

TARGETED ANALYSIS //

IMAGINE

Developing a metropolitan-regional imaginary in
Milan-Bologna urban region

Scientific annex 2 // In-depth analysis of the creative and innova-
tive economy and the logistic industry

This TARGETED ANALYSIS is conducted within the framework of the ESPON 2020 Cooperation Programme, partly financed by the European Regional Development Fund.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States, the UK, and the Partner States, Iceland, Liechtenstein, Norway, and Switzerland

This delivery does not necessarily reflect the opinions of members of the ESPON 2020 Monitoring Committee.

Coordination and Outreach

Valeria Fedeli (Politecnico di Milan), Piera Petruzzi (ESPON EGTC)

Authors

POLITECNICO DI MILAN - DASTU: Prof. Valeria Fedeli, Prof. Alessandro Balducci, Prof. Ilaria Mariotti, Prof. Paolo Beria, Prof. Paolo Bozzuto, Prof. Francesco Curci, Dr. Fabio Manfredini, Dr. Dante Di Matteo, Dr. Federica Rossi, Dr. Michelangelo Secchi, Dr. Luigi Carboni, Dr. Ing. Vardhman Lunkar

SCIENCESPO: Prof. Marco Cremaschi, Dr. Martina Busti, MA Rebecca Fern

GLOBUS et LOCUS: Prof. Paolo Perulli, Dr. Livia D'Anna, Dr. Luca Garavaglia, Dr. Piero Bassetti, Dr. Francesco Galli

Advisory group

Stakeholders: Isabella Susi Botto, Carmine Pacente, Milan Metropolitan City, IT (lead stakeholder) | Silvia Bernardi, Alessandro Del Piano, Francesco Selmi, Metropolitan City of Bologna, IT | Elisabetta Pozzi, Province of Pavia, IT | Antonio Colnaghi, Vittorio Silva, Province of Piacenza, IT | Carlo Berizzi, Associazione Interessi Metropolitan, IT | Andrzej Czajkowski, City of Warsaw, PL | Henk Bouwman, METREX - network of European metropolitan regions and areas | Aurore Meyfroidt, POPSU- Observatory platform for urban projects and strategies, FR |

ESPON EGTC: Project manager: Piera Petruzzi, Financial expert: Marta Roca

Acknowledgements

Fabio Rugge, University of Pavia | Lanfranco Senn, Bocconi University

Information on ESPON and its projects can be found at www.espon.eu.

The website provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

ISBN: 978-2-919795-64-2

© **ESPON, 2021**

Layout and graphic design by BGRAPHIC, Denmark

Printing, reproduction or quotation is authorised provided the source is acknowledged and a copy is forwarded to the ESPON EGTC in Luxembourg.

Contact: info@espon.eu

TARGETED ANALYSIS //

IMAGINE

Developing a metropolitan-regional
imaginary in Milan-Bologna urban region

Scientific annex 2 // In-depth analysis of the creative and
innovative economy and the logistic industry

Table of contents

Abbreviations	7
1 Creative and innovative economy in Milan-Bologna urban region	9
1.1 Innovative start-ups and small medium enterprises	11
1.2 The dynamics of New Working Spaces	12
1.3 Critical considerations: an important role of medium size cities and the emergence of new location patterns for the creative industry	13
2 Transport and logistics in Milan-Bologna urban region	15
2.1 Logistics: state of the art in Milan-Bologna urban region	16
2.2 Critical considerations: a logistic region is emerging with limited international role, but important territorial local impacts	18
References	27

List of Tables

Table 1 - Top 10 municipalities for number of creative firms (local units)	10
Table 2 - Top 10 municipalities for number of innovative start-ups (2020).....	11
Table 3 – Top 10 municipalities for number of innovative SME (2020)	12

List of Maps

Map 1 - IA1 - Number of innovative start-ups	20
Map 2 - IA2 - Change in the number of creative industries	21
Map 3 - IA3 - Change in the number of transport and logistic industries.....	22

List of Figures

Figure 1 - Location of coworking spaces by Italian municipalities according to the SNAI classification “Inner Areas” (2018)	23
Figure 2 - Location of NeWSps by municipalities in Emilia Romagna according to the SNAI classification “Inner Areas” (2020)	23
Figure 3 - Location of NeWSps by municipalities in Lombardia according to the SNAI classification “Inner Areas” (2020)	24
Figure 4 - Location of the establishments of the main logistics firms and forwarders in Lombardia (2018)	24
Figure 5 - Location of the principal establishments of the logistics firms and forwarders by ATO (Ambiti Territoriali Omogenei) in Lombardia	25
Figure 6 - Location of the establishments of the main logistics firms and forwarders in Emilia Romagna (2018)	25
Figure 7 - Location of the establishments of the main logistics firms and forwarders by ATO in Emilia Romagna (2018)	26

Abbreviations

AD	Amministratore Delegato (Chief Executive Officer)
AdE	Agenzia delle Entrate (Revenue Agency)
AGCOM	Autorità per le Garanzie nelle Comunicazioni (Authority for Communications Guarantees)
AIM	Associazione Interessi Metropolitan
ANCI	Associazione Nazionale Comuni Italiani (National Association of Italian Municipalities)
ASIA	Archivio Statistico delle Imprese Attive (Statistical Archive of Active Firms)
BO	Bologna
CCI	Creative and Cultural Industries
CCIAA	Camera di Commercio, Industria, Artigianato e Agricoltura (Chamber of Commerce)
CEMAT	Conference of Ministers responsible for Spatial/Regional Planning
CENSIS	Centro Studi Investimenti Sociali
CEO	Chief Executive Officer
CLLD	Community Led Local Development
CNAO	Centro Nazionale di Adroterapia Oncologica (National Center of Oncologic Androtherapy)
CNCC	Consiglio Nazionale dei Centri Commerciali (Shopping Centers National Council)
COR	Committee of Regions
COVID-19	Coronavirus disease 2019
CRPE	Comitato Regionale per la Programmazione Economica
DASTU	Department of Architecture and Urban Studies, Politecnico di Milan
DEGURBA	Eurostat Degree of Urbanisation
DG REGIO	Directorate General for Regional and Urban Policy
EC	European Commission
EEN	Enterprise Europe Network
EGTC	European Grouping of Territorial Cooperation
ESPON	European Territorial Observatory Network
ESRI	Environmental System Research Institute
EU 13	European Union countries that joined after 2004
EU 15	European Union countries that were member states prior to 2004 (incl. UK)
EU	European Union
Eurostat	European Statistical Office
FR	France
FUA	Functional Urban Area
G&L	Globus & Locus
GVA	Gross Value Added
HSR	High Speed Rail
ID	Industrial District
IFAB	Big Data and Artificial Intelligence for Human Development Foundation
ISTAT	Istituto Nazionale di Statistica (Italian National Institute of Statistics)
ISUD	Integrated Sustainable development
IT	Italy
ITI	Integrated Territorial Investment
JRC/EC	Joint Research Centre of the European Commission
KIBS	Knowledge intensive business services
LAs	Local Authorities
LAU	Local Administrative Units
LMA	Labour Market Areas
MC	Monitoring Committee
MEF	Italian National Ministry of Economy and Finance
METREX	Network of European metropolitan regions and areas
MI	Milan
MIT	Italian National Ministry for Infrastructures
MNE	Multi National Enterprises
MR	Metropolitan Regions
NeWSps	New Working Spaces

NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
OMI	Osservatorio del Mercato Immobiliare (Real Estate Market Observatory)
PC	Piacenza
PIC	Piano Intercomunale Bolognese
PIM	Piano Intercomunale Milanese
PL	Poland
PNRR	Piano Nazionale di Ripresa e Resilienza (National Recovery and Resilience Plan)
POLIMI	Politecnico di Milan
PON	National Operational Program Metro
METRO	
POPSU	Observatory platform for urban projects and strategies
PRIN	Progetti di ricerca di Rilevante Interesse Nazionale (Research projects of significant national interest)
PTR	Piano Territoriale Regionale
PUMS	Piano Urbano della Mobilità Sostenibile (Urban Sustainable Mobility Plan)
PV	Pavia
R&D	Research & Development
RLM	Regione Logistica Milanese (Milan Logistic Region)
RP	Regional Portrait
SC	Synthetic Control
SI	Spatial Imaginaries
SLL	Sistema Locale del Lavoro (Local commuting area)
SME	Small and Medium Enterprise
SNAI	Strategia Nazionale Aree Interne (National Strategy for inner areas)
TPL	Trasporto Pubblico Locale (Local Public Transport system)
VP	Visual Platform
WP	Work Package

1 Creative and innovative economy in Milan-Bologna urban region

The creative industry includes a set of knowledge-based activities with basis on individual creativity, skill and talent including (i) traditional cultural industries (publishing, music, architecture, and engineering, performing arts) and (ii) technology-related creative industries (R&D, ICT, advertising) (Lazzeretti et al., 2008). Caves (2000) defined creative industries¹ as industries that provide products and services with broad cultural, artistic, or just entertainment value from the perspective of cultural economics; Howkins (2001) emphasized the economic attribute of creative products and proposed that the four most common industries, including copyright, patent, trademark, and design, which are subordinate to intellectual property rights, together constitute creative industries. Howkins (2001) also pointed out that creative industries are not only limited to art and culture industries but also include science and patent industries.

Since the significant contribution of Florida (2002), the location determinants of the creative industry have gained importance, and studies underline that creative firms are primarily clustered in metropolitan areas, around medium-sized and large cities, and cross-border areas. Lazzeretti et al. (2012) found that the historical and cultural endowments, the average size of creative industries, the size of the place, the productive diversity (Jacobs knowledge spillover), and the concentration of human capital and creative class (Clifton and Cooke, 2007) are the factors boosting the concentration of creative firms and creative employment in Italy. In addition to these factors, creative industries prefer locations with good access to clients, specialized labour and firms, universities, good transport accessibility (airports, freeways, train stations), as well as the presence of urban amenities, such as restaurants, cafes, shops, cultural and entertainment services (e.g., theatres, museums, cinemas, etc.) (Sivitanidou, 1999; Van Oort et al., 2003; Curran et al., 2016).

At the European Commission level, the first significant mention of the creative and cultural industries (CCI) was within the report published by KEA², entitled "The economy of culture in Europe", highlighting the increasing economic weight of this industries' type. Moreover, in 2010, the Commission's Green Paper on cultural and creative industries³ was published, which summarized the European guidelines for the following years, and identified the CCI growth and employment potential as one of the targets for becoming competitive in the changing global economy.

Within this context, the analysis of Lombardia and Emilia Romagna deserves special attention due to their particular economic dynamism in CCI. Indeed, the two regions show a concentration of creative firms (local units/establishments) in the metropolitan cities of Milan and Bologna, followed by the provincial capitals of Brescia, Parma, Bergamo, Modena, Reggio Emilia, Monza and Brianza, Rimini, Ferrara, Piacenza, and Ravenna. The global city of Milan is an outlier hosting 25,557 CCIs in 2017 if compared to Bologna, with 4,755 in 2017 (see Table 1). According to the data collected by Camera di Commercio di Milan Monza Brianza Lodi, Lombardia is home to the most significant creative sector in Italy, with 66 thousand companies over a total of 321 thousand; it also hosts more than a quarter of the jobs in the sector, 404,000 over 1,5 million at the national level, 303.000 in the city of Milan⁴.

¹ According to Lazzeretti et al. (2012) and Lazzeretti et al. (2016) the creative industry concerns the following sectors - NACE rev.2-: concerns the following sectors: publishing and printing; film, video and music; software; architecture; advertising; broadcasting, performing arts; design; R&D; photography (58.1, 59.1, 59.2, 58.2, 62, 71.1, 73.1, 72, 74.1, 74.2, 60.1, 60.2, 90).

² KEA, The economy of culture in Europe, 2006.

³ European Commission, Libro Verde: le industrie culturali e creative, un potenziale da sfruttare, April 2010.

⁴ <https://www.lombardiaspeciale.regione.lombardia.it/wps/portal/LS/Home/News/Dettaglio-News/2019/06-giugno/imprese-lombardia-regione-piu-creativa-italia/imprese-lombardia-regione-piu-creativa-italia>

Municipality	N. creative firms 2011	N. creative firms 2017	% change in n. creative firms (2011-2017)
Milan	23,987	2,5557	7%
Bologna	4,671	4,755	2%
Brescia	2,222	2,330	5%
Parma	1,957	2,052	5%
Bergamo	1,743	1,722	-1%
Modena	1,714	1,856	8%
Reggio nell'Emilia	1,416	1,467	4%
Monza	1,357	1,369	1%
Rimini	1,284	1,333	4%
Ferrara	1,155	1,150	0%

Table 1 - Top 10 municipalities for number of creative firms (local units)

Nevertheless, even smaller municipalities in Lombardia such as Busto Arsizio (textile-clothing industrial district/ID), Lecco (mechanical industry ID), Sesto San Giovanni in the first ring municipalities of the city of Milan and Legnano, and Emilia Romagna such as Carpi (textile-clothing ID), Imola, Faenza (mechanical industry ID), host a significant number of creative firms.

Indeed, as Felton et al. (2010) stated, the dense proximity cluster networks of the inner city are not the only environment in which creative industries operate because the geography of creative industries is more complex than the simple concentric circle models supposed. The literature has underlined that the simple co-location may not necessarily lead to networking, interaction, and collaboration. At the same time, community facilitators, like coworking managers, may play an essential role in enabling more synergies to stimulate encounters and collaborations inside the trust-based community-oriented environments (Fuzi, 2015).

In this respect, Table 1 and Map 2 show the change of the number of creative industry establishments⁵ in 2011-2017 and highlights a consistent increase in the provinces of Modena and Reggio Emilia, specifically in the two province capitals and in some municipalities hosting IDs: Carpi (textile-clothing), Mirandola and Guastalla (mechanical industry). This phenomenon is probably related to the new HSR supply in Reggio Emilia that enhanced the accessibility of the city on the capacity to attract creative sector, involving a large territorial section which is *de facto* the mobility basin of the Medio-Padana station, originally designed to serve, in the city of Reggio Emilia, a more extensive economic cluster and demographic basin. According to recent research by ERVET (ERVET elaboration on SMAIL and ASIA ** data, where ASIA data refer to the year 2015 – 4) 29.2% and 15% of employees in the sector are concentrated between Bologna and Modena, where there is a specialisation in creative services (in particular, in design and informatics), while Rimini and

⁵ The index is calculated as follows: $[(N.\text{creative local units in 2017} - N.\text{creative local units in 2011}) / (N.\text{creative local units in 2011})] * 100$

Ravenna are concentrated in the art, cultural and entertaining sectors⁶. In most cases, the activities are based on small companies, with a high percentage of autonomous work and freelance (more than 70% of the total).

These data also describe the fragmentation of the sector and its relationship with places: single-person businesses, often based on high skills and education profiles. can be exceptionally sensible to change in living conditions and quite propense to mobility. All in all, the creative and cultural industry in Emilia-Romagna, despite the economic crisis, has been characterised by a growth of 3,5% in terms of employees, compared to a regional average of +0,4%.

1.1 Innovative start-ups and small medium enterprises

Some additional elements can be retrieved from the analysis of innovative start-ups, whose location patterns are very similar to those of the creative industry (Map 1). These firms are registered by a unique business register (and the related incentives) in 2012⁷, which was established to support the birth and growth of innovative companies with high technological value. They are defined as businesses established by no more than sixty months, with yearly production value not exceeding €5 million from the second year of activity, and with the mission of developing, producing, and distributing innovative products or services with high technological value. Moreover, at least one of the following requirements must be met: R&D expenses are equal to or greater than 15% of the higher value between costs and total production value; at least one-third of the employees should be Ph.D., or Ph.D. candidates, or graduated personnel, who has previously worked as a researcher; the business is the owner or licensee of at least one industrial property right.

Map 1 illustrates the distribution of innovative start-ups registered until June 2020. The Map highlights a discontinuity within the Milan-Bologna region, where innovative start-ups are concentrated within and around the Milan pole, and then in the final part of the corridor (from Parma to Bologna). As stated for the creative industry, Milan is an outlier hosting 1,545 innovative start-ups. The other cities have considerably lower numbers: Bologna 227, Bergamo 123, Brescia 100, Reggio-Emilia 61, and Modena 55 (see Table 2).

Municipality	N. of innovative start-ups 2020
Milan	1,545
Bologna	227
Bergamo	123
Brescia	100
Reggio nell'Emilia	61
Rimini	58
Modena	55
Parma	44
Monza	28
Ferrara	28

Table 2 - Top 10 municipalities for number of innovative start-ups (2020)

Instead, the innovative small and medium-size enterprises (innovative SMEs) are distributed as follows: Milan 284, Modena 28, Bologna 22, Brescia 18, and Bergamo 11 (See Table 3). The business register of

⁶ ERVET research available at: http://www.ervet.it/wp-content/uploads/2013/09/Abstract_Economia-Arancione_completo.pdf

⁷ Law 17 December 2012, no. 221: <https://www.gazzettaufficiale.it/eli/id/2012/12/18/012G0244/sq>. For further information: <http://startup.registroimprese.it/isin/home>

innovative SMEs was established in 2015⁸ to strengthen economic competitiveness and foster innovation along various sectors. Innovative SMEs are limited companies, with less than 250 employees and a yearly turnover below €50 million, which comply at least two of the following criteria: R&D expenditure is equal at least to 3% of the higher value between costs and total production value; at least one-fifth of the employees should be Ph.D., or Ph.D. candidates, or graduated personnel, who has previously worked as a researcher; the enterprise is the owner or licensee of at least one industrial property right. As presented in section 1.7, one of the components of the competitiveness of the Milan-Bologna corridor is represented by the innovation capacity that can be partially attributed to the IDs in the mechanical industry: about one-fifth of the district firms patent, thus showing a higher value than that of non-district firms in 2018.

Municipality	N. of innovative SME 2020
Milan	284
Modena	28
Bologna	22
Brescia	18
Bergamo	11
Parma	10
Reggio nell'Emilia	10
Como	8
Pavia	8
Ferrara	8

Table 3 – Top 10 municipalities for number of innovative SME (2020)

1.2 The dynamics of New Working Spaces

A special focus can be finally added on the emergence of New Working Spaces (NeWSps⁹): Lombardia and Emilia Romagna regions host a significant number of new working spaces or collaborative spaces hosting creative firms, freelance operating in the creative industry, innovative SME and innovative start-ups. NeWSps are defined as physical spaces that favor the development of collaborative practices among individuals who hold different educational and professional backgrounds but are co-located in the same physical premises (Bouncken & Reuschl, 2018). Such spaces are expected to facilitate collaborative relationships within their premises (i.e. among their users) and across them (i.e. between their users and external actors). NeWSps are built and designed following the assumption that face-to-face contact positively impacts the propensity of individuals with different backgrounds to interact and exchange ideas (Oksanen & Ståhle, 2013), thus favouring the development of a sense of creative community (Garrett et al., 2014). They can be grouped into the following typologies: Coworking spaces (CSs), Smart work centres, Fab Labs, Open workshops, Hackerspaces, Living Labs, Corporate Labs and Coffee shops and public libraries (Micek et al., 2021; Mariotti et al., 2021a).

The first coworking spaces in Italy were born in 2008, during a recession and significant growth in 2013 and 2014. The studies about CSs show that the phenomenon is constantly changing: in 2017, ENEA recorded 578 CSs (Felici et al., 2017), in January 2018, Mariotti and Akhavan (2020) recorded 549, while according to Italiancoworking (2021) in January 2019 there were more than 660 CSs and as of January 2021: 779. The heterogeneity of the number of CSs depends on how they are defined; they are often considered coworking, mere real estate operations of sub-rental of spaces/offices.

⁸ Law 24 March 2015, no. 33: <https://www.gazzettaufficiale.it/eli/id/2015/03/25/15G00048/sq>

⁹ For an overview on NeWSps see the Coast Action project CA18214 "The Geography of new working spaces and the impact on the periphery" (<https://www.nmbu.no/en/projects/new-working-spaces>).

As of January 2018, 549 CSs are recorded in Italy, including all active privately owned and managed workplaces (Figure 1), and hosting users mainly specialised in the creative industry (75%). About 46.8% of CSs is concentrated in the Italian metropolitan areas (Milan with 112, Rome, Bologna with 49, Turin, Florence, follow) (Mariotti et al., 2021c). Cities, indeed, can be seen as the cradle of innovation, where colocation of firms (including CSs) that belong to both the same sector or different ones could exploit the cross-fertilizing ideas through the formal and informal exchange of information (Caragliu et al., 2016; Van Winden and Carvalho, 2016).

The concentration of CSs in Lombardia concerns the Milan metropolitan area and Monza, Bergamo, Como, and Brescia (see Figure 3). The other province capitals follow. Milan is the most attractive city for CSs, because of the concentration of high knowledge-intensive sectors, creative industries, including design and fashion. As of January 2021, 60% of CSs was located in Northern Italy (472), with prevalence in the North-West, particularly in Lombardy, which has a more substantial growth than the rest of the country (Italianco-working, 2021). In the year 2021 Milan hosted 119 coworking spaces, and in the period 2014-2021 the number of CSs increased from 68 to 119 units (+75%) (Mariotti et al., 2021b). The analysis of the CSs location in Milan shows a strengthening of some agglomerations in neighbourhoods with good accessibility, and a concentration of creatives. The location determinants of CSs are indeed urban agglomeration, which represents a variable of the economies of urbanization and localization, and the size of the market and the potential market and the presence of "productive" amenities – good access to customers, availability of resources, skilled labour force and specialized services, the presence of universities and research, good accessibility to transport networks - and of a "non-productive" type -presence of bars and restaurants, shops, cultural and entertainment activities, good urban quality (Mariotti et al., 2017). Nevertheless, Milan is experiencing an increase of CSs in peripheral neighbourhoods.

Unlike other regions such as Lombardy, Emilia-Romagna has a widespread diffusion that is consistent with its polycentric tradition. Emilia Romagna accounts for 115 NeWSps, concerning not only CSs, but also: fabLab, incubators, creative and cultural hub, business centre, polyfunctional space and open lab. In the year 2010, there were only 13 spaces in the region, which increased subsequently until 2012 in the order of three/five spaces per year. Since 2013, however, the growth has been exponential, with the birth, on average, of about 20 collaborative spaces per year. As described by Montanari (2020), these new working spaces are located in the nine cities (Figure 2), half of them are settled in medium-sized municipalities (i.e., with a population between 100,000 and 300,000 inhabitants), coinciding with the provincial capitals (Bologna, Forlì, Ferrara, Modena, Parma, Piacenza, Ravenna, Reggio Emilia and Rimini). While the presence of collaboration spaces in the Bologna regional capital is relevant, it is interesting to note that 26% are present in municipalities with less than 60,000 inhabitants.

A peculiarity of Emilia-Romagna concerns the presence of open laboratories that have been subsidised by a regional initiative and are located in all province capitals. They are interesting spaces oriented to sharing, collaboration, and innovation, including social innovation. A small share of them regards the cultural and/or creative hubs that welcome professionals from the creative industries and citizens interested in artistic issues and cultural programming proposed by space (Montanari, 2020).

1.3 Critical considerations: an important role of medium-size cities and the emergence of new location patterns for the creative industry

The analysis of the creative firms, innovative SMEs and start-ups showed that the Milan-Bologna corridor is characterised by a significant innovation capacity, which is one of the determinants of the area's competitiveness and may act as an activator of further heterogeneous spillovers for the interested areas. Although the dense proximity cluster networks of the larger cities are the preferred locations, even smaller and less central areas are becoming more and more attractive, as in industrial districts (Busto Arsizio-textile-clothing ID, Lecco-mechanical industry ID, Carpi-textile-clothing ID, Faenza -mechanical industry ID). Besides, while large cities are retaining innovative and creative firms, their growth (2011-2017) has been exploited in less central areas. An in-depth analysis of these firms' typologies and sector specialisation will allow us to understand the relationship with the local industrial context. Finally, a better understanding of the innovative firms, their growth, and location patterns will permit policymakers to develop tailored policy tools to reduce the mortality rate and enhance the diffusion of such innovation in the local context, even in peripheral areas.

Another issue worth considering and exploring is the location of NeWSps hosting creative and innovative workers, firms, and start-ups. Workspaces reflecting a culture of collaboration and openness have increased in the last decade and have attracted a renewed interest during the present Covid-19 pandemic. The pandemic has, indeed, affected: (i) working lifestyle worldwide; (ii) the geography of work; (iii) new models of working spaces to accommodate teleworkers.

Working lifestyle has changed worldwide to guarantee social distancing and remote working practices have massively emerged: teleworking, remote working, home working, which exhibited significant effects on workers as concerns productivity, innovation, quality of life and well-being. The geography of work has changed, with big cities experiencing the “leave” and/or “exodus” of knowledge workers, who mainly started working from home, thus reducing commuting. Recent studies underline that the hinterland or suburban areas of big cities gained workers. They will probably keep their attractiveness in the medium-long run (Florida et al., 2020), since teleworking became more and more recognised as feasible and advocated practice by both the employees and employers. Under the pandemic, the percentage of people working from home (First Place) has significantly increased (Sostero et al., 2020), which tends to mitigate the aftermath of Covid-19 on public health and economy around the globe with countries' variations. Nevertheless, when the “First place” (home) is not the most efficient working place and the “Second place” (office) cannot host the workers due to social distancing limitations, the “Third place” (Oldenburg, 1989) represents a valuable alternative for teleworkers because it offers: 1) access to adequate technology, 2) reduced risks of isolation, 3) reduced costs for employees (for example, by providing access to a cheaper habitat, or by reducing commuting costs), 4) improved job satisfaction and well-being, 5) enhanced work-life balance (Manzini-Ceinar, Mariotti, 2021). Within this context, NeWSps are changing their business model to be more attractive for teleworkers (Mariotti et al., 2021d) and local authorities are using public spaces, such as public schools and libraries (Di Marino & Lapintie, 2018), to relocate employees and students.

Specifically, the development of such spaces can be fostered in more peripheral locations, where CSs may trigger entrepreneurship in regions with scant entrepreneurial settings using tailored policies and creating hard infrastructures. The potential benefits of a workplace located in a remote area are higher general well-being, lower congestion, less polluted air, lower-cost location, exploiting institutional leeway, etc. The attraction/retention of teleworkers to peripheral areas may represent an opportunity even for the places “left behind” (Rodríguez-Pose, 2018). Thus tailored policy tools can help to extend economic opportunities to those communities and their residents.

2 Transport and logistics in Milan-Bologna urban region

The transport and logistics industry¹⁰ (from now on logistics), which is about managing the supply chains from raw materials to the final product and service delivery, plays a crucial role in modern economies. Globalisation, outsourcing, just-in-time, vertical disintegration, modern supply chains, and e-commerce rely heavily on efficient logistics. Logistics is also directly a significant contributor to the economy. The estimated size of the global logistics market is approximately US\$ 4,730 billion (IMARC, 2019). In Europe, logistics accounts for about 8.1% of employment. The logistics industry is one with a high reliance on the highway network, particularly highways, which can lead to shorter distribution times and reduce the operating costs of logistics firms and improve delivery times and reliability. These benefits will accrue to firms because of being closer to larger labour markets, having improved access to input and product markets, and increasing the scale and spatial concentration of other firms.

Logistics is now gaining a strategic role in successfully implementing time-based competitive strategies and facilitating the managing of complex and increasingly global supply chains. The literature has also documented a bidirectional link between economic development and logistics performance (see Arvis et al. 2007). Indeed, several countries have undertaken concerted efforts for improving their logistics sector, upgrading their infrastructure and technology to get a bigger slice of the market (Bolumole et al. 2015). The UK Logistics Report clearly emphasizes infrastructure as key for the productivity and competitiveness of the sector (FTA, 2016).

Vickerman (1996) describes how transport infrastructure affects accessibility, industrial location, and regions' growth and development. Specifically, the author states that transport infrastructures can have two main effects on economic growth: non-spatial and spatial effects. Non-spatial effects are the effects of infrastructure investment on the aggregate level of economic activity, productivity, and competitiveness in an economy. In contrast, spatial effects consider how infrastructure can lead to a differential performance in different locations, either between regions or within regions.

Access to transportation infrastructure and proximity to urban areas are essential location determinants for logistics firms, thus confirming the attitude of this sector, which is market-oriented, to be in or close to the consumer market (Rivera et al., 2014; Mariotti, 2015; Holl and Mariotti, 2017, 2018). Access to efficient transportation infrastructure is essential as transportation speeds and costs are crucial determinants of efficient logistics. Moreover, transport infrastructure improvements also open up local markets, exposing local logistics operators to greater competition.

In addition, Graham (2007) also finds that services, including the transport, storage and communication sector, enjoy higher returns from effective density than manufacturing. These benefits will accrue to firms due to being closer to larger labour markets, having improved access to input and product markets, and an increase in the scale and spatial concentration of other firms.

Specifically, the demand for "logistics floor space"¹¹ is expected to grow substantially in advanced economies, while the need for "industrial floor space" is expected to decline (McKinnon, 2009). The growth in logistics floor space is correlated with the predicted growth of freight transport volumes, estimated in the EU to reach about 82% in 2050 (European Commission, 2011). It is, therefore, crucial for policymakers to investigate the location decisions of transport and logistics firms since it is strongly related to the demand for freight transport, and the choice of freight transport modes (Bowen, 2008; Holl, Mariotti, 2017). The issue is also of direct relevance for urban planning, but it is still often neglected in the planning process (Heitz and Beziat, 2016). The location of logistics activities raises land consumption, contributes to urban sprawl, and

¹⁰ Transport and logistics industry concerns the following sectors -NACE rev.2-: H. Transportation and storage.

¹¹ The "logistics floor space" is the floor area of a logistics planned usage, while "industrial floor space" is the floor area of an industrial planned usage. The two may not coincide since the main location determinants of the logistics industry and the manufacturing industry vary with a prevalence of accessibility and cost of land in the first case, and, for instance, market size and labour cost or quality in the second (Holl & Mariotti, 2017).

can also reduce the well-being of individuals in local communities because of noise, air pollution, congestion and safety (for a review see Aljohani and Thompson, 2016).

2.1 Logistics: state of the art in Milan-Bologna urban region

Lombardia and Emilia Romagna regions show a very high transport accessibility level. As concerns, the Milan NUTS3 province, the infrastructures for transport and logistics are mainly concentrated along the main road routes towards Novara, Brescia, and Piacenza. In contrast, in the Bologna NUTS3 province they are concentrated along the Via Emilia connecting Piacenza to Rimini. In the next two sub-paragraphs, a focus on the two regions is proposed.

2.1.1 Lombardia region

Specifically, Lombardia has been defined as one of the "four European engines" with Catalonia, Baden-Württemberg and Rhone-Alpes. Moreover, Lombardia is the centre of the so-called Regione Logistica Milanese (RLM) – Milan Logistics Region – which also includes the provinces of Novara in Piemonte and of Piacenza in Emilia-Romagna (Dallari and Curi, 2020). Moreover, in the last decade, the Region has strongly invested in new road infrastructures intending to bypass Milan and improve accessibility and connectivity in the wider urban region, with essential impacts on regional mobility (*TEEM* – a new eastern bypass to the city of Milan; BreBeMi, connecting the east sector of the urban region; Pedemontana, providing a new transversal connection among the piedmont cities, north of Milan), and specifically in terms of improvements on mobility performances.

Lombardia handles by road about 300 million tons of goods, yearly, of which 120 million IN/OUT from and to the rest of Italy and 36 million from the rest of the world. The region hosts 13 intermodal terminals as (Dallari and Curi, 2020):

- Busto Arsizio-Gallarate terminal, managed by Hupac;
- Segrate terminal;
- Freight village and logistics pole of Mortara in the industrial area of CIPAL (inter-municipal consortium for Alta Lomellina);
- Busto Arsizio-Sacconago terminal in the province of Varese, managed by Ferrovie Nord Milan.

The city of Milan and its hinterland are very attractive for logistics, including logistics MNEs, because of the high accessibility to the Italian market, the main road network, and a rich network of services (banks, insurances, broker, lawyer offices, etc.). Specifically, the logistics activities, which require large areas where to operate, are mainly located outside but close to global or large cities (Holl and Mariotti, 2017). There has been no specific logistic policy promoted at the regional level favouring the location of logistic poles along main highways. This has generated a quite sprawled system, with main sites dispersed in an area of 45 km ray around the city and a total 14 million square meters of built-up spaces in 2017 (Dallari and Curi, 2020).

Regione Lombardia is part of the Rhine Alpine corridor, supporting the so-called "Blue banana", the most densely populated and economically most robust urban region in Europe. It includes cities like Brussels and Antwerp in Belgium, the Randstad region in the Netherlands, the German Rhine-Ruhr and Rhine-Neckar regions, the Basel and Zürich regions in Switzerland, and Milan and Genoa regions in Northern Italy. Annually more than one billion tonnes of freight are transported along this Corridor, which represents 19% of EU's total GDP (based on 2010 figures) and is one of the busiest freight routes in Europe, connecting the central North Sea ports of Rotterdam and Antwerp to the Mediterranean basin in Genoa, while providing connections to several east-west axes. In terms of revenues, the first five logistics firms located in Lombardia are: Bartolini, DHL express, Schenker Italiana, DSV, and Kuehne + Nagel; in terms of employees, they are Amazon Italia Logistica, Bartolini, DHL Express, Schenker Italiana e DSV. As concerns Ebitda: Bartolini, Amazon Italia Logistica, DHL Express, Bertani Trasporti and DSV. Moreover, the big players in delivery service are: Glis, Ups, Tnt, FedEx, RPost and Sda, which count 349 among warehouses, depots, and areas for sorting and goods delivery.

It emerges that large and medium-sized cities like Milan and the other province capitals attract a large share of firms and workers (Figure 4 and Figure 5) except for Varese, Pavia, Vigevano, Legnano and Lecco. Nevertheless, even smaller municipalities closer to provincial capitals and larger cities attract logistics firms that are probably looking for land availability with good accessibility and more relative to the market. The location determinants of the logistics players are also localization economies (location of logistics firms and workers),

as in the cases of Castel San Giovanni (PC), San Pietro Mosezzo (NO) and Settala (MI). Specifically, Lombardia hosts the warehousing of the e-commerce operators like Amazon (in Castel San Giovanni, PC), Yoox (in Landriano, PV) and Zalando (in Stradella, PV), that have privileged the provinces in the South of Milan (Pavia and Piacenza) (Dallari and Curi, 2020).

In 2009-2019 there has been a massive increase of logistics premises: since 2009 the square metres of warehousing have almost doubled (from 7 million sqm in 2009 to 12 in 2019). These properties have privileged the southern provinces (Lodi, Pavia, Piacenza) and Novara, which hosts one of the more dynamic intermodal terminals of the region, because of its barycentric position and the logistics vocation of the area (Figure 4). In 2021, the large firm Kering (which manages high fashion brands like Gucci) planned to invest in this terminal, locating nearby (in Trecate, VA) its central and worldwide warehouse, relocating it from Canton Ticino.

The general objectives of the Regional Programme for Mobility and Transport (RPMT, 2016)¹² are: (i) to improve Lombardy's connectivity in order to strengthen its competitiveness and socioeconomic development; (ii) to ensure freedom of movement for citizens and cargo and guarantee accessibility to the territory; (iii) to guarantee the quality and safety of transport and the development of integrated mobility; (iv) to promote the environmental sustainability of the transport system (Regione Lombardia, 2016).

2.1.2 Emilia Romagna region

In Emilia Romagna, the Integrated Transport Regional Plan 2025 (Piano Regionale Integrato dei Trasporti-PRIT 2025, Regione Emilia-Romagna, 2019 a,b) has reorganised the region one logistics platform, intending to interconnect several transport modes efficiently. One of the main infrastructural elements of the platform is the railway network with the related logistics structures and nodes. The PRIT 2015 has the objective to increase, before the year 2025, freight flows by rail of at least +30%, enhancing the modal share of at least +13%.

The route Ferrara-Bologna-Ravenna, Bologna Interporto, and the port of Ravenna belong to the “core network” of the TEN-T networks within the Adriatic-Baltic Corridor and of the Mediterranean Corridor, while Verona-Bologna-Rimini belongs to the Corridor Scandinavian-Mediterranean. In 2018 about 19.43 million tons of goods are handled by rail, about 211 million tons are handled by road, and 26.68 are handled in the port of Ravenna. About 13.6% of the total handling of goods originating from Italy reaches Emilia-Romagna; on the other hand, about 13.4% of goods arising from Emilia Romagna are directed to the rest of Italy¹³. The port of Ravenna registers 6% of the Italian maritime flows of goods, and it is in the third position after the ports of Trieste and Genoa and followed by Livorno and Gioia Tauro.

Emilia-Romagna hosts the following main intermodal terminals (see also Figure 4 – Great functions and main infrastructures of the Milan-Bologna urban region in IMAGINE's ANNEX I – Regional Portrait):

- Interporto Bologna (Bologna)
- Terminal Rubiera/Logtainer (Reggio nell'Emilia)
- Dinazzano/Dinazzano Po (Reggio nell'Emilia)
- Interporto Parma/Cepim (Parma)
- Terminal Piacenza/HUPAC (Piacenza)
- Villaselva/Lotras (Forlì -Cesena)
- Porto Ravenna (Ravenna)

¹² On 20 September 2016, the Lombardy Regional Council, with resolution no. 1245, approved the Regional Programme for Mobility and Transport (RPMT). It represents an integrated planning tool of great importance as “it constitutes the system of mobility relationships, based upon demand and supply, comparing it with the layout of existing infrastructure and identifying the integrated planning requirements of infrastructural networks and transport services” (Regional Law 6/2012).

¹³ Regione Emilia-Romagna (2019), Mobilità e trasporti: Rapporto Annuale di Monitoraggio della mobilità e del trasporto in Emilia-Romagna, ottobre 2019.

Similarly to Lombardia, the main cities in Emilia-Romagna and their hinterlands are very attractive for logistics because of the high accessibility to the Italian market, to the main road network and to a rich network of services. Differently from Lombardia where the logistics industry is mainly concentrated in the Regione Logistica Milanese (RLM), in Emilia-Romagna they are located in several poles along the Via Emilia (see Figure 6 and Figure 7). Specifically, the main platforms/freight villages (Bologna, Parma, Piacenza) attracted the main headquarters of leader logistics operators (both national and international express couriers, and third-party logistics firms), and commodity logistic operators (road transport and handling). These areas are therefore attracting also for logistics real estate players.

Lombardia and Emilia-Romagna are very much interconnected; specifically, the port of Ravenna is linked to the Lombardia system because several firms have their principal logistics hub or terminal container in Ravenna. Moreover, the regional platforms/ freight villages of Bologna and Parma and the Piacenza Terminal are connected to Lombardia.

The first cities attracting logistics establishments at the year 2017 are: Milan (5,913), Bologna (1,278), Ravenna (714) – because of the port -, Brescia, Modena, Parma, Rimini, Cesena, Reggio Emilia, Piacenza, Forlì. Map 3 shows the change rate of the logistics firms in 2011-2017, where a decrease in number in most municipalities occurred, which has been, nevertheless, counterbalanced by an increase in the number of employees, thus showing an increase in firm size. Exceptions are represented by: (i) the area of Reggio-Emilia and Modena, with a growth of the number of logistics firms that may be related to handling and exporting of flows of goods, produced by the industrial districts in textile and clothing (Carpi) and mechanical industry (Mirandola); (ii) municipalities in the southwest of Milan (Assago, Basiglio, Morimondo, Calvignasco, Lacchiarella, Noviglio, Vernate, Zibido San Giacomo); (iii) the area of Piacenza, important logistics node; (iv) the municipalities in the north of Bologna towards Ferrara¹⁴.

2.2 Critical considerations: a logistic region is emerging with limited international role, but important territorial local impacts

The analysis shows the emergence of a sizeable logistic region centered on Milan, which goes from Novara to Brescia. Including Piacenza serves the entire north of the country, the main attractor and generator pole at the national level. Nevertheless, the region is not competing with other traditional logistic regions in Europe (Dallari and Curi, 2020)

While road transportation infrastructures have attracted the location of logistics firms mainly settled in metropolitan cities (Milan and Bologna), also suburban and rural areas (with a good accessibility) have become attractive towards logistics firms mainly specialized in land transportation, that involves lower value-added logistics operations, requiring lower skilled labour force, and warehousing.

As for the case of Pavia and Piacenza provinces, it is evident a trend of growth in the location of logistic activities, related to the opportunity to serve large urban areas, based on good accessibility. Nevertheless, these locations are stressing the existing infrastructures, providing a limited contribution to the job market, and produce a consistent environmental impact on the local contexts

Specifically, warehousing, which is more and more active in e-commerce, exhibits an increase in both firms and employees (Unioncamere, 2018)¹⁵. The most recent data of the present analysis refer to the year 2017; nevertheless, e-commerce increased substantially in 2020 because of the Covid-19 pandemic. According to the Observatory E-commerce B2c by Politecnico di Milan (2020)¹⁶, during the lockdown, e-commerce has been the main engine of consumption. The period January-May 2020 counted 2 million new online consumers in Italy, reaching a total of 29 million. About 1.3 million of the two, can be attributed to the Covid-19 emergency. Both Lombardia and Emilia-Romagna are very attractive for the e-commerce because of: (i) geographical position; (ii) transport and logistics network provision; (iii) proximity to manufacturing firms and

¹⁴ Source: ISTAT - Registro statistico delle unità locali (ASIA - UL) - <https://www.istat.it/it/archivio/234627>

¹⁵ For Emilia-Romagna region, see UNIONCAMERE (2018), *Economia Emilia-Romagna*, Bologna.

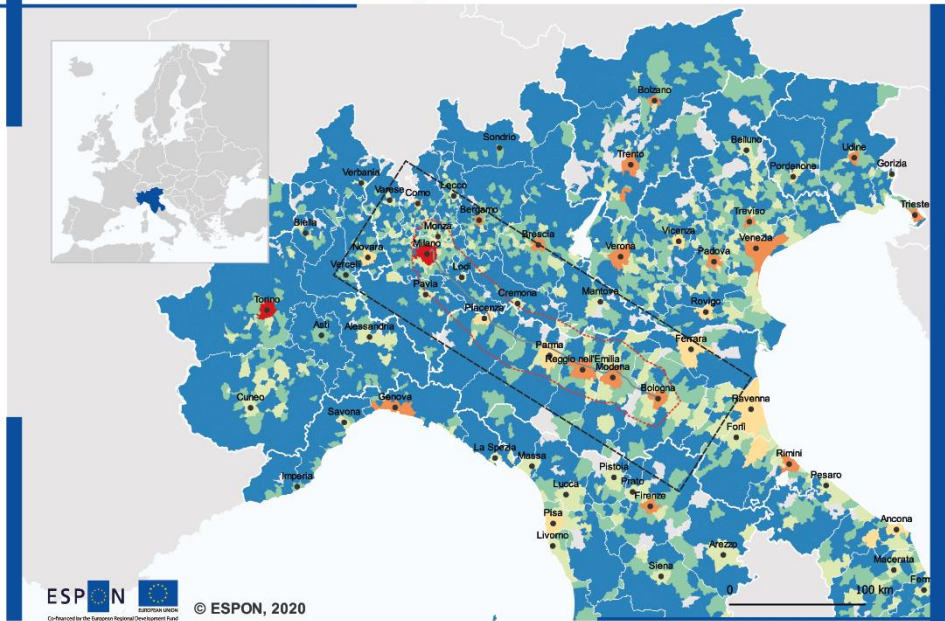
¹⁶ Osservatorio e-commerce b2C, Politecnico di Milan (ottobre, 2020) (<https://www.osservatori.net/it/eventi/on-demand/convegni/convegno-presentazione-ricerca-osservatorio-ecommerce-b2c>).

to goods that are handled online; (iv) they represent the natural logistics barycentre of a vast market (north and centre Italy, central Europe).

It is, therefore, worth underlying that the location of logistics activities can contribute to local development. Still, it also raises land consumption, contributes to urban sprawl, and is a generator of negative external costs for the community (Holl and Mariotti, 2017). Indeed, transport and logistics are among the sectors consuming more land, since in the globalized world, the demand for “logistics floor space” is expected to grow substantially. Transportation infrastructure improvements are also likely to have contributed to logistics sprawl: firms are increasingly privileging suburban locations and, to some extent, rural areas with good accessibility to the detriment of central cities, likely due to their lower factor prices and land availability. These communities with good accessibility stand to benefit most from the new emphasis on supply chain management. Still, they will also, of course, bear the costs of increased inbound and outbound goods traffic.

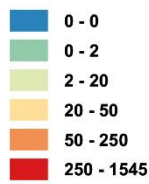
Therefore, a better understanding of the logistics industry and its tendencies towards sprawl or clustering is important for society for the effects they produce at the firm level (e.g. clustering may bring about higher productivity in logistics firms), and at the local level (e.g., sprawl is associated to costs of increased inbound and outbound goods traffic). Related to energy transition and pollution problems, transport and logistics must address issues regarding energy use and carbon dioxide (CO₂), particulate matter, and mono-nitrogen oxide (NO_X) emissions. Indeed, freight transport in Europe accounts for 25% of all greenhouse gases and 50% of particulate matter. Infrastructure development must be guided by a modal integration strategy to optimize the invested resources, reduce land consumption and make interventions efficient. The construction of infrastructure is not enough if it is not integrated with services that facilitate intermodality. Concerning the intermodality of people, it should be noted that the upgrading of the suburban and regional rail service and the metro network is not always accompanied by adequate parking provision near the stations (cfr. ANNEX III - Exploring state of the art in terms of integrated mobility offer). As far as goods are concerned, at present, the spread of logistics platforms and freight centres on the territory is not dictated by criteria of transport efficiency, nor by a precise localised plan on a regional scale. The result of these non-rational choices is the proliferation of settlements spontaneously and uncontrollably located in areas not always suitable for hosting a logistic settlement, with dramatic repercussions on infrastructure and local traffic.

IA 1.1 – Number of innovative start-ups



Territorial level: LAU2 (version 2011)
 Source: ESPON IMAGINE, 2020
 Origin of data: Registro Imprese, 2020
 © ISTAT for administrative boundaries

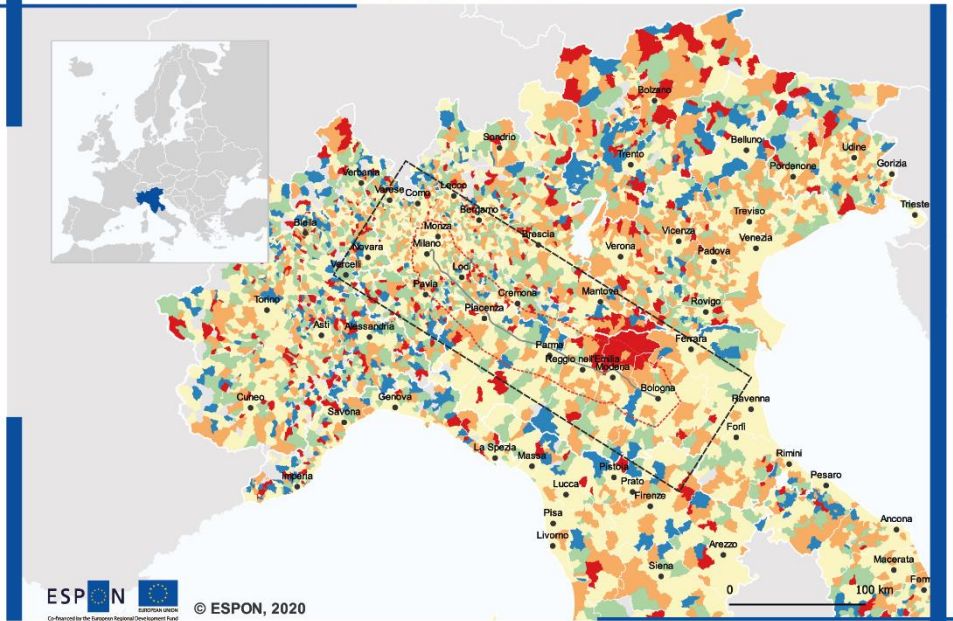
Number of innovative start-ups 2020



- Provincial/Metropolitan Capital
- ▭ Milan-Bologna frame (300x100 km)
- ▭ HSR Milan-Bologna (30 km buffer)
- ▭ Sea / Lakes
- ▭ no data / area not included in the analysis

Map 1 - IA1 - Number of innovative start-ups

IA 1.2 – Change in the number of creative industries



Territorial level: LAU2 (version 2011)
 Source: ESPON IMAGINE, 2020
 Origin of data: ISTAT, 2011, 2017
 © ISTAT for administrative boundaries

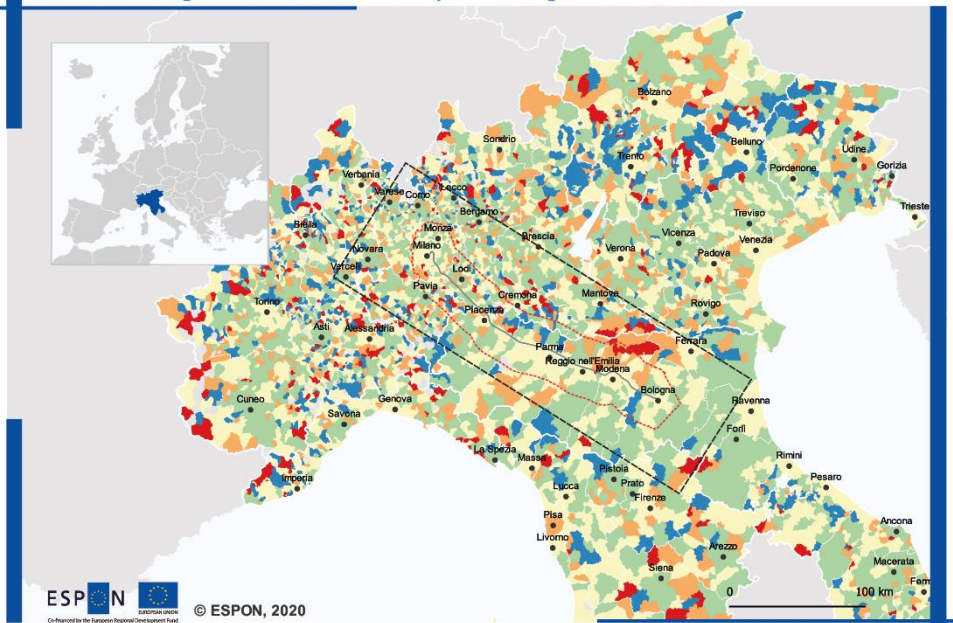
Rate of change in the number of creative industries (local units) 2011-2017

- 1 - -0,5
- 0,5 - -0,1
- 0,1 - 0,1
- 0,1 - 0,5
- 0,5 - 15,5

- Provincial/Metropolitan Capital
- Milan-Bologna frame (300x100 km)
- HSR Milan-Bologna (30 km buffer)
- Sea / Lakes
- no data / area not included in the analysis

Map 2 - IA2 - Change in the number of creative industries

IA 1.3 – Change in the number of transport and logistics industries



Rate of change in the number of transport and logistics industries (local units) 2011-2017

- 1 - -0,5
- 0,5 - -0,1
- 0,1 - 0,1
- 0,1 - 0,5
- 0,5 - 15,5

- Provincial/Metropolitan Capital
- ▭ Milan-Bologna frame (300x100 km)
- ▭ HSR Milan-Bologna (30 km buffer)
- ▭ Sea / Lakes
- ▭ no data / area not included in the analysis

Map 3 - IA3 - Change in the number of transport and logistic industries

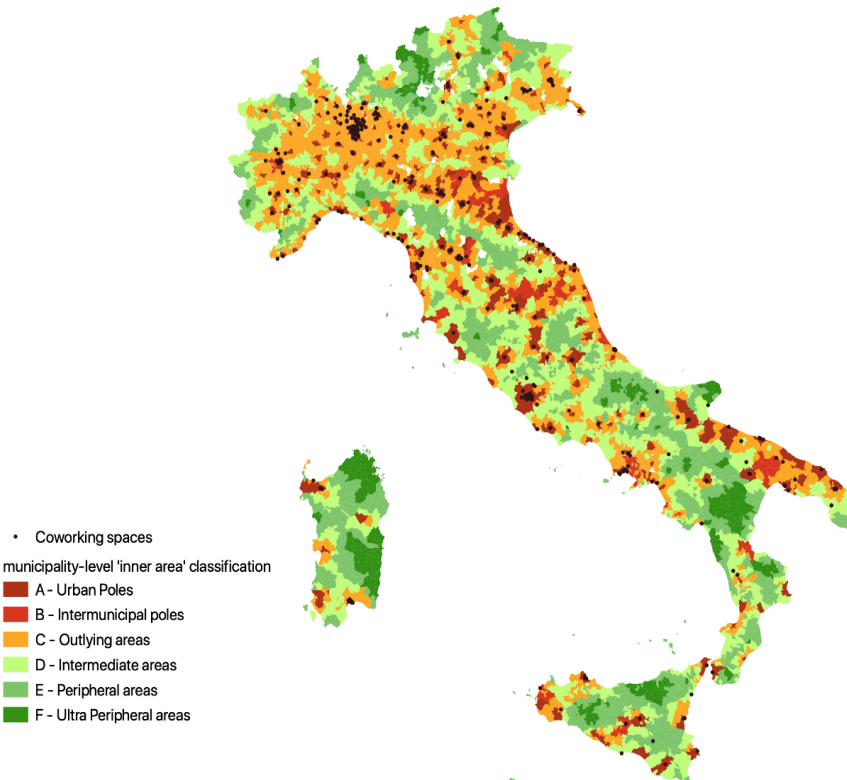


Figure 1 - Location of coworking spaces by Italian municipalities according to the SNAI classification “Inner Areas” (2018)¹⁷

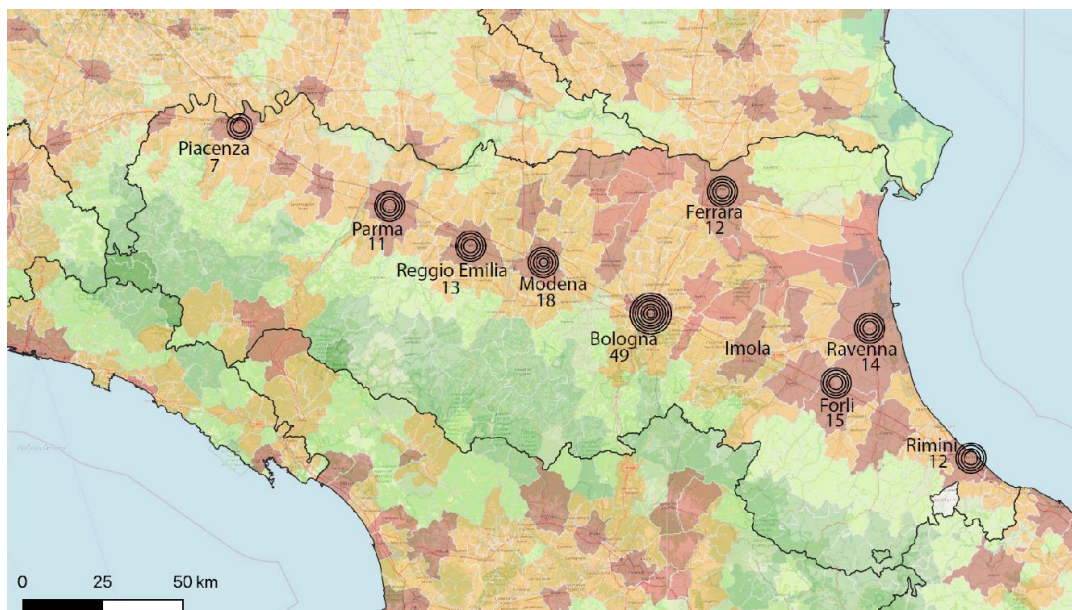


Figure 2 - Location of NeWSps by municipalities in Emilia Romagna according to the SNAI classification “Inner Areas” (2020)¹⁸

¹⁷ Source: Mariotti et al. (2021)

¹⁸ Source: Elaboration on Scapolan et al. (2020)

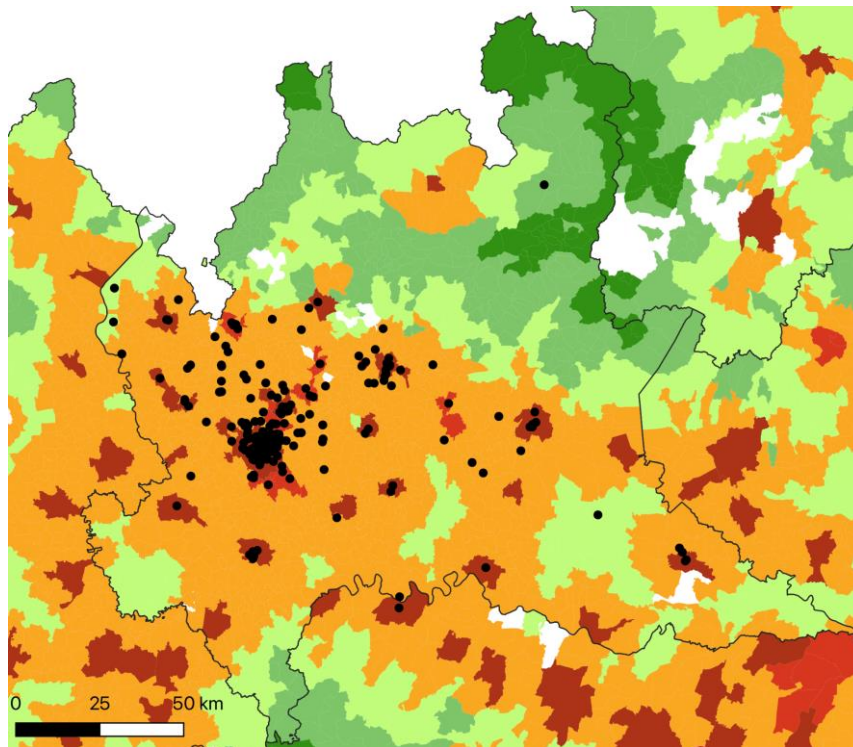


Figure 3 - Location of NeWSps by municipalities in Lombardia according to the SNAI classification “Inner Areas” (2020)

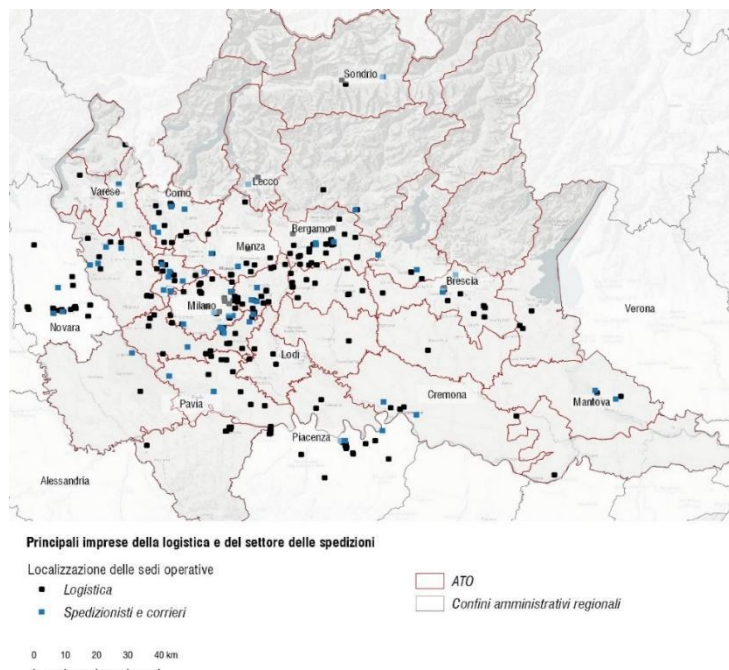


Figure 4 - Location of the establishments of the main logistics firms and forwarders in Lombardia (2018)¹⁹

¹⁹ Source: Saloriani (2020)

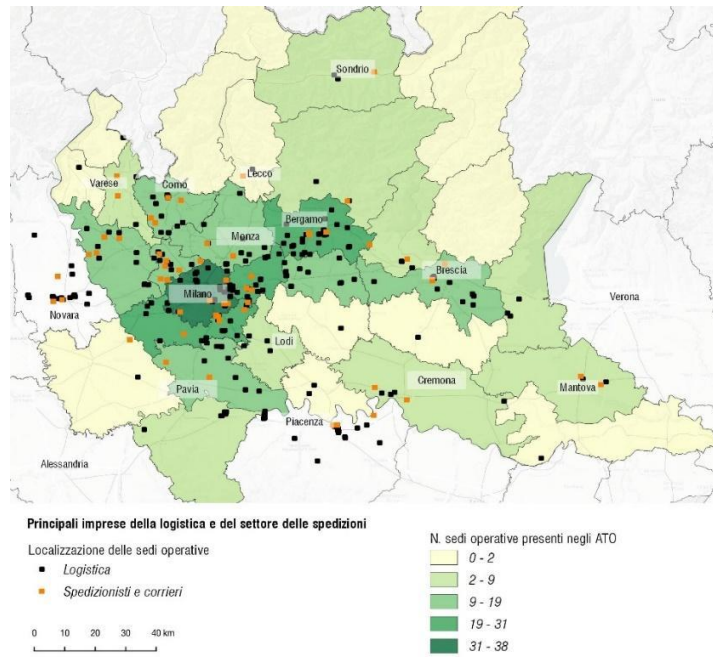


Figure 5 - Location of the principal establishments of the logistics firms and forwarders by ATO (Ambiti Territoriali Omogenei) in Lombardia ²⁰

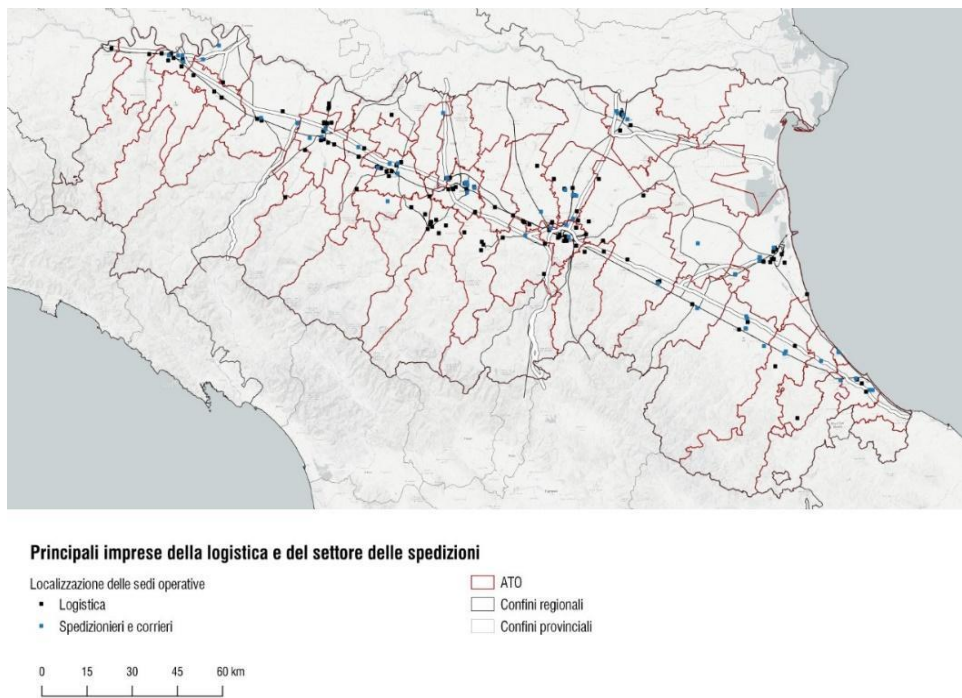


Figure 6 - Location of the establishments of the main logistics firms and forwarders in Emilia Romagna (2018)²¹

²⁰ Source: Saloriani (2020)

²¹ Source: Saloriani (2020)

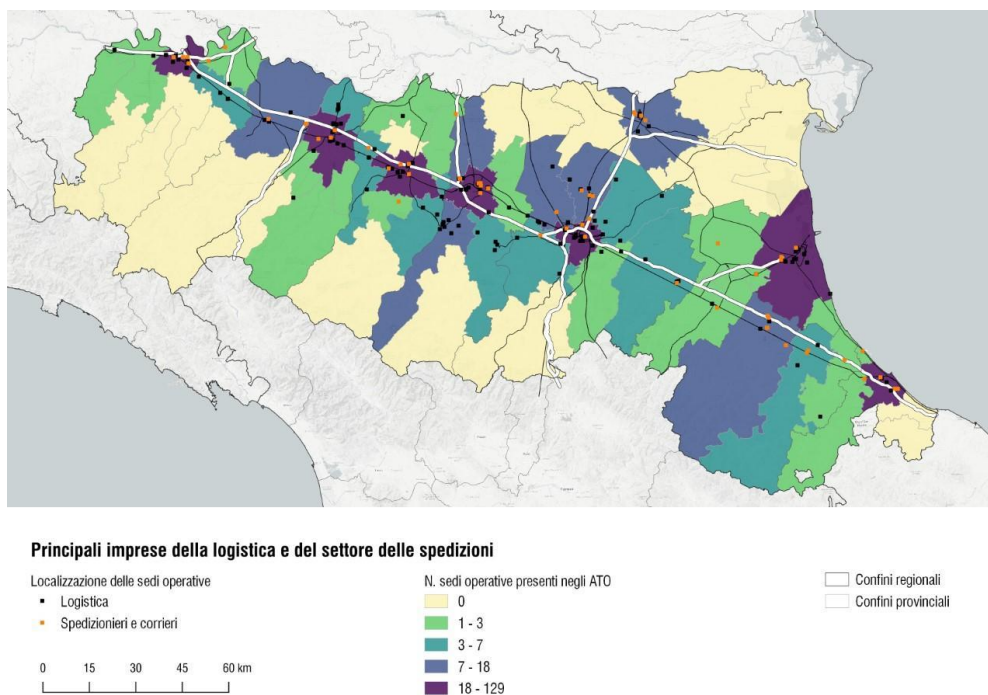


Figure 7 - Location of the establishments of the main logistics firms and forwarders by ATO in Emilia Romagna (2018)²²

²² Source: Saloriani (2020)

References

- Aljohani K, and Thompson RG (2016) Impacts of logistics sprawl on the urban environment and logistics: taxonomy and review of literature. *Journal of Transport Geography* 57: 255-263.
- Arvis JF, Mustra MA, Panzer J, Ojala L, and Naula T (2007) Connecting to Compete. Trade Logistics in the Global Economy. Report, World Bank, Washington DC.
- Bolumole YA, Closs DJ, and Rodammer FA (2015) The Economic Development Role of Regional Logistics Hubs: A Cross-Country Study of Interorganizational Governance Models. *Journal of Business Logistics* 36(2): 182-198.
- Bouncken RB, and Reuschl AJ (2018) Coworking-spaces: how a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship. *Review of Managerial Science* 12: 317–334.
- Bowen JT (2008) Moving places: the geography of warehousing in the US. *Journal of Transport Geography* 16: 379-387.
- Caragliu A, de Dominicis L, and de Groot HLF (2016) Both Marshall and Jacobs Were Right! *Economic Geography* 92(1): 87–111.
- Caves RE (2000) *Creative Industries: Contracts Between Art and Commerce*. Harvard University Press.
- Clifton N, and Cooke P (2007) The “creative class” in the UK: An initial analysis. Regional Industrial Research Report no.46, Centre for Advanced Studies, Cardiff, UK.
- Curran D, Lynn T, and O’Gorman C (2016) The Role of Personal Factors in the Location Decision of Software Services Start-up Firms. *European Planning Studies* 24(3): 551-567.
- Dallari F, and Curi S (2020) Regional Logistics Performance, La Regione Logistica Milanese e l’Europa a confronto. Report, Camera di Commercio di Milan Monza Brianza Lodi, Italy.
- Di Marino M, and Lapintie K (2018) Exploring multi-local working: challenges and opportunities for contemporary cities. *International Planning Studies* 25(2): 129-149.
- European Commission (2011) Roadmap to a single European transport area – Towards a competitive and resource efficient transport system. Report, European Commission, Brussels.
- Felici B, Martucci G, Oteri MG, Penna M, and Tati E (2017) Coworking...che? I nuovi volti dell’organizzazione del lavoro: un’indagine sul coworking in Italia. Report, ENEA, Roma.
- Felton E, Collis C, and Graham P (2010) Making Connections: creative industries networks in outer-suburban locations. *Journal of Australian Geographer* 41(1): 57-70.
- Florida RL (2002) *The rise of the creative class: and how it’s transforming work, leisure, community and everyday life*. New York: Basic Books.
- Florida R, Rodríguez-Pose A, and Storper M (2020) Cities in a Post-COVID World. *Papers in Evolutionary Economic Geography* 2041. Utrecht University, Department of Human Geography and Spatial Planning.
- FTA (2016) Logistics Report 2016: prosperity, productivity, resilience. Report, FTA, Kent, UK.
- Fuzi A (2015) Co-working spaces for promoting entrepreneurship in sparse regions: the case of South Wales. *Regional Studies, Regional Science* 2(1): 462–469.
- Garrett LE, Spreitzer GM, and Bacevice PA (2014) Co-constructing a sense of community at work: the emergence of community in co-working spaces. *Organization Studies* 38(6): 821-842.
- Georgiadis P, and Besiou M (2008) Sustainability in electrical and electronic equipment closed-loop supply chains: A System Dynamics approach. *Journal of Cleaner Production* 16: 1665–1678.
- Graham DJ (2007) Variable returns to agglomeration and the effect of road traffic congestion. *Journal of Urban Economics* 62: 103-120.

- Heitz A, and Beziat A (2016) The parcel industry in the spatial organization of logistics activities in the Paris Region: inherited spatial patterns and innovations in urban logistics system. *Transport Research Procedia* 12: 812-824.
- Howkins J (2001) *The Creative Economy. How people make money from ideas*. The Penguin Press.
- Holl A, and Mariotti I (2017) The geography of logistics firm location: the role of accessibility. *Networks and Spatial Economics* 18: 1-25.
- Holl A, and Mariotti I (2018) The geography of logistics firm location: the role of accessibility. *Networks and Spatial Economics* 18(2):337-361.
- IMARC (2019) Logistics Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2019-2024. Report, available at: <https://www.imarcgroup.com/logistics-market/toc> (accessed 16 October 2019).
- Islam MS, Moeinzadeh S, Tseng M, and Tan K (2020) A literature review on environmental concerns in logistics: trends and future challenges. *International Journal of Logistics Research and Applications* 24(2): 126-151.
- Italiancoworking (2021) Italian coworking survey 2021, I numeri del coworking in Italia. Available at: <https://www.italiancoworking.it/i-numeri-del-coworking-in-italia> (accessed 30 January 2021).
- Lazzeretti, L, Boix R, and Capone F (2008) Do creative Industries Cluster? Mapping Creative Local Production Systems in Italy and Spain. *Industry and Innovation* 15(5): 549-567.
- Lazzeretti L, Capone F, and Boix R (2012) Reasons for Clustering of Creative Industries in Italy and Spain. *European Planning Studies* 20(8): 1243-1262.
- Lazzeretti L, Capone F, and Seçilmiş IE (2016) In search of a Mediterranean creativity. Cultural and creative industries in Italy, Spain and Turkey. *European Planning Studies* 24(3): 568-588.
- Manzini Ceinar I, and Mariotti I (2021) The effects of Covid-19 on coworking spaces: patterns and future trends. In: Mariotti I, Di Vita S, and Akhavan M (eds) *New workplaces: Location patterns, urban effects and development trajectories. A worldwide investigation*. Springer, forthcoming.
- Mariotti I (2015) *Transport and Logistics in a globalizing world. A focus on Italy*. SpringerBriefs in Applied Sciences and Technology, Springer International Publishing, pp.100.
- Mariotti I, Pacchi C, and Di Vita S (2017) Coworking Spaces in Milan: Location Patterns and Urban Effects. *Journal of Urban Technology* 24(3): 1-21.
- Mariotti I, and Akhavan M (2020) Gli spazi di coworking a Milan: localizzazione ed effetti sul contesto urbano. In A.A.V.V., Costellazione Milan. *Contributi di ricerca per un'esplorazione del campo urbano*. Fondazione Giangiacomo Feltrinelli, Milan, pp. 146-165.
- Mariotti I, Di Vita S, and Akhavan M (2021a) Eds., *New workplaces: Location patterns, urban effects and development trajectories. A worldwide investigation*. Springer.
- Mariotti I, Manfredini F, and Giavarini V (2021b). La geografia degli spazi di coworking a Milan. Una analisi territoriale. Report, Milan Collabora, forthcoming.
- Mariotti I, Akhavan M, and Rossi F (2021c) The preferred location of coworking spaces in Italy: an empirical investigation in urban and peripheral areas. *European Planning Studies*, forthcoming.
- Mariotti I, Di Marino M, and Akhavan M. (2021d) The emergence of coworking models in the face of pandemic. In: Bryson JR, Lauren A, Reardon L, and Ersoy A (eds) *Living with Pandemics: People, Place and Policy*. Edward Elgar, forthcoming.
- McKinnon A (2009) Logistics and land: the changing land use requirements of logistical activity. In: *14th Annual Logistics Research Network Conference*, 9-11 September, Cardiff, UK.
- Micek G, Mariotti I, Di Marino M, Akhavan M, Di Vita S, Lange B, Paas T, Sinitsyna A, Alfieri L, and Chebotareva M (2021) Definition and typologies of the phenomenon of the new working spaces Deliverable D 1.1. Internal working paper. COST Action CA18214: The geography of new working spaces and impact on the periphery (2019–2023), pp 30–36.

- Montanari F (2020) ed., *Lo sviluppo degli spazi di collaborazione e dei coworking: profilo, organizzazione e impatto su innovazione e trasformazioni del lavoro*. Opera, Università degli Studi di Modena e Reggio Emilia.
- Oksanen K, and Ståhle P (2013) Physical environment as a source for innovation: investigating the attributes of innovative space. *Journal of Knowledge Management* 17(6): 815-827.
- Oldenburg R (1989) *The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of a Community*. Da Capo Press.
- Regione Emilia-Romagna (2019a) Rapporto annuale di monitoraggio della mobilità e del trasporto in Emilia-Romagna 2019. Report, Bologna.
- Regione Emilia-Romagna (2019b) Piano Regionale Integrato dei Trasporti 2025. Relazione tecnica. Fase di approvazione. Report, Bologna.
- Regione Lombardia (2016) Piano Regionale Mobilità e Trasporti. Report, Milan.
- Rivera L, Sheffi Y, and Welsch R (2014) Logistics agglomeration in the US. *Transportation Research Part A: Policy Practice* 59: 222–238.
- Rodriguez-Pose A (2018) The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society* 11(1): 189–209.
- Saloriani S (2020) *The multiple effects of b2C e-commerce growth in Italy: retail system evolution and spatial impact*. PhD thesis, Urban Planning Policy Design PhD programme, DASTU-Politecnico di Milan.
- Scapolan A, Montanari F, Leone L, Razzoli D, Rinaldini M, and Rodighiero S (2020) Gli spazi di lavoro negli hub creativi: una ricerca esplorativa. *Sviluppo & Organizzazione* Gennaio/Febrero: 26-37.
- Sivitanidou R (1999) The Location of Knowledge-Based Activities: The Case of Computer Software. In: Fischer MM, Suarez-Villa L, and Steiner M (eds) *Innovation, Networks and Localities*. New York: Springer.
- Sostero M, Milasi S, Hurley J, Fernandez-Marcias E, and Bisello M (2020) Teleworkability and the COVID-19 crisis: a new digital divide? Report, European Commission JRC and Eurofound, Seville.
- Van Oort F, Weterings A, and Verlinde H (2003) Residential amenities of knowledge workers and the location of ICT-firms in the Netherlands. *Tijdschrift voor Economische en Sociale Geografie* 94(4): 516-523.
- Van Winden W, and Carvalho L (2016) Urbanize or Perish? Assessing the Urbanization of Knowledge Locations in Europe. *Journal of Urban Technology* 23(1): 53-70.
- Vickerman R (1996) Location, accessibility and regional development: the appraisal of trans-European networks. *Transport Policy* 2(4): 225-234.
- Wang Y (2019) Understanding the impact of emerging technologies on the freight sector. Report, Government Office for Science, Foresight.



Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

espon.eu   

ESPON 2021

ESPON EGTC
4 rue Erasme, L-1468 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: info@espon.eu
www.espon.eu

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States, the UK and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

Disclaimer

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.