data Center Performance Data Monitoring	632
<i>Walter Lopes Neto and Itamir de Morais Barroca Filho</i>	
An Antibot-Based Web Voting System for Higher Institutions	650
<i>Jessen Japheth, John Wejin, Sanjay Misra, and Jonathan Oluranti</i>	
Efficient GitHub Crawling Using the GraphQL API	662
<i>Adrian Jobst, Daniel Atzberger, Tim Cech, Willy Scheibel, Matthias Trapp, and Jürgen Döllner</i>	
Software Functional Requirements Classification Using Ensemble Learning	678
<i>Sanidhya Vijayvargiya, Lov Kumar, Aruna Malapati, Lalita Bhanu Murthy, and Sanjay Misra</i>	

A Novel Approach to Recommendation System Business Workflows:	
A Case Study for Book E-Commerce Websites.	692
<i>Mounes Zaval, Said Orfan Haidari, Pinar Kosan, and Mehmet S. Aktas</i>	
An Approach to Business Workflow Software Architectures:	
A Case Study for Bank Account Transaction Type Prediction.	709
<i>Fatma Gizem Çallı, Çağdaş Ayyıldız, Berke Kaan Açıköz, and Mehmet S. Aktas</i>	
Author Index	725



Special Economic Zones Planning for Sustainable Ports: The Test Case of Territorial Attractiveness and Urban Planning in Calabria Region

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Abstract. The attractiveness of regions and places for investments, tourists, students, talented people, and other economic actors is a relevant issue for regional economic development, due to the increasing importance of flows of firms, resources and people on the global scale. Attractiveness for peripheral regions is even harder, due to their nature of marginal and peripheral locations which causes clear locational disadvantages compared to central locations. Calabria is a case of Italian peripheral region which should raise its attractiveness to increase its level of development, improving several critical location factors, like transport accessibility, which in this region is extremely scarce.

The Special Economic Zone (SEZ) is an opportunity for the development of the territory. The territorial system around the Special Economic Zone must be planned by the strategic urban plan. Only the urban plan determines the integrated quality system between infrastructures, urbanization, territory and landscape. The strategic urban plan for territories with Special Economic Zones converts urban spaces into places of development, maximizes the offer of services and technological innovation and increases the quality of life and well-being of citizens.

Keywords: Special economic zone · Territorial attractiveness · Location factors · Strategic urban plan · Port of Gioia Tauro

1 Introduction

In the age of globalization, attractiveness is a crucial dimension for regional and urban economic development. Nowadays regions, localities and cities on the one hand must be competitive, being able to export and increase their market share in industries where they specialize; on the other hand, they must be attractive for firms, investments, human capital, students, talented people, tourists, etc. if they wish to increase their level of GDP, income and wealth. Therefore, they must also design and implement investment attraction policies, e.g., tax incentives and Special Economic Zones.

In the case of a remote and marginal region like Calabria attracting firms, investments and people is even harder and more challenging. In fact, this type of regions, due to their geographical location, suffers several locational disadvantages compared to central regions, like a low level of accessibility and the lack of agglomeration effects.

However, at the same time, for these lagging regions, attracting investments and people, designing strategies based on exogenous development, might be a potential game changer. Late studies in fact show that in this type of regions pure endogenous development strategies has usually failed [1]. Studies focused on Southern Italy highlight that regional development policies based on supporting endogenous entrepreneurship realized in the last decades were not able to boost economy significantly [2]. Rather, southern regions suffered from the loss of productive factors (human capital, entrepreneurs, etc.), as for example brain drain demonstrates [3].

The Special Economic Zones (SEZs) are one of the main policies adopted by national and regional governments to attract investments. SEZs create an opportunity for development in lagging regions, not only limitedly to the places where SEZs are settled, but even in the wider surrounding regions, therefore planning is crucial for exploiting the potential effects of SEZs. The strategic urban plan for regions where SEZs is settled, converts urban spaces into places of development, maximizes the offer of services and technological innovation and increases the quality of life and well-being of citizens. The urban regeneration is the support to increase the value of the SEZs.

In this paper we will focus on the analysis of the attractiveness of a Southern Italian region, Calabria, based on the key data about attractiveness at the territorial scale for firms and people, and on the main strategies and plans for improving it, focusing in particular on the SEZ being settled there. As far as we know, case studies on the attractiveness of peripheral and marginal regions, and on the related policies and planning are rare. In this respect, we consider this research contribution rather novel in the current literature.

The structure of the paper is as follows. Section 2 illustrates first the concept of territorial attractiveness. Then, in paragraph 2.1, it presents the main determinants, i.e., location factors, of territorial attractiveness, and in paragraph 2.2 analyses and discusses the case of Calabria, its attractiveness and the (lacking) location factors which might explain why it is so scarcely attractive. Section 3 deals with SEZs Calabria and integrated strategic urban plan for making regions and cities more attractive, focusing on the role of SEZs for territorial and urban regeneration. Lastly, Sect. 4 shortly draws some final conclusions.

2 Territorial Attractiveness

Territorial attractiveness is a complex and multifaceted concept, which lend itself to several interpretations. It can be first intended as ‘revealed attractiveness’, which is associated with actual incoming flows (investments, workers, talented people, students, etc.) in a geographical area [4]. The existence of these flows reveals its attractiveness. For example, if a region registers a high number of Foreign Direct Investments (FDIs) projects, it means that this region has a high level of ‘revealed attractiveness’, at least as concerns foreign investors. But territorial attractiveness can be regarded also as ‘perceived attractiveness’, when it refers to how people or groups, perceive, see, etc. then

evaluate a geographical area in which they have a particular interest [5]. For example, again this can concern entrepreneurs interested in investing in a certain region: if they see it as a potential location of their firms, it means that this region is perceived as attractive for direct investments. Also, it can concern potential migrant workers interested in moving out of their country to search for better job opportunities, tourists planning where to go for holidays, etc. In the case of perceived attractiveness, we do not deal with information about objective phenomena that have occurred (actual flows of people, investments, etc.), but instead we deal with the subjective perception, that is the image of a place.

Territorial attractiveness presents multiple ‘facets’ also in terms of types of flows that can be attracted. For example, as said above, there might be flows of direct investments (financial resources used to get control of a company), flows of immigrant workers, flows of specific categories of people, such as university students, researchers, talented people (i.e., ‘creative class’), flows of tourists, etc. Finally, we should also not forget that territorial attractiveness can be examined at different spatial scales, from the macro-scale (countries) [6] to the micro-scales (regions, provinces, cities, etc.) [7].

2.1 Determinants of Territorial Attractiveness: Location Factors

The revealed and the perceived attractiveness of a region on the one hand is determined by the firms’ objectives and strategies (or by the people’s socio-demographic characteristics, motivations, attitudes, etc.), as stated by important theoretical approaches, like the neoclassical and behavioral approach; on the other hand, it is explained by the characteristics of the place of destination: said differently, by its location factors (pull factors), as claimed by other approaches, like the institutional theories [8].

Location factors concern all contextual factors (economic, social, cultural, institutional, environmental) in the place of destination which can affect the cost, the productivity and the profitability of firms, and the life of individuals. This is the case for example of traditional factors, like market size, accessibility, human capital, labour costs, trade openness, land, agglomeration and localisation economies, quality and cost of infrastructures and services, scientific and technological assets, etc. But it is also the case of aspects like institutional quality (legal system, bureaucracy, security, political stability, property rights protection, etc.), environmental and cultural assets, quality of life, social cohesion, policy framework (tax policies, labour market regulations, environmental policies, trade policies, etc.) etc. Firms and people, when they decide where to invest or to move, tend to choose locations more favorable in terms of such factors.

The explanatory role of location factors on firm location and individuals’ decisions has been highlighted in many studies. For example, the role of traditional factors like market potential, labour costs, trade openness has been investigated in the studies focused on European regions [9, 10]. Several studies also emphasized the importance of institutional quality for attracting FDIs [11, 12]. On the one hand, efficient institutions improve firms’ productivity; on the other hand, a good institutional setting means lowering several costs and increasing the level of certainty and security for investors. In fact, due to high sunk costs, FDIs are significantly exposed to uncertainty and insecurity that might stem for example from a weak enforcement of property rights or from the influence of

crime organizations [13]. The role of the quality of the institutional environment has been studied also as concerns the attraction of skilled workers [14].

Interestingly, as far as the role of the crime organizations on the territorial attractiveness is concerned, some qualitative studies focused on the perception of found that the Mafia organizations affect remarkably the image of the Southern Italian regions, preventing entrepreneurs from listing them as potential location of their investments [15]. Several authors have investigated the relevance of other location factors to explain firms' location at the regional scale; especially accessibility and agglomeration economies, in particular localization economies (externalities arising from the geographical concentration of firms belonging to the same industry) [16–18]. As concerns accessibility, studies went in depth focusing even on the association between FDI location and specific modes of transport, i.e., air transport infrastructure and services [19, 20].

Moreover, there is a wide literature that has shown the relevance of policies for investment attraction [21]. This is the case for example of SEZs, which have been created in several countries, and which have been successful in countries like India [22]. Finally, other soft factors, like quality of life, environmental and cultural assets, are extremely relevant in the case of the territorial attractiveness of people, and specific categories such as university students, talented people, and obviously tourists (less, for firms' location). For example, the pioneering studies conducted by Richard Florida on the creative class in the US cities [23] went in depth in the analysis city attractiveness for human capital; but also works focused on universities and student cities, underlined the importance of soft factors in attracting people.

2.2 The Attractiveness of Calabria: Characteristics and Determinants

As illustrated above, territorial attractiveness can be analyzed for both investments and people. Referring to the revealed attractiveness of Calabria, the available official data allow to measure the attractiveness for FDI and for flows of people, such as migration flows, university students and tourists.

Regarding FDI, Calabria turns out to be evidently one of the least attractive Italian regions (Table 1). Overall, in fact, in Calabria there are just over 30 companies foreign-owned, equal to 0.22% of the total of Italian companies controlled by foreign investors (about 14,200). In terms of employees, the stock of FDI settled in Calabria has an even lower incidence: is equal to 0.12% of the national total, while in terms of turnover is equal to 0.08%. It is a presence of foreign investors therefore negligible, both in absolute and relative terms. The utilities sector (power, gas, water, waste), to which more than 50% of Calabrian foreign-owned companies belong, and transport (relevant in terms of employees in foreign-owned companies), explains the bulk of the FDI registered in Calabria. Calabria is therefore very unattractive for key macro-sectors of the national economy, such as manufacturing and made in Italy industries (furniture; food; fashion; mechanics). Historical data shows that Calabria over time has become even less attractive: in contrast to the rest of the country, the FDI stock in Calabria has decreased, in terms of number of projects, employees and turnover.

With regards to the attractiveness for people, it is interesting to consider demographic change first. The population in Calabria has been declining for several years, not only due to a negative natural balance, but also due to the net migration of negative sign. Net

Table 1. Foreign Direct Investments (2011, 2017)

	Firms	%	Employees	%	Turnover (mln €)	%
2017 Calabria	31	0,22	1.618	0,12	481	0,08
Italy	14.253	100	1.350.908	100	615.273	100
2011 Calabria	38	0,31	1.957	0,17	538	0,09
Italy	12.109	100	1.162.265	100	581.596	100

Source: Elaborations on “Banca dati REPRINT, ICE - Politecnico di Milano”

migration is evidently an indicator of the attractiveness for people of a geographical area, referring essentially to transfers of residence caused by the employment opportunities offered by other areas. In 2018 and 2019 net migration in Calabria was negative for 10 thousand units: most of them were transfers of residence to other Italian municipalities, rather than transfers to foreign countries (see demo.istat.it).

Second, it is relevant to analyze the flows of university students, which is a proxy of human capital attraction. Table 2 shows the attractiveness of Calabrian universities (universities out of 89 universities in Italy). The index of universities attractiveness, which incorporates not only the attraction of students from outside the region (domestic and foreign students), but also the ability to retain native students, has a negative sign, and is lower than that recorded by most of the southern regions.

Third, taking the tourist movement into consideration (which on the whole captures not only the leisure movement but also the business movement), the poor attractiveness of Calabria is no less. Calabria, in fact, according to Istat (see dati.istat.it), in the period 2017–19 recorded annually about 9 million overnight stays, equal to just over 2% of the number of overnight stays recorded at national level (over 436 million). Of these, stays of foreigners do not exceed 25% of the total, while in Italy they amount to about 50% of the total. Therefore, the ability to attract foreign tourists in Calabria is even lower. Even the analysis of the ratio between overnight stays and resident population shows a territorial attractiveness for tourists significantly lower than the national average.

Table 2. Index of universities attractiveness (2016–18)*

	2016	2017	2018
Calabria	−58,6	−56,6	−53,5
Basilicata	−183,4	−179,3	−176,6
Campania	−10,4	−10,0	−9,8
Apulia	−49,0	−47,6	−42,8
Sicily	−29,9	−30,4	−28,2
Sardinia	−20,3	−19,2	−17,4
Centre	12,7	11,9	9,2
North	11,1	11,0	11,2

*Ratio of net migration of enrolled students to total enrolment students (%).

Source: Istat - Banca dati indicatori territoriali per le politiche di sviluppo

The low attractiveness of this region can be explained by the lack of several of the location factors identified by the relevant literature. First, Calabria is a lagging region in terms of economic development and employment, and is scarcely open to international trade: therefore, it has clear disadvantages as far as traditional location factors are concerned (market size, productivity, trade openness, employment opportunities). The Istat data on GDP per capita, productivity, and export orientation in this respect are clear enough. In 2020, Calabrian GDP per capita was 16.4k euros, compared to the national GDP of 28.8k euros and the southern one of 18.3k euros. In the same year, added value per employee (labor productivity indicator) in Calabria was just above 47k euros, against about 60k euros at national level, and about 50k in the South. Equally significant are the data on the export orientation: in 2018, regional exports, (550mln euros), amounted to 0.1% of national exports and 1.1% of exports from the South.

Second, Calabria appears extremely disadvantaged even regarding other location factors, which, as we have seen above, are also crucial. It has a low level of accessibility, almost at the level of the Mediterranean island regions, as evidenced by the analyses based on the potential global accessibility indicator [24]. The low level of regional accessibility also emerges from other analyses on long distance rail transport [25].

Calabria has no large metropolitan areas able to generate agglomeration effects (the largest city, Reggio Calabria, barely exceeds 170k inhabitants), or in any case cities with quality of life such as to attract specific groups, like talented people or university students. There is also a lack of sector-specific firms' agglomerations (e.g., industrial districts), where investors can potentially benefit from localisation economies. This weakness explain the lack of a large pool of skilled and highly educated labor supply, which can act as an attractor for multinationals looking for pools of skilled workers. Apart from some urban areas (for example, Cosenza) that thanks to the presence of excellent academic institutions have experienced interesting cases of investment attraction [26], Calabria is poorly endowed with human capital. Again Istat (dati.istat.it) shows that only 79% of the Calabrian population aged 20–24 has obtained at least the diploma of higher secondary school (against 83% in Italy, and 80% in the South). In addition, the tertiary education rate of the population aged 30–34 is 20.7%, a value well below the national average, although in line with the southern one.

The institutional quality in Calabria is also low. According to the European Quality of Government Index by the European Commission (EC), including aspects like efficiency of the Public Administration, corruption and crime, the institutional quality of this region in 2017 was low. Calabria ranks 198th out of the 202 European regions in the ranking. In particular, the influence of the Mafia organizations in Calabria is a very serious and dramatic problem [27]. Finally, it is worth reporting the data of the Regional Competitiveness Index by the EC [28], another synthetic indicator that can be interpreted as a measure of territorial attractiveness, since it incorporates several relevant variables. The RCI 2019 states that Calabria ranks 244th in the EU regions ranking.

3 Urban Planning

3.1 Regulatory Framework of the Special Economic Zone in Calabria

The Decree Law of 2017 n.91: ‘Urgent provisions for economic growth in the South’ defines the SEZ: “*a geographically delimited and clearly identified area, also consisting of areas not territorially adjacent as long as they have a functional economic link, and including at least one port area with the characteristics established by EU regulation n.1315 of 11 December 2013 of the European Parliament and of the Council, connected to the trans-European transport network (TEN-T)* [29].

The Council of the Calabria region with 2015 resolution n. 52 established the SEZ of Calabria, due to the importance at the international scale of the port of Gioia Tauro [30]. The Regional Transport Plan (PRT) approved by the 2016 resolution n.157 outlines the strategic vision for the economic revitalization of Calabria. Action 6 deals with the measures for the development of the Gioia Tauro area in the Euro-Mediterranean and intercontinental contexts, and in particular with the Economic Macronode and the Special Territorial Zone to integrate the areas of the port with those of the retro port [31]. In 2018, the Calabria region finally approved the strategic development plan for the special economic zone, with resolution n. 100 [32].

The article 22 of the urban planning law of the Calabria region for the protection, governance and use of the territory establishes the: ‘Particular rules for the logistics hub of Gioia Tauro’ [33] and decides that with reference to the Plan National Strategic Port Authority of 2015, the Calabria region can assume, in the Territorial Reference Framework with landscape value, the Special Economic Zone of the Gioia Tauro pole [34].

Urban planning is an opportunity for the protection and regeneration of the territory [35]. An integrated planning process ensures sustainable territorial development. The interaction between urban planning theory, rule, and complex reality, with continuous activity of knowledge, makes objectives and strategies [36], plans the integral sustainable development of the territories [37].

This planning process elaborates a plan that operates on the value of physical integrity and cultural identity [38], ensuring quality of life, social well-being, smart innovation. The integrated territorial urban plan achieves a joint action between all the disciplinary sectors involved in the dynamics of transformation [39]. The territorial system around the SEZ, if provided for by the strategic urban plan, creates an integrated system between infrastructures, services, landscape, giving rise to further advantages to companies located in the SEZ.

The aim of the regulatory framework and its executive tools is to push for a single integrated strategic vision for the entire region. The vision is integrated because it is a connecting element between the institutional policies of the various sectors, but above all because it unifies development projects relating to the various sectors, such as industrial, agricultural, tourism, etc. [34]. In the paradigm of the current strategic sustainable development policies of our territories, the SEZs attract companies that actively participate in the process of generating added value for the places where they locate [40]. Therefore, it is an advantageous opportunity both for firms and for redevelopment of territories [41, 42].

The increase in demand for new employees provokes the response of territories that plan an increasingly incremental offer [43, 44], activating urban regeneration projects.

3.2 Integrated Strategic Urban Plan for the Sustainable Development of the Territory

The establishment of the SEZs close to the main ports of southern Italy is indented as the development opportunity for the territories surrounding them [45]. Urban planning has the tools to incorporate the SEZs into pro-active territories that participate in economic development. SEZs, with the urban support of the territories in which they fall, can produce the effects for which they were established by law. The integrated territorial urban plan, makes decisions and chooses actions [46], so that SEZs, from incentive areas for companies only, become decisive places for the creation of a territorial system suitable for the economic development of the neighboring areas. The strategic urban plan for the sustainable development of the territory sets out the vision for an integrated territorial system, focusing the development on the special area of the SEZ. The strategic urban plan puts into a system, in the planning and decision-making processes, the values and problems that historically represent the limits to development. The strategy is to provide the area with urban planning solutions that, based on multi-sectoral analyzes and assessments, propose decisions for regeneration, smart innovation and sustainable development [47]. The benefits that the SEZs offer to firms must be integrated with the development dynamics of the entire territory, mutually supporting each other. The urban plan equips the territory with material and immaterial infrastructures that become the added value that firms seek for their location. The firms, promote productive activities that increase the demand for employees and thus trigger a true process of economic development. SEZs increase the demand and the territory plans the offers, it is a combined operation, to achieve the best conditions of success. In order to increase demand in the area and trigger the process of economic recovery of the surrounding historically depressed areas, satisfying the existential reason for their settlement, the SEZs must not be configured as closed areas, extraneous to productive vocations and disconnected from their territories [48].

The territorial urban plan sustains the propulsive function of the SEZ for the economic recovery, integrating the special area with the areas outside the port.

3.3 Special Economic Zones as the Key for Territorial Regeneration

Geographical areas economically depressed are often weak in terms of urban quality [49]. SEZs are set up to revive the economy of lagging areas. Experience has shown that only urban redevelopment projects are not sufficient to trigger new processes that generate development and relaunch of the economic and productive sectors [50].

SEZs reverses the action of urban planning; it is proposed as an opportunity for economic recovery and therefore, asks the territory for new offers. These are the economic activities induced by the companies, which ask to satisfy the needs connected to the new infrastructures and to design places where the quality of life is satisfied and where it is possible to benefit from smart services and equipment. The SEZ triggers the processes of territorial regeneration. Convinced that the port and the special area activate sustainable

development processes, the focus is on the territorial regeneration, an integrated quality system between the port, urban centers, territory and landscape.

By adopting the methodological approach of the integrated strategic plan, the sustainable regeneration of the entire territorial system on which the SEZ gravitates is proposed [47]. Applying it to the case of the port of Gioia Tauro [51], the vision of the strategic plan of territorial regeneration of the integrated port and retroport system is the new smart town [52].

3.4 Urban Regeneration and New Smart Town

Urban planning deficits can be resolved with territorial rebalancing actions.

Urban regeneration allows territories to be transformed into places of high quality, both environmentally and technologically. The application of smart opportunities allows the creation of new next generation cities, according to an integrated urban planning model.

SEZ must be integrated into the territory because it is its development mover. The strategic urban plan, after completing the analysis and interpretation of the data, decides whether to recover or redevelop the existing one, or whether to plan new smart cities. The demographic data, crossed between the current state and future projections, allow us to evaluate the choices that the strategic plan must take. By adding the share of the population employed in the SEZ, plus the share of the local resident population, we obtain the total number of presences gravitating to the territorial system [53].

$$PoP_{tot} = PoP_{sez} + PoP_{urban} \quad (1)$$

Subsequently, it is necessary to develop further data and calculate the total built-up area, already existing on the territory. By relating the total number of the population (workers + residents) with the built-up areas, an indicator will be obtained that allows us to verify whether what already exists is sufficient, greater, or insufficient. It is necessary to calculate the occupancy index of each inhabitant per square meter, in relation to the quality standards [54].

The qualitative standards are weighted with respect to the functional criteria of quality of life, sustainable development and social well-being. Therefore, if the total population, compared with the existing built areas, expresses a ratio in which the standard index is equal to or higher, it will be necessary to intervene on what already exists.

The recovery or redevelopment choices are entrusted to the plan, so that no more land is consumed. If, conversely, the report indicates that the built surfaces are not sufficient and do not meet the standards, new designs will have to be built. In this case, the plan can choose urban regeneration, adopting the urban planning model of the new towns in smart mode. The vision of the strategic plan of territorial regeneration of the integrated port and retroport system is the new smart town. It will be the scenario chosen if the data relating to the total population, compared with the surfaces already built, do not meet the qualitative standards.

$$SUP_{tot} = SUP_{urban\ regeneration} + SUP_{new\ town} \quad (2)$$

From which it follows that [52]:

$$SUP_{new\ town} = SUP_{tot} - SUP_{urban\ regeneration} \quad (3)$$

History has given some examples of new towns that have regenerated the territories. The urban model of the new town, built near a production center, has determined a new development model; activated a further question; asked for a new offer to the territory.

This is the original meaning of urban regeneration: the presence of a productive pole (as is the SEZ opportunity for disadvantaged areas) starts up the urban planning process of territorial regeneration. Among all, the original project of Olivetti district, built in Ivrea, Italy [55] and the ENI district in Gela, Italy. They are examples of great interest, for the results obtained in the social and economic productive ambit, as well as in the field of architectural and urban planning.

The latest generation cities are built following the current canons of urban innovation. This new conceptual approach consists of the interaction between the real situation, the vision of the future, the goals of sustainable development and the categories of the smart city. Urban regeneration interventions innovate cities and transform them into the latest generation of cities. Regeneration is essential to increase the quality of life of citizens; moreover, if it is carried out with the principles of integrated urban planning, it will be a regeneration that will give life to smart territories.

4 Conclusions

SEZ based on the port of Gioia Tauro can be the game changer for the Calabrian territorial attractiveness, and therefore for its regional and urban economic development. SEZ can be the appropriate tool for providing and enhancing some of the location factors which are currently lacking in Calabria, and which as seen above are crucial to attract external investors. This is the case of a secure, adequate, and efficient institutional setting, and of an accessible and cheap area, thanks to the location next to sea and nodal infrastructure, land availability and tax breaks. The role of local universities in improving the supply of skilled labor for external companies should also not be overlooked as well. Calabrian urban areas, through proper planning and preparedness, should benefit from the SEZ constitution, and could play on their turn an active role. They can provide a high-quality environment for attracting further human resources and firms, able to boost and increase more regional economic development. Clearly, this research represents a first step of the analysis of a case of attractiveness in peripheral regions based on SEZs. Future research might explore and assess better the effects of SEZ in this region and might focus more on the urban policy and planning tools able to manage the effects and the processes triggered by FDIs attraction.

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