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Editors**

Evolution of New Working Spaces

Changing Nature
and Geographies



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Evolution of New Working Spaces

Changing Nature and Geographies



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Introduction to the Evolution of New Working Spaces



**Ilaria Mariotti, Elisabete Tomaz, Grzegorz Micek,
and Carles Méndez-Ortega**

Abstract The chapter briefly describes the book structure and the contents of the chapters. Two sections compose the book: the first describes the main typologies of NeWSps and the evolution of this phenomenon, and the second focuses on NeWSps location and its evolution. The chapter also describes the methodological approaches to explore NeWSps, and underlines to what extent the book fills the gap in the literature on NeWSp typologies and geographical patterns.

Concepts such as “third place” [1] are used to study alternative workspaces that facilitate informal social relationships and provide a sense of community beyond the traditional office and work-from-home environments. A vast literature on new working spaces (hereinafter NeWSps) has emerged in recent years in different disciplines, reflecting different approaches to this phenomenon, summarized in this book’s first part.

This book fills the following research gaps in the academic literature. First, it provides a nuanced view of the different typologies and location patterns of NeWSps and is not purely narrowed to coworking spaces (CSs). Second, the book acknowledges that NeWSps are not homogeneous entities, but are rather hybrid in their

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functions (see in this book the chapters [The Evolution of Non-traditional Workplaces: From Third Places to Hybrid Places](#) by Tomaz and Tabrizi and [New Working Spaces Typologies Beyond Core Cities](#) by Gato and Haubrich). Third, the book looks at various spatialities of NeWSps stretching from country level to regional and urban dimensions. Moreover, the editors and authors acknowledge that NeWSps spill over beyond large cities and tend to thrive in more peripheral and rural locations, also to accommodate remote workers whose number increased during the Covid-19 pandemic. Fourth, the book discusses the case of CSs that opened in west Ukraine during the Russian invasion to host people who had left the eastern areas hit by the war (see Chap. [The \(re\)location of Coworking Spaces in Ukraine During the Russian Invasion](#) by Zhurbas et al.). Fifth, the book calls for more qualitative studies of CSs' location factors (see, for instance, Chap. [Theoretical Framework of the Location of Coworking Spaces](#) by Mariotti and Micek) arguing that some location factors are qualitative in nature.

This chapter and [The Evolution of Non-traditional Workplaces: From Third Places to Hybrid Places](#) by Tomaz and Tabrizi provide a definition of NeWSps, as framed in the literature, by disentangling among “third places” [1, 2] and “fourth places” [3]. NeWSps include CSs, creative hubs, living labs, makerspaces, fab labs, open worklabs, hackerspaces, which combine work and social interactions to promote sharing, learning, and leisure opportunities. The analysis of NeWSps typologies and approaches has led to the development of a taxonomy for localized collaborative spaces, which are sometimes referred to as open creative labs or creative hubs in a broader context. Besides, any NeWSps typology joining together or merging with other categories of business (e.g., coffee shop, hotel, etc.), sometimes forming unusual compounds, can fit into “hybrid categories” since they combine different activities, functions and/or spatial configurations [4]. For instance, they can also offer a “living” or “recreational” dimension to work, as in the case of coliving spaces [5] or coworkation [6, 7].

This book is composed of two main sections. Section I focuses on the main typologies of NeWSps presented in the literature according to certain categories that help to describe the evolution of this phenomenon and that call attention to their increasing diversity. Section II focuses on NeWSps location (particularly CSs, given their prominence), examining their recent evolution and identifying factors and new geographies, discussing theoretical approaches and offering additional empirical analysis of different European realities. Most studies focus mainly on urban areas, but recently, more attention has been given to peripheral and rural areas.

The book encompasses a range of methodological approaches to studying NeWSps. The chapters employ a combination of theoretical frameworks, literature reviews, empirical analyses, and case studies to shed light on various aspects of NeWSps.

Beginning with an exploration of NeWSps' evolution and categorization, Tomaz and Tabrizi (Chap. [The Evolution of Non-traditional Workplaces: From Third Places to Hybrid Places](#)) provide a comprehensive overview, drawing on a theoretical framework and literature review. Micek et al. (Chap. [A Taxonomy of New Working Spaces](#)) further classify NeWSps based on users' needs and their approach to innovation

and creativity. They reveal links between NeWSps and some related concepts, e.g., creative hubs. Moving beyond urban areas, Gato and Haubrich (Chap. [New Working Spaces Typologies Beyond Core Cities](#)) delve into NeWSps in rural contexts through case studies, highlighting the importance of networks and connections for their integration within local communities. Migliore et al. (Chap. [University Hubs: Hybrid Spaces Between Campus, Work, and Social Spaces](#)) examine the role of University Hubs in the hybridization of study and workspaces, employing theoretical analysis and a case study of the Luiss University Hub.

The subsequent chapters focus on location patterns and factors. Mariotti and Micek (Chap. [Theoretical Framework of the Location of Coworking Spaces](#)) review location theories and literature and explore the location factors of CSs. Vogl, Sinitsyna, and Micek (Chap. [Systematic Literature Review of Location Factors of Coworking Spaces in Non-urban Areas](#)) conducted a systematic literature review, analyzing the location patterns of CSs in non-urban areas at various geographic levels. Examining specific regions, Coll-Martinez and Mendez-Ortega (Chap. [Location of Coworking Spaces: Evidence from Spain](#)) investigate the location patterns and characteristics of CSs in Spain, emphasizing their concentration in urban areas. Rafaj et al. (Chap. [The Localization of Different Types of New Working Spaces in Central Europe](#)) employ GIS analysis and descriptive statistics to explore the spatial distribution and evolution of CSs in Central Europe.

The book also explores unique perspectives. Merkel et al. (Chap. [Caring Practices in and Beyond Coworking Spaces](#)) study caring practices within CSs, utilizing in-depth interviews with female hosts. Bayada et al. (Chap. [The Importance of Location for Coworking Spaces and the Timed City Concept. Experiences, Perceptions, and Reality in Malta](#)) delve into the interdependence of location, CSs, and the timed city concept, employing semi-structured interviews in the context of Malta. Rafaj et al. (Chap. [The Localization of Different Types of New Working Spaces in Central Europe](#)) present and discuss about the NeWSps in Visegrad 4 countries (V4)—Poland, Czechia, Hungary, and Slovakia—and focus on examples of good practices for individual types of NeWSps. Lastly, Zhurbas et al. (Chap. [The \(re\)location of Coworking Spaces in Ukraine During the Russian Invasion](#)) investigate the location and relocation of CSs in Ukraine during the Russian invasion, using interviews with managers to analyze the role played by the coworking space community.

Through this array of methodological approaches and diverse perspectives, this book offers a comprehensive examination of NeWSps, contributing to our understanding of this dynamic and evolving work environment.

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Typologies of New Working Spaces

The Evolution of Non-traditional Workplaces: From Third Places to Hybrid Places



Elisabete Tomaz and Helyaneh Aboutaleb Tabrizi

Abstract Recent socioeconomic and technological developments with significant impacts on work organization and labor relations, along with changes in the work/life relationship, have driven the emergence and rapid growth of new working spaces (NeWSps). Starting with a review of the multidisciplinary literature, we seek to identify and understand the various categories and related concepts arising from non-traditional workspaces and their evolution. Concepts such as “third place” as an alternative to home (“first place”) and workplaces of production (“second place”) refer to environments that facilitate informal social relations and provide a sense of community. Alongside the emergence of third places for work, discussions about hybrid places are arising as a spatial concept that combines two or more predefined NeWSps typologies, either with each other or with inherently tourism and hospitality infrastructure. The typologies presented serve as analytical tools to improve the understanding of this growing phenomenon, foster its diversity and integration, and contribute to future research on NeWSps and their socioeconomic implications.

1 Introduction

Over the past few decades, significant changes were driven mainly by globalization dynamics and the expansion of digital technologies in knowledge-based economies. These have had a profound impact on the nature and way work is organized and how it has become more flexible and mobile, allowing people to work virtually anywhere [31, 58, 70]. In addition, recent global crises, such as the 2007–2009 financial crisis and the Covid-19 pandemic, have underlined the importance of exploring alternative workspaces beyond traditional office-based environments.

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New working spaces (NeWSps), such as coworking spaces, fab labs, and makerspaces, among others, are expanding worldwide and have been researched and analyzed by various scholars and experts [2, 9, 13, 23, 34, 57, 60, 67, 68, 73], among others). Considering that the notion of NeWSps is initially linked to openness, collaboration, and social interaction [13, 66], this chapter starts from Ray Oldenburg's "third place" concept. The "third place" represents an alternative to the home ("first place") and conventional workplaces of production ("second place") that highlights the importance of informal gathering spots where people can engage in casual social interactions, build community connections, and foster a sense of belonging. [72]. Further studies are expanding this discussion through other relevant debates and proposing new terms. One of the revised notions is "hybrid spaces" and/or "hybrid places" (interchangeably used in NeWSps literature), denoting the convergence of physical, social, and/or digital elements within a spatial context or through their interaction [15, 24, 38, 86, 96].

In summary, this chapter aims to identify the most common typologies and concepts used in the vast and recent NeWSps literature, which are not mutually exclusive and can overlap and interact in various ways. They are subject to constant change and evolution, reflecting the dynamics and adaptive nature of these spaces. Thus, without pretending to be exhaustive, this review confirms the importance of a permanent reflection on the constantly ever-changing typological diversity, for a better understanding of new practices and work relationships, and life situations, particularly in the context of the digital transition and the gig economy.

1.1 Working in Non-traditional Ways and Places

The development of new types of work environments as an alternative to conventional office spaces is driven by ongoing changes affecting the world of work and our lives.

Social science theorists have used the concept of "third place" to present different perspectives about space beyond the binary discourse (see, for instance, [28, 65]). The work of sociologist Ray [71, 72] has been widely explored by academics and practitioners to discuss the desire for more community-oriented and socially-oriented work environments [2, 11, 67]. "Third places" are characterized by regularity, informality, enjoyment, and a voluntary nature, ranging from libraries and coffee shops to community centers [72]. Besides, "third places" are less socially homogeneous than homes or workplaces, promoting encounters with others and enabling individuals to have temporary contacts with people from various backgrounds and experiences [71]. Similarly to the general features of "third place", Montanari et al. [66] identified four defining features that are common to all types of collaborative workspaces, i.e., variety (diverse users), flexibility of use (freedom in access, infrastructure, and services), autonomy (freedom to interact), and collaborative ethos.

Several scholars extended the discourse by incorporating additional typologies for places, such as Morrison's concept of the "fourth place" [68], see also, [8, 83, 96]. Since the development of the knowledge economy, "the combination of elements of

the first, second, and third place in new social environments implies the emergence of a new category of place, the fourth place” ([68], p. 2). In the knowledge economy, the advent of the fourth place points out the significance of “tacit knowledge, social interactions, networks, and the spatial dimension of innovations in the knowledge economy” ([68], p. 6).

Both concepts embody the shift toward increasingly flexible and non-traditional working environments, predominantly centered around trust-based communities [1]. They blend work and social interaction, promoting collaboration and knowledge sharing while addressing the community’s desire for a sense of belonging and leisure. Several authors described common features and attributes of the spaces that help to design typologies of NeWSps according to their disciplinary perspectives (e.g., [9, 47, 52, 84]). These typologies provide a framework for understanding the common and distinctive characteristics of the different spaces and allow us to point out the ongoing changes in work practices and relationships. In addition, they also inform research, policies, and practices by identifying gaps and trends.

The most commonly used dimensions to define new types of work environments are summarized in the following table:

These dimensions are not mutually exclusive and can overlap, and in practice, they can overlap and interact in various ways. Although they share common socio-spatial and technological characteristics, many of the NeWSps have several backgrounds and operate under different designations. However, under the same umbrella of NeWSps, there are a plethora of practices that have emerged in recent years that depart from the original ethos as shared spaces for work, learning, and social interaction.

Hence, to improve the understanding, design, management, and research of these spaces, Table 2 presents a non-exhaustive attempt to identify key categories of NeWSps (on this topic, see also the chapter by Micek et al. in this book [A Taxonomy of New Working Spaces](#)).

The various types of NeWSps listed here are structures of production, socialization, and support [5]. In addition to access to physical and digital infrastructure and resources, they present similar dynamics of sharing and engagement between people from diverse professions, qualifications, and experiences, similarly to Oldenburg’s “third place” concept [72]. They can be seen as localized innovation and creativity environments that involve professionals, businesses, and communities of interest through formal and informal meetings for learning and collaboration.

Generally, NeWSps can differ in scale and in the services and equipment offered, and can be distinguished based on the following:

- (i) Scope—the level of specialization of the NeWSps, ranging from specialized to multipurpose
- (ii) Premises—the type of environment that NeWSps provide, which can range from community building and professional/personal satisfaction to experimentation and entrepreneurship
- (iii) Access—the level of access and membership required to use NeWSps, ranging from a free entrance or flexible membership to formal application procedures.

In practice, many of these categories are used indistinctly or combined with each other and may not correspond to community-oriented work experience but to conventional office leasing models. A growing number of operators, some working globally, have adopted these designations as labels in offices that are subleased to different companies and provide various value-added services and facilities.

In addition to the typologies mentioned above, it is also necessary to consider the separate typological group of “new informal workspaces”, such as cafes or public gardens, used sporadically and in particular by digital nomads. Finally, there is an increasing trend toward hybrid types, which will be described in detail in Sect. 3.

1.2 New Trends in Living and Working

As already mentioned, there have been significant changes in labor markets and working arrangements which reflect an increasing trend toward more flexible and diversified working arrangements in terms of contracts, working hours, workplaces, etc. (e.g., [3, 31, 41]). Furthermore, the global recession and austerity policies that followed have reinforced this trend, leading to an increase in remote, project-based, freelance, and independent workers. The rise of the gig economy, in which people work as independent contractors or freelancers, has also contributed to this trend.

More recently, the restrictions for the Covid-19 pandemic imposed a massive shift of employees from offices to the home environment, in many professions and sectors [6, 46]. However, the difficulties of separating professional activity from private life, the lack of social interaction, and the requirement of greater flexibility of employees in terms of working forms and places have led to rethinking the spatial configuration of work and to adopt new forms of work and decentralized work environments (e.g., [42, 66, 93]). Many organizations are adopting hybrid work models, which may imply the possibility for their employees to work remotely at home or elsewhere during part of the week or for some periods [21, 55]. In addition, some companies are rethinking their physical spaces, redesigning their premises so as to incorporate “third places” as areas of collaboration, innovation, and community building, as well as technology infrastructure supporting connectivity and collaboration among employees.

Furthermore, during the pandemic, hotels and short-term accommodations were hit hard and started offering “work-from-hotel” or “workation” packages [62, 78, 85]. As a result, the hospitality and tourism industries—and many governments—are increasingly attentive to the needs of a growing segment of remote workers and digital nomads. Thus, new models that combine shared spaces of life and work are growing in popularity. One of the most used concepts is coliving. Coliving is a housing arrangement with an all-inclusive and flexible rental, where residents not only share amenities and common areas for living, working, and interacting. Community managers are not only responsible for administrative tasks but also for offering support, connection, and collaboration, for example, by organizing events among residents [18, 20, 91].

Table 1 Main defining criteria for defining NeWSps typologies. *Source* elaboration by the Authors

| Dimensions | Attributes |
|--|--|
| <p>PHYSICAL <i>functional and spatial features, resources, and activities</i></p> | <ul style="list-style-type: none"> • Architectural layout of the workspace • Availability of shared spaces (e.g., workstations, meeting rooms, and communal areas) • Facilities, and equipment • Adaptability of the workspace to different activities • Proximity of different work areas |
| <p>SOCIAL <i>community-oriented and social nature</i></p> | <ul style="list-style-type: none"> • Sense of community and belonging among the users • The inclusiveness of the workspace community • Opportunities for collaboration, knowledge sharing, and learning • Networking events and social activities |
| <p>ORGANIZATIONAL <i>practices and processes</i></p> | <ul style="list-style-type: none"> • Control over schedule and work environment • Types of agreements • Membership models • Managerial strategies • Governance models • Business support services |
| <p>DIGITAL <i>technologically-mediated practices and infrastructure</i></p> | <ul style="list-style-type: none"> • Flexibility and hybrid modes of work (physical and online) • Hybrid solutions and dynamic work environments • Digitally and face-to-face mediated interactions • Opportunities to do mobile, semi-mobile, and office-based work practices • Availability of high-speed internet • Digital tools and platforms to facilitate collaboration and communication |

Hence, the above circumstances significantly have impacted the spatio-functional, social, organizational, and digital dimensions used to define NeWSps categories, as presented in Table 1. As a result, new types of NeWSps of an increasingly hybrid nature are emerging, designed to support various activities and users, often combining different features and functions and responding to new lifestyles.

1.3 *Is Hybrid a New Trend?*

The term “hybrid” generally refers to a combination of two or more distinct entities, often intended to produce a new and improved version of the original components.

Table 2 Main categories of NeWSps. *Source* elaboration by the Authors

| Types | Predominant distinctive characteristics | Key authors |
|---|---|--|
| Coworking spaces | <ul style="list-style-type: none"> • Shared, flexible, and collaborative office spaces and amenities • Sense of community • Membership on a daily, weekly, or monthly basis • Users with diverse profiles and objectives (from freelancers to remote workers and firms of different sizes) | <p>[94] [12] [74] [33] [61] [9] [67] [34] [80]</p> |
| Makerspaces | <ul style="list-style-type: none"> • Small workshops • Craft and hardware supplies and tools to experiment and develop ideas (e.g., 3D printers, laser cutters, audio and visual devices, software, and electronics) • Community of makers rooted in the DIY and hacker movements • Valuing open-access and decentralized forms | <p>[92] [43] [39] [92] [10] [77]</p> |
| Fab labs (shorter for Fabrication Laboratories) | <ul style="list-style-type: none"> • Technical workshops • Open access to advanced digital fabrication and prototyping (e.g., CNC and laser cutter machines based on a commons-based peer production approach) • Individuals, mainly architects, designers, engineers, and students • Could require certification or training to use specific technical equipment • Supported by the Fab Foundation and generally attached to a university, company, or foundation | <p>[35] [82] [87] [26] [95]</p> |
| Hackerspaces | <ul style="list-style-type: none"> • Community-run spaces • Under the DIY ethos and hacker ethics (openness, decentralization, sharing knowledge and skills, etc.) • Programmers and developers collaborating on software and hardware projects | <p>[53] [22] [49] [64] [59] [51]</p> |
| Incubators and accelerators | <ul style="list-style-type: none"> • Formal application processes • Startup companies selected based on their potential for growth • Incubators—space and resources for early-stage companies • Accelerators—intensive and time-based networking and mentoring opportunities, especially regarding market interactions and access to business capital for competitive companies | <p>[37] [75] [56] [19, 40] [54]</p> |
| Living labs | <ul style="list-style-type: none"> • User-centric and open innovation environments • Collaboration between researchers, companies, government agencies, and citizens/users • To co-create and test new products, services, or policies in real-world settings • Founded mainly by public entities | <p>[30] [32] [45] [17] [29]</p> |

(continued)

Table 2 (continued)

| Types | Predominant distinctive characteristics | Key authors |
|-----------------|---|---|
| Creative hubs | <ul style="list-style-type: none"> • Shared infrastructure or venue • SMEs, micro-businesses, and talents in the cultural and creative sector • Networking, business or project development, and community engagement | <p>[25] [36] [79] [76]</p> |
| Innovation hubs | <ul style="list-style-type: none"> • Ecosystem to accelerate innovation and support entrepreneurship • To build a community of innovators and entrepreneurs • Implemented at the regional/municipal level or as a sectoral cluster | <p>[16] [27] [48] [69] [81]</p> |

The discourses on hybridization or hybridity have varied interpretations in different disciplines [24].

As discussed earlier, the NeWSps realm can be interpreted through the “third place” and “fourth place” concepts, where hybridity is implicit [96]. Moreover, Morisson’s fourth place concept (2019) is already in a hybrid circle, since it contains home-work-leisure together, by its nature.

Regarding the NeWSps typologies, the concept of “hybridity” can refer to the combination of different categories (Table 2) and/or other attributes that characterize the spatial-functional, social, organizational and digital dimensions (Table 1). For example, elements/spaces/equipment/events/activities of a coworking space can blend with those of a makerspace or fab lab, to create a space that supports collaborative work and creative production. Consequently, from a social perspective, users can also become hybrid and diverse.

Those known as “socio-cultural hybrid spaces” also fall under this category. They are often found in old industrial building (re)use contexts and as part of urban regeneration strategies that aim at combining affordable workspace and social support [86].

Any NeWSps typology that joins together or merges with other categories of business (e.g., coffee shop, hotel, etc.), sometimes in unusual combinations, can fit into “hybrid categories” since they combine different activities, functions and/or spatial configurations [94]. They can also offer a “living” dimension to work, as in the case of coliving spaces that also include coworking facilities [62]. These hybrid models respond to the spread of lifestyles, such as digital nomadism, that combine remote work with leisure travel [4, 14, 89] and hybrid tourism products called workcation and/or coworkation [90]. Other forms of spaces integrated with living may not be completely recognized as NeWSps, but their fourth placeness and hybridity are clear. “Collective spaces” in residential settings that include collaborative living and working environments are among such spaces [50, 88].

Another example regarding this topic is that of “social learning spaces” such as university hubs (analyzed in this book by Migliore, Tagliaro, Hua, and Shaumann) or multi-functional public libraries that mix social, spatial, and digital resources [7,

23]. These spaces offer ever more collaborative workspaces and other facilities in addition to their traditional functions.

Furthermore, hybrid NeWSps also place importance on time features, including the diverse utilization of spaces based on duration (such as occasional or regular users) and the variety of activities conducted at different times throughout the day [15, 24, 63].

Apart from hybrid workplaces, “hybrid work” is also discussed widely in relation to the changes in work patterns at the intersection of virtual and physical environments [44]. It incorporates a mix of online and in-person labor digital technologies that has grown, especially due to the Covid-19 pandemic restrictions. Before the pandemic, remote working was often seen as an advantage for a few employees and sectors. Still, the pandemic forced many companies to adopt remote working and gave the impetus to digitizing services and functions to maintain business continuity [31]. Moreover, this model is only possible if the location supports digital technology and has good internet access, highlighting the reciprocity between the digital and functional qualities of the space.

In addition, hybrid urban typologies, which bring together urban functions such as residential, social, and recreational ones, and related interactions with working functions, are increasingly analyzed in urban planning [24].

The concept of “hybridity” has become increasingly relevant in the context of labor as new forms of work and workplaces emerge. Apart from socio-spatial viewpoints, hybrid working, recognized more in its digital aspects, has existed for several years but in the past, it was not as prevalent as it is today. Unintentionally or intentionally, the debate on “hybridity” and NeWSps, in all its mentioned dimensions, stems back to the advent of the concepts of coworking space and virtual office.

2 Conclusions

The concepts and categories listed in this chapter are a starting point to reflect on the current nature of work and its adaptation to dynamic circumstances, in particular, those of technological evolution and recent disruptive events, as well as its adaptation to the needs and expectations of workers.

Ray Oldenburg’s concept of third place is helpful in describing the spaces between the home and traditional offices that facilitate social interaction, community building, and social support [72]. This common basis is manifested in several physical, social, organizational, and digital dimensions, as pointed out in Table 1. By considering these dimensions, researchers and practitioners can better understand the characteristics and needs of different types of workers and work environments and develop more effective strategies and solutions to provide workers with flexible, adaptable, and collaborative work environments.

NeWSps have become increasingly diverse, giving rise to different categories of workplaces under various labels or that merge different categories of spaces or activities. Thus, combining activities, functions, and spatiality of the spaces, may

add a new type or reveal a mixed type of NeWSps; in other words, a blended or a hybrid model which has not yet been comprehensively studied. Hybrid places (with solo and multiple facets) and hybrid working are key concepts for understanding the changing nature of work and workplaces in the twenty-first century. Combining virtual spaces with physical ones, the home with office spaces, or other spaces, such as cafes, certainly produces new practices, relationships, and challenges.

The distinction and construction of categories have become increasingly complex as NeWSps have proliferated, requiring constant review. Therefore, it is essential to understand whether they maintain their previous meaning and significance, identify the concepts that support new types and practices, and how they reflect changes in how we work and where, in the face of new dynamics.

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A Taxonomy of New Working Spaces



Grzegorz Micek, Tüzin Baycan, and Bastian Lange

Abstract In this chapter, we present a definition of new working spaces (NeWSps). We then delve into the unique characteristics of different types of NeWSps. We propose a typology that classifies these spaces based on the primary needs of their users, distinguishing between two approaches: “do it together” and “do it yourself”. Drawing from our literature review, we introduce the concepts of coworking spaces, creative hubs, living labs, corporate labs, makerspaces, fab labs, open worklabs and hackerspaces. We argue that while these types of NeWSps share some similarities, there are important differences between them, and they may overlap in certain dimensions. To capture the wide range of new working spaces, we present two perspectives on makerspaces and creative hubs: *lato sensu* and *stricto sensu*.

1 Introduction

This chapter aims to provide a comprehensive classification of different typologies of new working spaces (NeWSps). NeWSps, also known as open creative labs [43], are collaborative spaces that attract a diverse range of users, offer flexible infrastructure and services, and foster a collaborative ethos [30, 45].

This chapter extends and enriches findings of Internal Working Paper (Deliverable D.1.1.) of the Cost Action 18,214 The geography of new working spaces and the impact on the periphery CA18214, *Definition and typologies of the new working spaces* [29].

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The classification of NeWSps is based on users’ needs and their approach to innovation and creativity. For example, makerspaces and fab labs can be categorized based on specific ideation and innovation methodologies. The majority of creative hubs rely on social innovation, while living labs follow the open innovation model, and hackerspaces often generate user-driven innovations [4]. However, this notion of NeWSps is not exhaustive, as it typically excludes open worklabs and creative hubs. Although different workspaces exhibit significant distinctiveness, Capdevila and Moilanen [5] raise doubts about their absolute separateness. Overlaps exist, such as certain hackerspaces that can simultaneously function as creative spaces, considering their role as predecessors to creative spaces [7].

In our taxonomy, we define NeWSps based on users’ primary needs and the tools they utilize. Accordingly, we identify two broad typologies: collaborative and creative working spaces, which predominantly follow a “do it together” approach, and makerspaces *lato sensu*, which predominantly follow a “do it yourself” approach (Fig. 1).

On one hand, the essence of the “do it together” space concept, such as CSs, lies in the social interaction among their members (“people talk”). On the other hand, the core of the “do it yourself” space concept, including makerspaces, fab labs, open worklabs, and former Techshops, is centered around collaborative physical and production activities (“people do”), facilitating the creation of physical objects [26]. In “do it yourself” spaces, often referred to as “dirty” makerspaces, activities

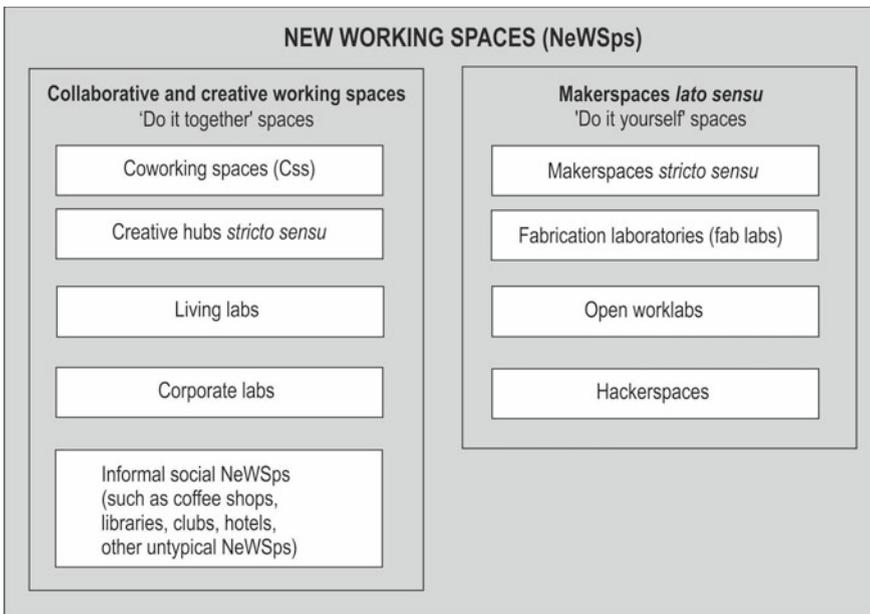


Fig. 1 Relations between two main typologies of NeWSps based on users’ primary needs and used tools. *Source* Authors’ elaboration based on [29]

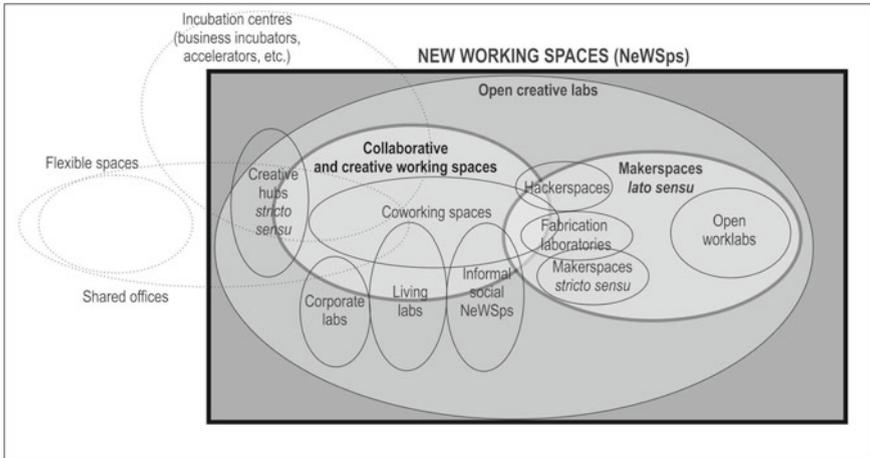


Fig. 2 Relations between various forms of NeWSps. *Source* Authors’ elaboration based on [29]

are carried out using tools and machinery, whereas in “do it together” spaces, often referred to as “clean” CSs, the work is primarily computer-based.

It is important to acknowledge that some spaces combine both the “do it together” and “do it yourself” approaches, leading to the emergence of hybrid spaces in spatial-functional dimension [12, 45, 46]. This is demonstrated in Fig. 2, where certain types of NeWSps overlap, such as the combination of coworking spaces with hackerspaces.

In comparison to the approach by Montanari et al. [30], our taxonomy excludes business incubation centers (incubators and accelerators) since their primary objective is not directly related to fostering collaboration. Instead, they aim is to support startups in realizing their ideas, increasing their chances of success, adding value, and accelerating their development [28, 37]. Figure 2 provides a more nuanced view of the overlaps between different types of NeWSps.

In the next sections, we provide a description of selected types of NeWSps, representing both collaborative and creative working spaces (subchapters 2.1–2.2) and makerspaces *lato sensu* (subchapters 2.3–2.6).

2 Types of New Working Spaces

2.1 Coworking Spaces

Brad Neuberg coined the term coworking to describe a new way of working and addressing the issue of isolation faced by many professionals [36]. In 2005, as a computer engineer, Neuberg founded the CS Hat Factory in San Francisco, which served as a model for coworking spaces [20], cited by Parrino [36]. Neuberg observed

that workers often had to choose between working from home independently or in a corporate office environment. While working in an office provided community and structure, it often came at the cost of freedom and control over one's life. On the other hand, working from home offered independence but lacked a sense of community and could lead to loneliness [20].

Coworking spaces have spread worldwide, and their concept has evolved over time. In the second wave of coworking, large real estate development companies like Regus, WeWork, and The Office Group have entered the coworking market, leading to significant changes. Freelancers, self-employed individuals, and even major corporations such as Microsoft and Amazon have become users of coworking spaces [1].

Coworking spaces (CSs), according to Neuberg, provided a solution to this dilemma by offering a shared workspace where professionals could enjoy a sense of community, collaboration, and social interaction that they might not experience in a traditional corporate office [36]. The concept of community is central to coworking, emphasizing the role of shared spaces in fostering social connections among its users [36]. However, it is important to note that CSs may not necessarily lead to significant professional relationships or knowledge exchange [36].

Various authors offer slightly different definitions of CSs across disciplines. Spinuzzi [44], for example, defined CSs as open-plan office environments where professionals from different backgrounds work together for a fee, with a focus on knowledge-sharing dynamics. CSs not only provide infrastructure and a specific design but also create a dynamic and inspiring environment for collaboration and knowledge sharing [32]. CSs are considered the evolution of the coworking phenomenon, differentiating themselves from traditional serviced offices through their explicit emphasis on social and collaborative activities, as well as their aesthetic and material design [50].

Kojo and Nenonen [21] presented a broader definition of CSs, encompassing various business models and levels of user access. They classified coworking spaces *lato sensu* into different categories: public offices (e.g., free coworking spaces like libraries), third places (e.g., public spaces that require purchasing services such as cafes), collaboration hubs (public offices focusing on collaboration between workers), co-working hotels (shared office spaces with short-lease contracts and compact service packages), incubators (shared office spaces focusing on entrepreneurship), and shared studios (shared offices with flexible lease contracts, accommodating organizational or entrepreneurial needs within the community).

Bouncken et al. [2] conducted an empirical study in Germany and identified four distinct archetypes of CSs based on competition and entrepreneurship: the corporate, the open corporate, the consultancy, and the independent CS. These archetypes represent different approaches and characteristics within the entrepreneurial environment of CSs.

Nakano et al. [33] identified five roles that CSs can play simultaneously: infrastructure provider, community host, knowledge disseminator, local coupling point, and global pipeline connector.

In our typology, the primary need of users in CSs, aside from workspace provision, is collaboration. The specific tools and equipment used can vary greatly.

2.2 *Creative Hubs*

In a broader sense, a creative hub (CH) is a milieu that brings together creative and innovative individuals. “It is a convenor, providing space and support for networking, business development and community engagement” ([25], p. 4). Creative hubs *lato sensu* are environments where creative and social entrepreneurs connect and support each other while nurturing their businesses [9, 34]. Although there are some universally recognized core concepts associated with CHs, such as collaboration, networking, co-working, shared space, entrepreneurship, and incubation, there is no absolute consensus on their definition. Creative hubs are distinguished from other workspaces based on the social possibilities brought about by sharing of physical space that facilitates creativity. Although there are some common features, CH *lato sensu* is used differently from other collaborative spaces. The term is used for spaces, places, districts, clusters and cities [14, 40].

CHs offer a work environment that is built upon shared values of community, collaboration, openness, diversity, and sustainability. In a *lato sensu* context, it can be said that CSs, makerspaces, fab labs, and even business incubators fall under the umbrella of CHs [35]. As a result, the CHs, innovation labs, incubators, CSs, open creative labs [43], start-up spaces, innovation centers, makerspaces, and even research institutes [49] are used interchangeably. Despite varying interpretations of CHs, they share one common feature: they provide tailored environments to accommodate small and micro businesses at different stages of development [17].

Creative hubs *sensu stricto* attract specific economic activities, including cultural, creative [25], and high-tech industries. Furthermore, CHs, except for CSs, are distinct from other workspaces due to their direct focus on fostering socially shared experiences through physical space sharing. CHs often experiment with and implement community projects such as urban gardens, community farming, resource sharing, eco hackathons, and literacy programs for youth and the unemployed [31].

2.3 *Living Labs and Corporate Labs*

Besides the notion of Living Labs (LLs) as digital platforms, they may often be understood as “localized spaces where activities focus on the involvement of citizens in innovation processes with the focus on the return for the leading organization related to business interests” ([3]: 8). In contrast to open innovation agents, which are global companies operating in the private sector, most LLs are set up and managed by public and/or private organizations [3]. The main aim of LLs is to build research-centered milieux which facilitate the generation of innovation. LLs often engage local

inhabitants and employees in common innovation processes, so they may provide a new dynamism to deprived urban areas.

Corporate Labs are different from living labs in terms of their aims and ownership. Using [30] wording, Corporate Labs are corporate collaborative spaces. They are created within a company to promote cooperation between staff representing different internal units and often (but not necessarily) external stakeholders. Corporate Labs are usually located inside large firms' facilities—see the case of Renault's corporate lab described by Capdevila [3].

2.4 Makerspaces

The term “makerspaces” was originally coined by MAKE Magazine, primarily in the context of creating tinkering spaces for children [6, 42]. However, in recent years, the concept has become more widespread and is now used not only in the context of tinkering and other “do it yourself” (DIY) activities but also with regard to collaboration. Makerspaces *lato sensu* are primarily driven by the maker movement, which aims to fulfill people's need to engage with objects in ways that go beyond mere consumption [13, 42].

Makerspaces serve as physical representations of the maker movement and provide environments for prototyping and digital manufacturing [15, 42, 47] (Brahimi et al. 2019). Various concepts, such as makerspaces, hackerspaces, worklabs, and fab labs, have their unique histories, which will be briefly discussed in the following subchapters.

In its broader sense (*lato sensu*), a makerspace is defined as a physical location where people come together to co-create, share resources and knowledge, work on projects, network, and build. The activity within makerspaces promotes the development of high-end technology skills necessary for prosperity and social mobility [10].

Makerspaces *lato sensu* encompass fab labs, hackerspaces, and open worklabs, providing materials and tools to encourage individuals or groups to work and innovate [7, 27, 47]. Mersand ([27], 175) rightly pointed out that in a makerspace, individuals and groups can engage in multiple activities within the same space, work with components from different projects, and benefit from cross-pollination of ideas.

Makerspaces *stricto sensu* are open access, community-driven workshops that offer a diverse range of tools and equipment to support various making activities. These spaces enable individuals to embrace a DIY lifestyle [15].

2.5 Fabrication Laboratories (Fab Labs)

The concept of fabrication laboratories, or fab labs, originated from the Fab Lab program at the Massachusetts Institute of Technology's Center for Bits and Atoms,

with the first fab lab opening in 2005. The goal was to connect digital representation (bits) with physical fabrication (atoms) [18].

According to the Fab Foundation, a Fab Lab, or a digital fabrication laboratory, is a space for playing, creating, learning, mentoring, and inventing. It serves as a place for both learning and innovation [16]. In our understanding, Fab Labs, also known as digital fabrication laboratories or fabrication laboratories, are a specific subtype of makerspaces *lato sensu* that were established and funded by universities (such as the MIT Media Lab) or private corporations (like former Techshop). Both types of Fab Labs are equipped with similar, often pre-defined machinery, designed primarily for scientific activities, K-12 education, or innovative production. The primary objective of both educational and private Fab Labs is to provide hardware and software for innovative creation, often focusing on prototyping, and to facilitate global collaboration in the field of digital manufacturing. Fab Labs place a significant emphasis on digital production and technologies, and they operate within an international network of laboratories coordinated by the Fab Foundation. These characteristics distinguish them from makerspaces *stricto sensu*.

Fab Labs operating within the Fab Foundation network adhere to guiding principles and specific space requirements outlined in the Fab Charter. Like other NeWSps, Fab Labs connect local resources to global networks by linking local professionals, engineers, researchers, and students with international laboratories and groups of individuals who share practices and attitudes [51]. In summary, anyone interested in establishing a Fab Lab must meet four requirements: providing public access (usually after training or orientation sessions to ensure safe and effective operation of specific equipment), supporting and subscribing to the Fab Charter, sharing a standard set of tools and processes, and participating in the larger global Fab Lab network. There are currently 1,750 Fab Labs spread across 100 countries worldwide that meet these requirements [16].

2.6 *Open Worklabs*

Open worklabs emerged as niches for tinkering, repairing, fixing, and testing since 2000. Worklabs have always been relevant components in small enterprises, private households, or craftsmanship since the nineteenth century. Open worklabs received wider recognition as separate functional elements in the debate on new work and on the debate on consumer options to individually contribute to sustainability. While the first addresses questions of emancipation and new competencies in the change of digital and analog working skills, the latter addresses critical questions on consumer behavior, prolongation of the lifespan of goods (clothes, mobilities, furniture, but also technical items in households).

We define open worklabs as carefully arranged places of various technical and mechanic infrastructures as well as places of competencies of likeminded people that are driven to offer the expertise to others and to onboard interest people to learn how to fix, to build, to repair, to prototype personal items in open source practices.

Further attempts to define the term ‘open worklabs’ roughly relate to alternative ways of life and informal modes of production [38, 41], occasionally addressing them as a home for tinkerers or a pastime for the like-minded. Being a collective term for various open projects and initiatives, the only consistent definition so far has been delivered by the Verbund Offener Werkstätten (VOW) (German for “Association of open worklabs”):

“Open worklabs are at the disposal of all those who want to be active in self-organized crafts or arts. Frequently, open worklabs emerge out of private initiative, sometimes they are part of cultural, citizens’ or youth centers, more rarely of companies. While some command experience of several decades, others are still under construction” [48].

Accordingly, open worklabs are engaged in the open-ended development of self-organized work. This nevertheless requires knowledge, tools, materials, machinery, and spaces. Open worklabs are therefore “*places of opportunity for many, not of business for few. They offer the necessary space and a productive infrastructure for self-initiative and independent work*” [48]. The VOW emphasizes maximum openness (for all and everyone) and collective non-profit attitudes (i.e., no material profit-orientation). The strong commitment to an open source, open access culture distances this type of new working space from other commercial oriented new working spaces. As a clear political statement toward capitalistic consumption behaviors, open worklabs foster the prolongation of the lifespan of individual items, the recycling of existing goods, and the transformation of unused or misused goods for the purpose of producing new everyday items.

The strong commitment toward “openness” is reflected in the support for open access, the open source culture (also in software terms), and the adaptability of individually owned items.

Open worklabs comprise highly innovative and diverse elements such as “prototyping technologies, 3D printing, screen printing, traditional crafts, bicycle repairing, and others” ([23]: 96). Like fabrication laboratories, open worklabs are set up to test, experiment and integrate various technologies and solutions. ([19]: 35–36) identified common features that include:

- Real physical places, where people can come and work on, and contribute to collaborative projects in person.
- Blurred organizational borders between professional, semiprofessional, and non-professional ways to co-create and innovate. It indicates that open worklabs welcome both amateurs and professionals.
- Existence of intrinsic positive motivation of open worklabs members to create projects within a community formed around the worklab.
- Promotion of collaborative relations and common accountability based on mutual trust among members.
- Focus on independence and autonomy of open worklabs; that is, they should be self-sustaining entities not belonging to a specific company or governmental body.

- Community-driven functioning. Such places are indeed independent, but they are never standalone entities. Every worklab is connected to a community and network of other worklabs of a similar type.

The objects processed vary between low-tech and high-tech apparatuses, ranging from repairing bikes and trousers to toasters and computers. The practical topics and activities of open worklabs span from traditional craftsmanship to technologically advanced, innovative fabrication techniques such as 3D printing. In addition to various technological specializations (3D printing, laser cutting, wood processing, metal processing, repair of bicycles, production of clothing, etc.), there are important differences in “business” models and organizational forms. The spectrum comprises informally organized neighborhood groups, non-profit organizations, and commercial companies.

2.7 *Hackerspaces*

The origin of hackerspaces can be traced back to the hacker ethos that emerged in the 1960s within the university context of the Massachusetts Institute of Technology (MIT) [24]. The concept further developed in Berlin, Germany, with the founding, in 1995, of C-Base, the world’s first hackerspace [39, 42]. Initially, hackerspaces were created for the community of computer programmers, commonly known as “hackers,” as spaces for collaboration in code writing and testing, as well as for cooperative learning.

Kostakis et al. ([22], p. 3) define hackerspaces and their management styles as “physical, community-led places where individuals, immersed in a hacker ethic, regularly engage in meaningful, creative projects.” The term “hacker ethic” refers to a problem-solving and creative approach that leads to innovative works. Hackerspaces are community-led physical locations that provide a space for individuals with interests in information and communication technologies (ICT) and digital technologies [11]. Unlike Fab Labs, although some hackerspaces may follow similar norms and designs, many hackerspaces do not conform to specific standards [11]. They exhibit diverse practices, and their users are free to work on projects of their choice. The central idea behind the rise of hackerspaces is their community orientation, as they are operated by communities of individuals with shared interests in specific technologies and a common motivation to hack objects and codes.

In a narrower European understanding, hackerspaces differ from makerspaces in that the latter primarily involve the use of machines and tools, while hackerspaces focus more on software [8]. Hackerspaces also differ from other types of makerspaces in terms of their user profiles, which often include activists and exhibit a relatively strong counter-systemic reaction.

3 Conclusion

The analysis of NeWSps typologies and approaches has led to the development of a taxonomy for localized collaborative spaces, which are sometimes referred to as open creative labs or creative hubs in a broader context [3, 43]. This taxonomy aims to be relatively exhaustive, as shown in Figs. 1 and 2. However, it is important to note that there can be overlaps between different types of NeWSps due to the challenges in delineating clear boundaries based on user needs. Both the “do it together” and “do it yourself” approaches coexist within NeWSps. Furthermore, there is an increasing trend of spatial-functional hybridization in these spaces [12, 45, 46], where multiple types of NeWSps are often combined. For example, collaborative spaces and makerspaces may coexist within the same facility. Hybrid workspaces offer stronger resilience toward changing external conditions, so the spatial-functional hybridization should be further studied in order to distinguish the most common hybrid subtypes of NeWSps.

In this chapter, we aimed to explore six types of NeWSps and among them, two comprehensive and overarching types are makerspaces and creative hubs. To provide clarity, we introduced their broader understanding (*lato sensu*) and their narrower interpretation (*stricto sensu*). However, given the extensive variety of makerspaces in the broader sense, there is a need for a comprehensive taxonomy that delves deeper into categorizing makerspaces and other technical spaces. Additionally, further research should focus on examining the extent to which makerspaces in the broader sense facilitate opportunities for collaborative work and adhere to the “do it together” approach.

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New Working Spaces Typologies Beyond Core Cities



Maria Assunção Gato and Gislene Haubrich

Abstract Technological development, global economic restructuring and the changing nature of work are three main factors prompting new working spaces (NeWSps). In this text, we explore the phenomenon of NeWSps beyond the core cities in the European context. We aim to understand how new ways of working spur NeWSps, focusing on their spread and impact on peripheral and rural areas. We organize the chapter into two parts. First, we present a brief overview of typologies and characteristics of new working spaces beyond core cities. Second, we introduce two case studies conceived in rural areas of Portugal. Beyond their distinct features, the success of these examples relies on the virtuosity of the networks and connections that have evolved around these spaces so as to root them in the territory and local communities.

1 Introduction

The leveraging of new working spaces beyond core cities is a subject that has been discussed and strengthened within the scope of several objectives, such as, for instance, territorial balance, environmental sustainability, economic development, technological innovation, employment and working conditions, well-being and quality of life. The expansion of digital technologies and the considerable advances of telecommunication networks have improved the mobile technology needed to work in a globalised and digitalised world. As a result, new ways of working became accessible for a broad number of professionals who can work in decentralized geographies, stimulating the emergence of new working spaces (NeWSps) out of the major urban areas.

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The focus on sharing lies at the foundation of the NeWSps, insofar as they can be seen as collaborative work environments [14], regardless of the typology they may adopt. For instance, the Maker Movement [12, 15] is at the basis of the typological diversification of NeWSps and their evolutionary dynamics. NeWSps are characterized by a set of services that may vary in form but follow a similar rationale, usually gathering individuals who aim to develop networks and collaborative work practices in spaces that inspire creativity and stimulate innovation.

Despite the acknowledged relevance of the phenomenon, research on NeWSps in non-core cities still requires further development. In this paper, we explore the literature on the European context to understand how new ways of working spur the creation of NeWSps, focusing on their spread and impact on peripheral and rural areas. The chapter has two parts. First, we present a brief overview of typologies and characteristics of new working spaces beyond core cities; second, we introduce case studies from rural areas of Portugal.

2 The Emergence of New Working Spaces

The emergence of new working spaces is tied to three interdependent conditions. First, technological development has triggered changes in several aspects of society, mainly due to the digitalization of processes and progress in mobile devices [31]. In addition, the economy has been restructured following large-scale events such as the 2008 global financial crisis and, more recently, the Covid-19 pandemic [27]. Finally, the changing nature of labor comprises new forms of work, including independent work, outsourcing, and project-based contracts, resulting in different professional identities and new life conditions [5]. Considering this matrix of events, we will start the discussion by addressing key elements referred to the wider phenomenon of new ways of working and how they engage people in creating spaces to welcome peers.

2.1 *From New Ways of Working (NWW) ...*

The role of the corporate office has been debated since the 1960s. Initially supported by science fiction, technology was expected to be revolutionary for several levels of life, and especially to be able to allow managers to run companies from anywhere [9]. In the 1970s, with the spread of flexible modes of production, companies initiated a movement of reorganization of the workplace. For instance, IBM invested in non-territorial offices, including open space areas and non-dedicated desks and rooms [34].

Not only was technology becoming cheaper and speeding up working practices, but the possibility of outsourcing part of the production also allowed to reduce costs of both personnel and facilities [20]. Though, at the time, the argument was built in a different direction, addressing the opportunity for workers to choose where they

wanted to live instead of moving closer to where work was. Nevertheless, such reverse migration, especially among knowledge workers, requires several improvements in infrastructure and accessibility in non-core areas, which remain a challenge for public administration [3].

The 1990s represented a spur moment for new ways of working. The world wide web (www) and the new mobile devices were vectors that spread digitalized practices [31]. If the ideological setting of this new era was built on the previous decades' values and views, the transition to the digital economy also triggered narratives that favored self-employment and increased the mobility of freelancers [4]. In that sense, we understand that the emergence of new ways of working implies office transitions enabled by business solutions connecting technology and architecture [19]. Moreover, these new ways of working are part of a broader trend of flexibilization of working practices such as remote working [28] and the adoption of non-traditional work arrangements related to the sharing economy [2].

2.2 ... to New Working Spaces (NeWSps)

New working spaces (NeWSps) emerged in large cities [24, 29, 32] sustained by tech accessibility and a different mindset, aiming to increase the work performed with computers and allowing workers to feel more free in geographical terms. [27] present some general characteristics of NeWSps. They feature openness and collaboration, they trigger the sharing of knowledge and skills while using common tools and platforms. Usually, they are self-organized environments where technology plays a key role. Currently, coworking spaces represent the most popular type of NeWSps, though their roots are found in two working/playing contexts. Hackerspaces are pointed out as one of the central inspirations [11] for coworking, mainly for their spirit of community and collaboration. Moreover, *barcamps* (a type of unconference) are recognised as influential in creating more permanent yet temporary experiences of work aiming to foster creativity and innovation [1].

New types and variations of these flexible working spaces emerge daily around the globe, as illustrated in this book on the taxonomy of NeWSps [26]. To some extent, the typological diversity represents the theoretical efforts to understand how changes at work stimulate workers to create alternative ways of organising. This is important to support policymakers, founders, and other actors in their decision-making, either to create policies and funding opportunities to strengthen such initiatives and improve local development or to inspire people to create favorable circumstances to work together. In the next section, we explore more specifically the context of NeWSps in non-core cities.

2.3 *NeWSps in Non-Core Cities*

Coworking spaces represent the most widespread type of new working space, also in non-core areas. [14] is one of the first authors to have explored the role of coworking spaces in fostering entrepreneurship in the South of Wales, a region also studied by Merrell et al. [25], with a special focus on well-being in coworking. [13] approached the peripheral areas of Rome to identify different typologies of coworking spaces. [30] focused on broad urban spaces in Turin to understand their role in cultural production development.

The Covid-19 pandemic slightly transformed the scene of NeWSps with an increased number of coworking spaces in peripheral [23, 35] and rural areas [7, 33], although most spaces remain located in urban areas [17, 23]. The substantial impact of Covid-19 in major cities due to high population density is the origin of the increase in the use of teleworking, first as a mandatory rule, and then as an option for many workers who can perform their functions even remotely. Teleworking also allowed many people to move to more peripheral territories [22]. For example, according to OECD, the success of remote working and the desire to work at least half the time away from the corporate office is one of the main reasons that pushed many workers to move to the countryside [6, 25]. Developing NeWSps in non-core areas requires a consistent approach to a set of preconditions. Heikkilä's [16] research on coworking spaces shed light on several elements that shall be considered when creating NeWSps in non-core areas.

First, the community is central to creating NeWSps in peripheral areas. Therefore, one of the first aspects managers should contemplate is gathering people committed to building a community by adopting bottom-up governance and allowing members to actively participate in decisions regarding the common workspace. Second, the centrality of the location is relevant for its connectivity. Third, engagement with the municipality to create funding opportunities is crucial in non-core areas. Finally, reliable internet connection and infrastructure are key to attracting remote workers and other actors [16].

According to the latest Deskmag report (2021/2022) [10], coworking spaces in suburban areas mainly focus on offering individual offices (52%), followed by meeting rooms (49%). In rural areas, the coworking space's most used services are meeting rooms (58%) and individual offices (48%). The data indicates that NeWSps have the potential to grow in non-core cities. For them to grow, it is crucial to educate and motivate potential users about the benefits, such as collaborative work, sense of community, exchange of thoughts, and expansion of job and social connections. In the following section, we introduce two case studies from Portugal to illustrate the relevance of these elements for the success of NeWSps in non-core cities, and highlight other particular aspects of the individual cases.

3 Exploring Portuguese Cases

In Portugal's mainland and outside the major cities, there are only a few NeWSps that fit into the different typologies mentioned above. It is a fact that the recent years of the pandemic have highlighted several advantages of remote working, and its continued practice has helped demystifying the many reasons for opposing it, both among employers and workers.

In recent years, the number of NeWSps has increased substantially in Portugal. Between 2010 and 2020, 184 CWs were created on Portugal's mainland, from which 62 opened during 2020–2021, with an increase slightly greater than 25% in the pandemic period. Additionally, these spaces have gained more supporters and have conquered a growing interest among public entities. In terms of public policies, it should be highlighted the creation of the network “*Teletrabalho no Interior: Vida Local, Trabalho Global*” (Telework in the Interior: Local Life, Global Work), which consists of a national network of workspaces created under the initiative of the Ministries of Territorial Cohesion and Labor, with the involvement of public entities on a regional and municipal scale.

This network of workspaces in inland territories and outside core cities today involves 88 municipalities. Most of these spaces are located in municipal vacant buildings or in buildings rehabilitated for this purpose through the installation of office furniture and improved digital infrastructure, or simply through the provision of reserved desks in municipal libraries. Despite the high number of municipalities involved, the places effectively opened and functioning normally vary significantly from region to region (NUTS II), with usually low occupation rates.

However, the relevance of this political initiative should be stressed, not only by providing a policy framework for new workspaces and teleworking, but also by highlighting the potential contribution of these workspaces to boosting the socio-economic, creative and entrepreneurial growth of rural inland territories. However, this requires much more than providing desks in reserved spaces. As ([8], 154.) stated, “in some municipalities, where the opening of a space has been prioritized instead of a previous identification of interested people, the development of a community represents a greater difficulty for the success of the project”.

3.1 A Top-Down and Extended NeWSp in Fundão

The municipality of Fundão, in the Central Region of Portugal (NUTS II) (c.f. Fig. 1), illustrates how NeWSps can assume a dynamic role in inland territories as long as they are duly framed by municipal strategies and integrated with other socio-economic components. The greatest virtue of this top-down governance example is to demonstrate the need to involve workspaces in a local and collaborative ecosystem [8]. This ecosystem combines multiple dimensions of the community's daily life in order to increase interactions between the users of these spaces and foster the

Fig. 1 Location of Fundão and Messejana in Portugal mainland (own elaboration)



relationship of workspaces with other community actors [8], thus ensuring means of underpinning and strengthening their evolution.

In short, the path that led to this result began just before 2016, when Fundão was awarded the “Municipality of the Year” for the relevance of the *Academia do Código* (Academy of Code) project. Academy of Code was a youth employability project developed as a Bootcamp for intensive training in computer programming, lasting about 14 weeks and supported by the public policy initiative *Portugal Inovação Social* (Portugal Social Innovation). Initially aimed at university students, in the first two years this project did not reach the expected number of participants; therefore, in 2016 the municipality decided to also open the project to unemployed people from all scientific areas interested in investing in training in computer programming and new technologies, which proved to be a real success in terms of participation.

The positive effects achieved with this social innovation project were the necessary impetus to add value to an inland rural territory, now recognized as a (somewhat “cosmopolitan”) specialized technological training center. Fundão’s technological center and the five coworking spaces developed for its support can offer training, attract

skilled labor and companies, and retain qualified people from abroad to enhance the local economy. Behind the initiative's success is a strategic and well-articulated vision between a set of local public policies and well-used opportunities for regional European funding attraction.

One of the most relevant actions in this process was rehabilitating about 150 houses in Fundão's city center to integrate a public rental stock to host the engineers who moved to Fundão with their families to develop the *Academia do Código* project. Including new members in the local community involved exceptional circumstances of housing provision and required school integration strategies for newcomers' children. For instance, all children in Fundão have access to bilingual education. Additional broader community initiatives involve mediators in different dimensions of daily life to improve reception of foreigners that settle in the region.

Nowadays, Fundão is developing an Integrated Technological Campus, better known as Hub. This Hub will comprise spaces for business hosting and NeWSps dedicated to incubation and acceleration, training, education and laboratory areas. Furthermore, the municipality of Fundão has 26,503 inhabitants [18], and continues to attract people from abroad, especially with jobs in technological areas. For example, around 1,000 engineers from 67 countries live and work in Fundão. Such multiculturalism gives the rural inland territory a cosmopolitan face. Notably, the municipality's success in attracting qualified people and entrepreneurial and creative initiatives cannot be isolated from a socio-territorial ecosystem resulting from a strategic governance program.

3.2 The Bottom-Up Case of Buinho in Messejana

Buinho's creative Hub (FabLab and Creative Residency) in the Alentejo region is another Portuguese example of a NeWSps in the rural inland territory. Founded in 2016 in the village of Messejana, Buinho was one of the very first rural FabLabs in Portugal. It became a European reference place for enhancing creative and technological experimentation (e.g., 3D Printing, CNC, Laser cutting).

Messejana is a rural village of Aljustrel Municipality (c.f. Fig. 1) with 811 people (Census, 2021) and from where the closest university, in Évora, is 100 km away. Despite the remote location and the focus on the creative sector, Buinho's development was boosted mainly by solid connections with other FabLabs, hackerspaces and makerspaces from Portugal and abroad (e.g., Erasmus programs, MIT Network, VULCA and other NGOs). Interestingly, creating a Fablab in a rural area presents several challenges, and one of the most significant is the need for connections and partnership networks.

The strategy followed by the founders of Buinho was to create a mobility program for makers, i.e., an Artist In Residency (AIR) program. Through the AIR, they started to develop mobility programs for makers, putting them in interaction with other actors in the cultural and creative industries and other activity sectors. From one house to accommodate two residents, they evolved into three houses, including shared

and individual studios, digital fabrication and exhibition spaces. More recently, the narrow collaboration with the local municipality has provided access to a metal-working workshop dedicated to sculpture and plastic recycling (c.f. <https://artistcommunities.org/directory/residencies/buinho-residency-program-portugal>).

While this strategy of attracting stakeholders from abroad was taking shape, the founders did not neglect the local component. They considered the partnerships needed to pursue the objectives of Buinho FabLab (e.g., local parishes, municipalities, schools, environmental groups, NGOs, other FabLabs and makerspaces). Additionally, they focused on reverting benefits to local communities. An example is an Erasmus project for youth exchange better addressed to the local youth community.

In remote places like Messejana, most young people only complete secondary education, which results in low skills, lowly qualified jobs and high migration to major cities. Buinho's founders' aimed to change such context, presenting new perspectives for young people and seeking to retain some of them in that depopulated territory. They created a strategy focused on youth exchange programs, mainly on technological projects (e.g. 3D printing, plastic recycling and transformation). Soon, they became popular among European communities of makers and fostered connections with European Fablabs for the Adult Education Sector.

The international projection of this workspace demonstrates that the territorial conditions and the constraints usually attributed to rural and peripheral areas can be overcome with good projects and properly designed socio-economic and territorial development strategies focused on the local community. In the words of the Buinho's founder, Carlos Alcobia:

(...) from the very beginning we faced the challenge of constructing a community around us and engaging with the locals too. Sometimes people would like to visit Buinho and experience the contrast of having access to all the labs and high-tech equipment to develop their project, while at the same time knowing the locals by name, having kids playing right outside their door in the night and similar things that you don't usually see in bigger cities. There is this sense of being part of a community, which is not necessarily a maker community, that brings a lot to our project (Makersxchange - Buinho, an interview with Carlos Alcobia [21]).¹

4 Final Notes

The emergence of NeWSps is linked to urban spaces, with a clear predominance in medium and large cities. However, non-core cities and rural areas have also seen an increased interest in attracting different types of workspaces. This opens numerous possibilities and connections for the digital and technological development of more peripheral areas. Moreover, it allows access to policies and financial programs aimed at the installation of these news workplaces. Ultimately, the emergence of NeWSps offers several advantages to potential users in terms of quality of life, mobility, and other values associated with less urbanized spaces.

¹ <http://makersxchange.eu/buinho-an-interview-with-carlos-alcobia/>

The Covid-19 pandemic has triggered several initiatives to bridge the “digital divide” and re-emphasize the advantages of non-core territories. Meanwhile, remote work has become widely accepted, promoting drastic changes in the economic and labor dynamics towards the post-pandemic world. On the one hand, the use of traditional and large corporate offices is questioned, and several organizations are reducing office areas or abandoning the costly city locations. In that case, alternative workspaces in peripheral regions emerge with benefits related to the physical and digital infrastructures and connectivity. Additionally, NeWSps encourage collaboration, sharing of ideas and networking among an increasing range of professionals. In this sense, users of these workspaces also benefit from the conditions that are offered by non-core cities, such as reduced traffic.

In this chapter, we have provided a brief overview of the main typologies of workspaces that fit in the NeWSps spectrum, especially regarding their existence in non-core cities and rural areas. As a result, we noticed that so far, neither the quantity nor the diversity of NeWSps in peripheral and rural areas have been explored. More research is needed to better understand existing initiatives and suggest new ones based on local characteristics. Indeed, a partnership between researchers and local actors can increase NeWSps availability beyond core cities.

Additionally, some studies have described recently launched workspaces which are still consolidating and experiencing different issues. For instance, one of the biggest challenges is creating a community of users which can guarantee NeWSps’ sustainability and their involvement in the local ecosystems. In parallel, the projection of NeWSps through national and international networks can give them a global scale and better connectivity conditions, regardless of the peripheral territories where they are located.

Finally, from both the Portuguese cases analyzed herein, we contend the *glocal* potential of NeWSps. On the one hand, the initiatives’ success depends on the refinement of digital technologies connecting individuals and organizations from different points of the globe. On the other hand, they thrive because they are tied to the local traditions and communities. In this sense, we underline the importance of involving these new spaces in broader territorial projects with a solid connection with individuals belonging to the local context. Regardless of typologies or governance strategies, it becomes clear that the greater or lesser success NeWSps may achieve depends on multiple factors, actors, and investments (i.e., socioeconomic, political, cultural). Importantly, we highlight that a peripheral location does not represent a condition for failure, and the typology or the financial investment does not necessarily imply the success of NeWSps. Alternatively, developing NeWSps with the support of integrated initiatives may represent a source of resilience for non-core cities.

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University Hubs: Hybrid Spaces Between Campus, Work, and Social Spaces



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Abstract In recent years work and learning have radically changed to support community-focused, inter-professional, and interdisciplinary engagements. In response, companies and public administrations have been developing networked and dispersed workspaces to grant people access to a variety of places tailored to their needs. Likewise, university campuses have been evolving in the same direction. Aiming to expand into different geographical contexts, universities have been activating off-campus facilities that enact their mission of sustainable development, university-industry connection, and social inclusion. However, the phenomenon is still poorly understood even though evidence exists that it is an expanding trend. This study analyses this emergent phenomenon we call University Hubs by distinguishing it from other similar dynamics and discussing it in the context of the hybridization of spaces for study and work. Through a preliminary case study analysis, the paper reflects on University Hubs as an opportunity for the development of future university models. These spaces can pursue knowledge creation and sharing with diverse communities outside the campus boundaries, but they entail the risk of simply enhancing university visibility in different places without pursuing a true engagement with local communities.

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1 Introduction and Background: Understanding University Hubs as Hybrid Spaces

Universities play a critical role in social, political, and economic development, by generating knowledge, culture, jobs, and innovation through their primary missions of education and scientific research [5]. Traditionally, university activities have been located within a site-specific physical environment. The architecture of a university campus is a means to communicate the community's identity, ideals, and values [16]. Due to the growing number of students and staff and the pursuit of sustainable development of cities and regions, universities have started developing multi-campus systems composed of geographically dispersed units supporting research and teaching activities, which share a common organizational identity [1].

More recently, universities have been expanding their primary missions. They are promoting broader efforts to impact economy, attract the creative class and stimulate the development of neighborhoods, cities, and regions [5]. The so-called "third mission" of universities requires these institutions to have a tangible and measurable impact on society. Moreover, universities are facing a radical revolution thanks to the spread of Information and Communication Technology (ICT). The growth of online education and remote working created an urgent need for flexible spaces dispersed across regions and for diversified services according to multiple user needs. "Third spaces" [12] have proved appropriate to meet these new objectives. Universities have been utilizing third-party accelerators/incubators and new working spaces located far from the university sites and exploited for distance learning for their students as well as for remote working for researchers and staff [2, 13]. Besides, similar spaces have been developed within university buildings as physical and/or virtual areas that transcend the social or work/study perspectives and constitute new types of university spaces [19]. In the form of maker spaces, Fablabs, and coworking spaces, they promote the "third mission" of universities [9] by integrating new services that provide new meanings to higher education institutions. They can be defined as "**hybrid**" facilities, as spaces between campus, work, and social spaces, which not only host the traditional activities of university campuses, that is, teaching and research. All these locations allow different groups to share a place with fluid boundaries and functions [15] and they configure as emerging design and building practices characterized by *in-betweenness* and *indeterminacy* [10, 14]. Anecdotal evidence shows that those spaces are not only located on-campus or near the flagship campus, but also far from the campus. This phenomenon, therefore, goes beyond traditional multi-campus systems. It has implications that are still poorly acknowledged in the literature, which has already studied multiple cases but without clearly distinguishing between different types.

On one hand, [2] reported on **on-campus sites** that some universities have gradually been opening to external users. For instance, some universities (e.g., Harvard University, Lakeview University, Tübingen University, Aalto University, Berlin Technical University) host coworking spaces either only for their staff or for externals. These types of spaces are likely to foster entrepreneurship for both students and

researchers, and, unlike university libraries, provide additional “non-silent” areas to give opportunities for teamwork.

On the other hand, universities open **off-campus hubs** with diverse aims [3, 4, 6]. It is common for universities to establish agreements with third-party **learning and working incubators for entrepreneurs** to ensure knowledge transfer and stimulate innovation [20]. An example is Cornell University’s 15,000 feet entrepreneurship space that is located both on-campus and off-campus (a five-minute walk from the campus). Alternatively, off-campus facilities can be hosted in existing spaces for temporary use. For instance, during the Covid-19 pandemic, NYU Shanghai¹ leased and converted nearly 7,000 square meters of WeWork office space within walking and commuting distance to the campus into classrooms, lecture halls, and other academic facilities for students. Columbia University offered its students and academics access to all WeWork locations in 80+ cities worldwide. Furthermore, GTatRIA are gathering places providing physical and virtual services for Georgia Tech University to achieve a distributed global presence and offer—through co-working and co-learning spaces—education, career development, advising, enrichment, and specialized learning experiences. It is open to Georgia Tech University students, alumni, prospective learners of all ages, and the community at large. The project, which is still under development, plans to launch in several places around the world where distance learners and the Georgia Tech alumni community are concentrated (e.g., Monterrey, Colombia, South America; Morocco, Africa; Taipei, Taiwan, as well as several locations in the United States).

Among these latter practices, we identify a specific type of off-campus facility, which we call **University Hub**. It offers a variety of spaces to study, work and/or socialize outside of a campus and sometimes at a considerable distance from it. Apart from the above mentioned examples, available on the internet and university websites, literature on these practices is still scarce and fragmented.

Previously, Jane Knight ([8]: 13) conceptualized education hubs as “reputed centers for higher education, training and research” that can be found within and beyond a geographic region. These hubs build a “critical mass of local and foreign actors—including students, education institutions, training companies, knowledge industries and science and technology centers” ([8]: 14). By implementing this infrastructure, universities pursue a range of goals that may span from facilitating closer collaboration with industry and the territory at large up to attracting new students to other areas distant from the main campus site. Moreover, the neoliberal turn in higher education encouraged universities to operate as entrepreneurial entities [17]. This chapter aims to advance this understanding. We explore this emergent phenomenon which is changing the shape of campuses in both their physical and their symbolic presence, by recognizing off-campus university hubs as a brand-new spatial infrastructure that hosts multiple functions and activities while being open to the academic community and the public.

¹ <https://shanghai.nyu.edu/news/nyu-shanghai-host-students-nyu-and-nyu-abu-dhabi-shanghai-fall>

2 Methodology

Since the trend of University Hubs is still novel and poorly investigated, this research follows a phenomenon-based approach [18] intending to capture, describe, document as well as conceptualize the phenomenon. According to [18], every stage of maturity of a phenomenon requires specific research strategies (*distinguish, explore, design, theorize, synthesize*). The *distinguish* phase of the phenomenon-based research has the goal to (1) bracket peculiarities encountered against the existing body of knowledge; (2) describe a context in broad cultural terms; (3) identify inadequacy of the given body of theory and knowledge in the field; and (4) identify relevant concepts for study [18].

Specifically, this research aims at *distinguishing* University Hubs from three categories of university space: (i) on-campus spaces (both workspaces and learning spaces) located within the traditional campus boundaries; (ii) university accelerators/incubators and new working spaces created within the campus boundaries for entrepreneurial activity and incubation of university start-ups [7, 11], and (iii) third-party accelerators/incubators and new working spaces (such as coworking spaces), exploited for distance learning by students as well as for remote working by researchers and staff [2].

The chapter develops as follows. First, we conceptualize the emergence of University Hubs as a new form of hybrid space through a recent example, *MilanoLuissHub*², located in the city center of Milan, in Italy (section 3). Information on the case was collected through desktop research and interviews with the managerial team (i.e., the director and the community manager). Eventually, we identify relevant concepts for future research (section 4).

3 MilanoLuissHub Case Study

MilanoLuissHub (Figs. 1 and 2) was conceived as the first off-campus location of LUISS University (*Libera università internazionale degli studi sociali Guido Carli*),³ one of the most important Italian universities in the field of economics, law, and social sciences. LUISS, located in Rome, attracts students from all over the world for bachelor, master, and post-university degrees. MilanoLuissHub opened in 2018 and was purposely founded in the business district of Milan, the major Italian city for entrepreneurial and business activities.

MilanoLuissHub comes across as a highly diverse and multi-faced space. It was created by the shared initiative of LUISS University with Brodolini Foundation⁴ and ItaliaCamp⁵ united into a newly established temporary association of enterprises

² <https://milanoluisshub.it/>

³ <https://www.luiss.it/>

⁴ <https://www.fondazionebrodolini.it/>

⁵ <https://italiacamp.com/it/>



Fig. 1 External view of the MilanoLuissHub. Photo by the Authors (May 2022)



Fig. 2 Interior of the MilanoLuissHub. Photo by the Authors (May 2022)

(ATI, in Italian), with the support of the Milan Municipality⁶ which granted a long lease for the space. The local project manager of the space described this association as “a hybrid of different entities that work as a graft, with the objective to create a space with its own identity where each partner would bring in its own capacities”.

An ex-parking garage was refurbished to host a variety of spaces and become a place for social gathering. In total, the space (approximately 1,500 m²) includes three middle-sized rooms that can function interchangeably as classrooms for learners taking courses from master’s to professional refresher, as separate meeting rooms or as one large conference room. In addition, a large learning space is available for interactive workshops, exhibitions, and shows, and one coworking area with about 40 workstations is rented out to start-ups regardless of whether they participate or not in

⁶ <https://www.comune.milano.it/>

the university's incubation and acceleration program. Finally, two enclosed offices are occupied by non-profit associations, and a maker space is open and equipped with various tools and materials.

Such a variety of spaces translates into a range of **activities** which are different than the ones offered by on-campus spaces.

On the website, the project is presented as *“a multidisciplinary agora of the knowledge economy dedicated to learning, sharing, and integrating traditional and innovative entrepreneurial skills. The goal is to increase the creative potential of the territories for a more equitable and inclusive development of society and the economy.”*

In the words of the director of the space, MilanoLuissHub targets particularly what comes before and after regular university learning (i.e., activities for high school students and courses for young workers and executives). In addition, it focuses on the population as a whole. MilanoLuissHub regularly welcomes the people enrolled in the incubation/acceleration program, start-ups that have concluded the program and are renting out their workstations in the same space, attendees of the abovementioned programs, Alumni who participate in different events, the society at large in the occasion of exhibits and other public events, high-school students who participate in a project called “school-work alternation”.

4 Results and Discussion

University Hubs are recognized as a new spatial infrastructure that can be distinguished from other facilities mainly for three orders of characteristics (see Table 1): their **physical configuration**, including both territorial location and architectural features; their **function**, meaning the way it is possible to use the space, as well as the activities and users they host, based on different agreements; and finally, the **stakeholders** that interact with and within the space, which encompasses the managerial structure and the relationship that the space engages in with the general public.

In terms of **physical configuration**, the prominent characteristic of University Hubs is that they are off-campus and are found relatively far from the flagship campus, primarily located in other cities or countries. This is exactly the case with the MilanoLuissHub, created in Milan 600 km away from the main LUISS campus. Conversely, both university-related facilities (e.g., on-campus workspaces and learning spaces) and independent new working spaces/accelerators/incubators (e.g., those partnering with the university) are usually located semi-close to the campus (i.e., they are in the same city or in the surroundings where most students and staff live). The former benefit from the service exchange with the university, whereas the latter need to be accessible for students and researchers. Why are University Hubs distant from the original university campus? University Hubs only partially relate with multi-campus strategies of universities. They are not an additional site but rather an ancillary site of the university. They require less economic and managerial

Table 1 Distinguishing features of the Off-campus University Hubs phenomenon compared to other new working spaces in the university context

| | On-campus spaces (Workspaces & Teaching Spaces) | University Accelerators/ Incubators/ New Working Spaces | Independent Accelerators/ Incubators/ New Working Spaces | Off-campus University Hubs |
|---------------------------------|---|--|--|--|
| <i>Physical configuration</i> | | | | |
| <i>Location</i> | On-campus | Close to the campus | Semi-close to the campus | Far from the campus |
| <i>Architecture</i> | Very recognizable and compact spaces (especially in Italy) Recognizable organizational identity Standard workplace and classroom layout | Varied layouts for different functions (informal spaces, maker space) Not immediately associated with the university's architectural design image | Varied layouts for different functions (informal spaces, maker space) Not immediately associated with the university's architectural design image | Less recognizable. Often in recently converted spaces (e.g., ex-industrial spaces) More varied layouts adapted to different functions (informal spaces, maker space) |
| <i>Functions</i> | | | | |
| <i>Activities and functions</i> | Teaching, research, work, laboratories, eat, study, sport | Innovative learning, research, laboratories (maker space), research, eat, study, sport | Innovative learning, research, laboratories (maker space), eat, events | Innovative learning, research laboratories (maker space), teaching, eat, study, sport, work, events |
| <i>Fixed/ Temporary use</i> | High predictability in the use of space (standard lessons and working hours) | Activities often planned More overlaps between a wider variety of activities | Activities loosely planned More overlaps between a wider variety of activities and temporary events Independence from universities provides more flexibility for temporary use | Activities loosely planned More overlaps between a wider variety of activities and temporary events |
| <i>Stakeholders</i> | | | | |

(continued)

Table 1 (continued)

| | On-campus spaces (Workspaces & Teaching Spaces) | University Accelerators/ Incubators/ New Working Spaces | Independent Accelerators/ Incubators/ New Working Spaces | Off-campus University Hubs |
|---------------------------------|---|---|--|---|
| <i>Users' diversity</i> | Users are very well defined Almost exclusively three types: academics, staff, and students | Users are defined and selected Mostly academics, students, alumni, and companies affiliated with the institution | Users selected according to different criteria (to ensure high diversity) Generally, do not target academics and students | Accessibility for different targets (students, researchers, alumni, enterprises, occasional users, etc.) Users' diversity is the highest because it sums those of the prior spaces |
| <i>Membership/ Subscription</i> | Need to be affiliated with the university Generally, not open to third parties for rental purposes | Strict membership rules (medium-long term) Generally, not open to third parties for rental purposes | Medium-short- term membership Open to rental possibilities | Medium-short-term membership Open to rental possibilities |
| <i>Managerial structure</i> | Top-down and centralized (one main stakeholder: university) | In-between/ nearly top-down (one main stakeholder: university) | Nearly or totally bottom-up (high number of stakeholders, mostly private actors) | Nearly bottom-up (high number of stakeholders, both public and private) |
| <i>Publicness/ openness</i> | Medium Externals cannot benefit from on-campus spaces continuously and not for rental purposes | Low-Medium Open to the public only for specific events | Low-Medium Open to the public only for specific events | Medium Open to the public for specific events based on the mission |

effort to be opened compared to a proper new campus while they fulfil a different need, namely, the relationship with a territory where the university is not present. Additionally, University Hubs are characterized by architectural forms that do not follow the common rules of university facilities. Indeed, MilanoLuissHub involves superfetation of spatial arrangements over time and, most of all, is conceived as a flexible space that can be reconfigured based on changing needs.

In terms of **function**, the idea described by the community manager of the space was that the University Hub would take a totally different function than that of LUISS University in Rome. In his words, MilanoLuissHub “*does in Milan activities that LUISS University does not do in Rome*”. Therefore, it configures an expansion of the very mission of the university, besides teaching and research, rather than a simple space extension. Coherently, the Hub hosts an entirely different population, not only students and researchers but also makers, artists, designers and other professionals.

University Hubs host both planned and spontaneous activities, where multiple events and activities happen simultaneously. They are multi-functional in their essence since they mix activities typically carried out in the university—such as workspaces, research spaces and learning spaces—and others usually hosted in both university and independent new working spaces—such as maker spaces, coworking spaces, etc. To this extent, these spaces represent a form of the “entrepreneurial university” [17]. For instance, the MilanoLuissHub offers a digital manufacturing laboratory capable of bringing together, in a synergistic way, school-to-work activities and advanced managerial training initiatives, emerging start-ups and events open to the territory, a digitalization school with digital manufacturing classes; a group called H-ability that creates prototypes of new tools for supporting daily activities of impaired people; Creative Mornings, an initiative that welcomes all interested people to share opinions on a variety of themes including politics; a neuroscience lab that uses the space for their experiments on human–environment interactions; some exhibitions (also in collaboration with the European Parliament); and the training classes of the accelerator program. In this respect, University Hubs are similar to on-campus new working spaces as well to independent new working spaces/accelerators/incubators that host similar activities. Off-campus University Hubs, like independent new working spaces/accelerators/incubators, are open to different membership policies and rental possibilities for externals. In contrast, on-campus spaces and university incubators or coworking spaces are open mainly to members and affiliated professionals. In the case under examination, start-up members mainly have access to spaces according to their membership subscriptions, while requirements for students and the citizens’ community are less strict: students have free access according to their needs, and the community has open and free entrance to public events. Moreover, there are also non-standard opening hours (at night and during weekends) that are made available upon request to the space manager in charge of assuring effective space utilization throughout the day and the week.

Concerning **stakeholders**, University Hubs can be considered a hybrid because of their complex management structure. They combine a top-down approach, where their foundation strongly depends on the will of private (i.e., foundations and associations, and more) and public organizations (i.e., the university, the municipality, and others), with a nearly bottom-up approach according to which multiple members are entitled to autonomously propose their own initiatives. In the case of MilanoLuissHub, the project was initiated by a university together with the municipality, a foundation, and an association. This hybrid managerial structure allows LUISS University to maximize its social and inclusive mission by sharing university life with the local

community. We can conclude that University Hubs have a business model independent of the main University, including a separate board of directors and partnerships with other entities, such as public and private institutions in charge of educational and social activities. Regarding accessibility, off-campus University Hubs similarly to university campuses and independent new working spaces/accelerators/incubators, are less open to non-official members (excluding events open to the public). None of these spaces are configured as public spaces, even if exceptions may exist. Nevertheless, being off-campus, University Hubs represent a tool to increase university “**brand reputation**” and engagement with local communities. As the director of the space argued:

if they [University Hubs] are not removed from the territorial context but are linked to the territorial context, they are a way of creating a brand reputation that then leads local students to enroll in our university, which, as I repeat, does not have an economic effect but does have an effect of greater internationalization of our university. For example, what if you want to have more students from a specific country? Opening a University Hub is one of the many possible ways to have more students from that country and is quite less challenging and expensive than opening your own university there.

This intention may suggest that University Hubs are a response to the neoliberal turn in universities. In parallel to location strategies of big corporations, universities seek to enhance their image in attractive locations to eventually gain advantages in the form of reputation and students’ attraction. This aim is reflected in architectural features such as visual openness. According to the manager, the conference space has glass walls facing the street because the University and its two partners want to convey the value of “transparency” to the citizens by making whatever happens in the space directly visible from outside.

5 Conclusions and Future Research Directions

This chapter conceptualized the emerging phenomenon of off-campus University Hubs distinct from other university-related types of spaces. Even though still appearing as isolated cases, University Hubs are configured as off-campus locations which are hybrid in terms of physical configuration, function, and stakeholders, more than (a) on-campus spaces and other (b) university-related and (c) independent accelerators/incubators/new working spaces. Indeed, off-campus University Hubs mix the features of the three aforementioned categories of spaces, generating a hybrid that is progressively becoming more recognizable. University Hubs attract students, workers, research companies, and industries from other regions and countries beyond the main location of the campus. Their impact could be national, regional and/or global in scope [8] as they represent one of those non-academic spaces which complement campus spaces [6]. Even if this research relies on preliminary results from a single case study located in Milan, it proposes a first conceptualization of University Hubs which opens avenues for future studies.

We advocate for more research on this topic to explore the direct and indirect effects of these spaces on the individuals who use them and the neighborhoods/cities where they operate. At the moment, University Hubs seem to be an urban phenomenon taking advantage of geographical proximity to complementary activities and services. Nevertheless, they have the potential to be used as a tool for not only urban but also rural and peripheral regeneration, where the University Hubs' mission of social innovation could be enhanced thanks to new cultural activities triggered by the academic population. In this realm, University Hubs could expand education initiatives toward the population at large living in disadvantaged and peripheral neighborhoods. Similarly, these spaces could provide better working conditions for academics and for practitioners who regularly access them. By reflecting on this great potential, research should also address the potential negative sides of University Hubs. In fact, this kind of facilities can easily end up being exclusive places aimed at increasing the allure of universities while enhancing the visibility of the campus in already developed places, failing in their mission of engaging with local communities.

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Caring Practices in and Beyond Coworking Spaces



Janet Merkel, Eva Belvončíková, and Vika Zhurbas-Litvin

Abstract Coworking and coworking spaces have proliferated over the last decade, and research has shown how these flexible, shared workspaces provide crucial resources for freelance and self-employed workers. This chapter aims to understand how care is practised in and through coworking spaces. Drawing on interviews with female hosts in different spaces across Europe, we apply Joan Tronto’s ethics of care framework (Tronto in *Moral boundaries: A political argument for an ethic of care*. Routledge [43]; Tronto in *Caring democracy: Markets, equality, and justice*. NYU Press [44]) to analyze caring practices in coworking spaces. This chapter adds to the literature on how coworking hosts and community managers provide care to “maintain, continue, and repair” (Fisher and Tronto in *Work and identity in women’s lives*. SUNY Press [18], p. 40) community and the hospitable atmosphere in coworking spaces across Europe.

1 Introduction

Over the last decade, coworking and coworking spaces have grown worldwide, and so has interdisciplinary academic scholarship on this topic. Growing digitalization and individualization of work with the rise of freelance and self-employed forms of labor since the 1970s fuels the demands of these flexible workplaces [14]. Coworking was announced as a new way of working [12] that encourages the growing share

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of independent modes of working such as freelancing, self-employment or (digital) entrepreneurship to work alongside each other in a shared space and mutually support each other [42]. Ever since, coworking has become diversified, commercialized, financialized and integrated into neoliberal urban and state entrepreneurial policies [27, 30, 34]. Moreover, coworking also spread into different spatial contexts beyond the urban cores of big cities [29]. Increasingly, smaller, more community-led coworking spaces now often grow outside big cities (see e.g., for Germany, [6]). Academic research has mainly focused on understanding why coworkers enjoy coworking and the resources these spaces provide them, such as network formation and supporting entrepreneurial development. Much less attention has been paid to how coworking spaces, despite being framed as ‘open’ and ‘inclusive’, might reproduce existing social inequalities around gender, class, or race [26, 39]. For example, in recent years, several women-only spaces have opened and drawn an increasing academic interest in the gender implications of coworking and the notion of coworking spaces as ‘gender-neutral’ workplaces [2, 10, 25, 36, 40]. Also quite limited is research on the practices of coworking hosts and community managers who have a crucial role in maintaining coworking spaces and their communities [13, 22, 31]. Coworking hosts and community managers are often female and perform affective and emotional labor as part of their work [2, 36, 37]. In this chapter, our aim is to understand the everyday practices that develop around coworkers’ needs in coworking spaces and how community managers or hosts try to meet these needs. We explore these practices from a feminist perspective as practices of care and aim to understand how care is practised in and through coworking spaces. With this specific focus, we aim to contribute to a better understanding of the social relationships that coworking can facilitate, the gendered dimensions of these new workspaces and recent debates on care in geographical research. This chapter begins with a brief review of gender inequalities in coworking research, presents our analytical framework and methodology and then discusses findings.

1.1 Gender Impacts and Inequalities in Coworking

In emphasizing the values of collaboration, openness, sustainability, accessibility and community, coworking embodies a progressive narrative [46]. However, there is little critical research interrogating potential social implications and inequalities and mechanisms that might reproduce inequalities. Some scholars have started scrutinizing the gender implications of the new spatiality of work [10, 25, 40]. In 2019, for the first time the annual *Global Coworking Survey*, Deskmag [16] reported that women made up more than 51 per cent of coworkers in coworking spaces. At the same time, there was a significant drop in the female age group between 30 and 50 years [15]. For now, it remains unclear how gender and other intersecting structures (i.e., race and class) shape coworking spaces’ organizational logic and coworkers’ subjective experiences in these flexible workspaces. For example, Sargent et al. [41] interrogate coworking spaces using Joan Acker’s concept of ‘inequality regimes’,

which are “loosely interrelated practices, processes, actions and meanings that result in and maintain class, gender, and racial inequalities within particular organizations.” [1] (p. 443) Their research suggests that gender composition alone may not be enough to disadvantage women in new economy contexts such as coworking, but rather that inequality is contingent upon other organizational logics that segregate genders and reinforce men’s higher status (e.g., through pricing policies). They conclude that three critical aspects of coworking organizational logics help weaken inequality regimes in relation to gender: (i) affordable pricing policies, (ii) open-space design/allocation practices, and (iii) lack of policies establishing occupational hierarchies. The looser form of control found in coworking appears critical to forming initial cracks in the foundations of organizational inequality. In their case study on Tribe XX Lab in Nigeria, England et al. [17] show how this women-focused coworking space helps face the multiple challenges women entrepreneurs encounter in Nigeria. The lab helps with business development, education resources, community building, well-being and advocacy and, thus, can be regarded “as a developmental tool to support gender equality and women’s economic empowerment in developing economies” [17] (p. 88). Antigoni and Papageorgiou [36] interrogates entrepreneurial labor in Athen’s coworking spaces and demonstrates how social constructions of entrepreneurship with their “masculine language, values, norms, and code” (p. 15) impact female workers in those spaces. Informed through this literature and the lack of feminist perspectives in the research field, we apply a feminist care perspective on coworking spaces in this chapter to understand caring orientations and caring relationships that might be facilitated in coworking spaces and through coworking.

1.2 Coworking: A Care Perspective

We understand the rise of coworking spaces as answering the specific needs of freelancers and entrepreneurs and aim to understand what these specific needs are and what practices develop around these needs. To interrogate these needs and practices, we apply a care perspective and understand care in line with recent scholarship in a broader sense as “labour practices and activities—usually gendered—that involve human contact and develop the capabilities and well-being of the other” [3] (p. 728) and whereby care “includes everything that we do to maintain, continue, and repair ‘our world’ so that we can live in it as well as possible” [43] (p. 103). Therefore, care does not just mean specific forms of ‘hands-on’ care in “looking after the physical and emotional needs of others” [11] (p. 5) who are vulnerable and dependent such as nursing in hospitals or care homes, teaching in schools or parenting, but where care constitutes “a social capacity and activity involving the nurturing of all that is necessary for the welfare and flourishing of life” [11] (p. 5). Care as a human activity “involves taking the concerns and needs...of other[s] as the basis for action [43] (p. 105). Those needs might be more physical such as feeding or cleaning, emotional, social, or intellectual needs such as education.

In applying a care perspective to coworking spaces, we aim to highlight the specific needs of coworkers and the practices, primarily informal and spontaneous, they adopt to meet these needs. We also aim to understand how these practices might help recognize and embrace interdependencies, responsibilities and caring orientations towards others and thus hold political potential [24]. In the same way as freelance workers in creative industries are often depicted as “self-enterprising, self-reliant, self-interested and calculative agents who valorize care-free independence” [4] (p. 135), so coworkers in coworking spaces have been described as individualized, competitive, resource-driven and instrumental (see, e.g., [7, 21]). We assume that coworking spaces might support practices of acting “other-wise instead of self-wise” [3] p. 735; [4, 28] where individual coworkers are not just self-centered and engaging in transactional relations but where the ‘caring about’ or ‘caring for’ something or someone is practised and might transform relationships and attitudes among coworkers. In this line of argumentation, in cities coworking spaces might constitute micro-spaces of care [38]. Furthermore, a care perspective foregrounds coworking’s affective and emotional dimensions, which are rarely addressed in coworking research [32], forthcoming).

As Tronto and many other scholars highlighted, care is complex and multi-dimensional. For example, Tronto [45] distinguished five phases of care that she connects with certain attitudes that emerge through caring practices. We use these five phases of *caring about*, *caring for*, *taking care of*, *receiving care*, and *caring as* as an analytical framework for analyzing our empirical data.

2 Methodology

We adopted a qualitative interpretive methodology and used semi-structured interview questionnaires that focus on the daily activities of coworking hosts in coworking spaces. To gain a better understanding of caring orientations and practices, we interviewed female operators, managers and coworking hosts as these are often the ones doing the (invisible) work of maintenance and repair in the space and engage in care work [31, 33, 37]. Our sample is drawn from spaces across European countries. We used a selective sampling strategy where we contacted key people inside these spaces, such as founders, managers and community hosts knowledgeable about the daily activities. The specific selection relied on access to these spaces through the research team. Interviews were conducted online and facilitated through the video software Zoom [35] and MS Teams. Our sample consists of coworking spaces operated in four countries, i.e., Germany, Portugal, Slovakia and Ukraine, of different size and type, consisting of a single space or having more branches within the country or internationally (see Table 1). These coworking spaces are located either in the capital cities (Berlin, Bratislava, Kyiv) or other cities of the respective countries (Banská Bystrica, Porto and Vynnytsia). Their location within the cities is also different.

Table 1 Overview of respondents

| No | City/Country | Position within the space | Type of space (single/ more branches) | Size of CS |
|----|---------------------------|----------------------------------|---------------------------------------|-----------------------|
| I1 | Kyiv, Ukraine | Location/community manager | More branches | >250 (large) |
| I2 | Vynnytsia, Ukraine | Founder | Single | 10–49 (small) |
| I3 | Porto, Portugal | Founder and community manager | Single | 10–49 (small) |
| I4 | Berlin, Germany | Community manager | More branches | >250 (large) |
| I5 | Bratislava, Slovakia | Community manager | More branches | 50–250 (middle-sized) |
| I6 | Banská Bystrica, Slovakia | Co-founder and community manager | Single | 10–49 (small) |

3 Findings: Giving and Taking Care Through Hosting

Coworking spaces are usually described as a shared work infrastructure that facilitates productivity and sociality [5, 21]. The social atmosphere and “affordances for social connections” [23] (p. 3) distinguish good coworking spaces. Subsequently, many spaces are concerned about how they might get their space socially animated to maintain their community. This work is mainly done through specialist community managers or hosts whose daily work practices of organizing the space and the community are often underpinned by informal care practices. We use [45] framework to identify caring practices from our data.

Caring about

to identify the needs of coworkers, hosts apply various practices. Most explain that *spatial proximity and bodily co-presence* are crucial for identifying needs. Thus, they must be close to coworkers as “the role itself is about people, and I need to be together with them almost all the time” (I4). Many choose to work among their coworkers, and not in a separate office, to be able to greet everyone personally, learn coworkers’ names and about their needs:

We try to work with the people, to ask them what they want to do, what they are interested in, what they miss, simply to maintain the community. And that is one of the main tasks of an office manager: to know about people, to know who is here, what is bothering them and if they want, they could share with us, and that is basically our whole day. (I4)

However, identifying and recognizing needs is not an easy task, and there are different ways in which hosts may learn about specific care needs of coworkers:

Some people come by themselves, some coworkers talk while drinking the cup of coffee I prepared for them, sometimes their neighbor or other coworker tell me – look, there is something wrong with XY. (I5)

Also, some spaces *limit the number of coworkers* so that they can still provide that ‘personal touch in the space’, as one host explains:

I don't like the dynamics of bigger spaces, so I think that 50 is a golden number for coworking spots. (I3).

While for hosts 'caring about' constitutes the core of their professional hospitality activities and the service a coworking space offers, the caring practices are primarily informal and situated, depending on the coworkers' needs and the hosts' skills.

Caring for

The second care phase is about "accepting responsibility and realizing that something has to be done" [45] (p. 6). Hosts explained that, "In everyday communication [...] it is important for us that people feel good and we try to meet their requirements." (I6). It was added later that coworking spaces should take responsibility for providing, for example, a safe non-discriminatory working environment, as one host explains with reference to their LGBTI community support: "Everybody should feel good and safe in our space. This is part of our vision" (I6). Accepting responsibility can also extend beyond the needs of the coworkers within the space and address local problems:

We organize some donations several times per year; we choose something and change: in the past, it was even blood donation. Ukraine, once also for NGO Vagus [dealing with homeless people]. Another example: when we have an event here with catering, we also think of where to place the rest of the food in order not to throw it into the trash. (I5)

Recently, two significant events made many coworking spaces accept more responsibility—the COVID-19 pandemic and the Russian invasion of Ukraine during the Russo-Ukrainian War in February 2022. The COVID-19 pandemic affected many spaces at the core of their community and business model, yet most of them recognized that "during the pandemics we all needed support" (I3) and that they needed to take action, whether in providing different types of support to their members (e.g., building a virtual community, organizing meetings groups), by cancelling membership fees if members had financial struggles or rebuilding the space to accommodate new rules. The Russian invasion of Ukraine caused a migration wave from Ukraine's east to the west, and millions of refugees crossed borders into neighboring countries, as will be described in book by Zhurbas et al. [The \(re\)location of Coworking Spaces in Ukraine During the Russian Invasion](#). In most European countries, coworking associations and individual spaces created support schemes for Ukrainians and offered free membership and desks.

Caregiving

For the actual caregiving, we find that hosts most often give care spontaneously when they meet a coworker and a need is expressed—the caregiving ranges from offering coffee or tea, a listening ear and encouragement to providing information to help coworkers achieve a specific outcome (e.g., pointing out contacts, financial options, etc.). Hosts do not necessarily give care themselves; very often, they connect people and organize appropriate help from inside or even from outside the space. Nevertheless, as one host claimed concisely: "We just provide help." (I4). They mobilize their networks or other organizations to help coworkers with their needs. Much caregiving also happens between coworkers: "Inside coworking, there is always help for each

other among the coworkers.” (I3). As already shown by other scholars, this social support and mutual help often extend beyond work-related help into their private life [19, 20, 47]. Caregiving often also extends beyond coworkers and the space. Hosts mentioned initiatives or organizations in the local neighborhood they engage with or where they encourage their coworkers to participate. As one host remarked:

One of those organizations called Centre for Volunteering has a program to help senior citizens. Volunteers used to shop for seniors, or they simply spent time with them. I know that 2 or 3 coworkers are participating. (I6).

One interviewee from a coworking space in Kyiv provided valuable insights on how coworking spaces have become a vital infrastructure for coworkers and the local community. They mentioned that during the war, these spaces played a crucial role by offering services such as mobile chargers and electricity generators to the community. Additionally, in the event of bombings in cities across Ukraine, coworking spaces served as shelters for people seeking safety. Another interviewee shared that their coworking space provided 24/7 accommodation to individuals at the beginning of the war, particularly those who had been displaced from their homes due to the conflict. These actions highlight the significance of coworking spaces in providing support and assistance beyond their traditional role.

Care-Receiving

In general, most spaces evaluate their performance and ask their members how they do and what they could do better: some use questionnaires, town hall meetings, offer email feedback or have a slack channel, some engage with coworkers, and others ask directly if the needs were met. Our impression was that interviewees were hesitant to talk about care-receiving and whether they met coworkers’ needs, as this is not something that is commonly measured in coworking spaces in Europe. However, we know from the industry that care-receiving primarily consists of informal practices, such as the checking in by a community manager or location founder with strong communication skills and empathy who pays attention to coworkers, which is more usual in coworking spaces with less than 100 coworkers. In larger spaces, often a QR code or other technical instruments are used to make a questionnaire and gather feedback.

Caring with

[45] has recently added a fifth phase of care which refers to the societal level of care and whether care becomes a public concern. In coworking, this phase relates to activities where coworking spaces start doing caring work with others. For example, spaces join coworking associations or form networks to advocate overarching aims such as visibility and recognition of the sector or push for certain rights (e.g., the right to remote work). As a host said: “[our space] is a member of Coworking that is a freshly established association of coworking spaces” (I5). Most interviewees acknowledged broader political concerns and engaged in collective efforts to give visibility to local and/or national coworking spaces. Some engage in the creation of associations or alliances to make specific professional fields of their coworkers

more visible, engaging in or partnering with other organizations: “We also cooperate with the Ministry of Investment, Regional Development and Informatization due to hackathons [...] we also co-organize tech festival [...] when the whole staff of the coworking is involved in” (I6). One interviewee said that during the pandemic, they created a local alliance of coworking spaces to cope with the spatial and social restrictions of the pandemic rules but also to promote their services better as “most people lived alone because they are from other cities, had no families here and suffered from isolation” (I3).

4 Conclusion and Future Research: Caring Practices and Gendered Impacts in New Spatialities of Work

Our findings show that hosts’ daily work activities are permeated with acts of care—practical and often immediate help, such as giving attention to someone, listening, giving advice, encouraging and validating, showing respect, helping with problem-solving and even hands-on care, organizing childcare facilities for coworkers or financial help in times of crises. Two interviewees based in Ukraine provided numerous examples of caregiving for coworkers and the broader communities since the start of the war and of the commitment of coworking spaces towards the local community in that critical situation. Shelter and essential services were provided swiftly, with no hesitation and no need for extensive corporate meetings, and all actions were exclusively driven by the community’s needs. Decisions were taken and implemented by the coworking spaces themselves, without external funding.

Care practices reflect significant changes in the workplace in providing a growing number of independent and remote workers the support they need and seek. Our sample intentionally made up female coworking hosts and community managers, as our aim was to understand how they describe their daily work activities and concrete caring practices. It should be noted that most spaces work with female coworking hosts and community managers and that, for example, reception desks are usually filled with female workers who perform the affective and emotional labor of creating a hospitable atmosphere where coworkers feel ‘being cared for’ and taken seriously with their needs; as one of the interviewees said, they have to “wear their heart on their sleeves” (I5). Most everyday caring practices are motivated by a specific understanding of coworking (as a workspace that also provides sociality) and constitute an essential part of their labor as community managers and hosts. The care provided in coworking spaces is usually not formally organized, hosts are not trained and are not paid directly for that. However, coworkers pay a usage or membership fee to access the spaces and their services. This “caring as a service” comes with a clearly structured relationship between the caregiver (host) and the care receiver (coworker). However, we also found empirical evidence of this relationship becoming multidirectional and extending into friendship and exchanging gift between hosts and coworkers, as well as evidence of coworkers regularly taking on responsibilities for

the space (see [8]). While most interviewees mainly talked about care for work-related needs, the different types of relationships facilitated through coworking add to the “sources of intimacy, care and support that people use to get through the vicissitudes of life, both major and minor” [9] (p. 618). In fostering and shaping social relationships and the sociality of independent and remote workers, coworking spaces can be places where caring orientations and relationships are produced and reproduced. However, caring can also lead to exhaustion and invisible labor for hosts because of the informality and emotional demands of caring practices “aimed to *maintain, continue, and repair* a hospitable atmosphere in the space” ([13] p. 2; [37]).

Because coworking spaces provide crucial social, material and emotional resources for freelance and self-employed workers, addressing inequalities in access to these spaces and interrogating how inequalities might be produced or reproduced through coworking [26] is a crucial task for coworking research. With a rising number of independent and remote workers, future research must address these inequalities more thoroughly and understand how care is unequally provided and distributed in and through coworking spaces. In our small sample, we can already see differences across cultural and spatial contexts. A broader comparative perspective, therefore, could contribute to a more comprehensive understanding of caring practices in shared workspaces. Also, the size of spaces seems to affect caring practices as smaller spaces tend to create more familiarity and direct interaction between members and staff. Overall, by recognizing and studying the caring practices within coworking spaces, we can better understand the significance of these spaces in fostering supportive work environments and mitigating social inequalities.

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Location of New Working Spaces

Theoretical Framework of the Location of Coworking Spaces



Ilaria Mariotti and Grzegorz Micek

Abstract Location theory focuses on the optimal location choice determined by the attractiveness of sites for firm location. This chapter reviews the location theories (neoclassical, behavioral, institutional, and evolutionary), which offer insights into the location factors of coworking spaces that can be assimilated to those of the service sectors. It discusses the role of proximity measures a la Boschma and presents a literature review of the studies exploring coworking spaces' location factors. Conclusions and future research lines conclude the chapter.

1 Introduction

A growing number of papers are currently being written regarding the spatial development of coworking spaces (CSs) and factors related to their location (e.g., [20]; [37]). However, previous studies on firm location often fail to properly set empirical research within location theories [7].

In this chapter, first we apply theories and paradigms constructed in economic geography, urban, and regional economics to explain the location factors of CSs. Specifically, we evaluate the applicability of location theories to analyze and explain the location of CSs. While discussing location theories, we treat CSs as economic agents for which location is shaped by various factors. We classify selected existing literature based on used location theories, although most papers often use location theories without mentioning them explicitly.

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2 Location Theories—An Overview

2.1 *From Neoclassical to Behavioral, Institutional, and Evolutionary Location Theories*

Economists developed the industrial location theory in the early twentieth century, focusing on individual firms and the variables that influence the selection of new sites. These ‘neoclassical’ spatial-economic theories view entrepreneurs as rational decision makers—‘homo economicus’—who possess perfect knowledge and abilities in a rational selection process leading to the best results in terms of cost, revenue, and profits (see, among the others, [40]).

Prior to the 1960s, analytical work consisted in interpreting the location of individual plants or industries with reference to the conceptual framework provided by the neoclassical theory. The goal was to search for the ideal location at a particular time, and the most suitable approach was to analyze the location of essential heavy industries such as iron and steel ones, “which were in the vanguard of the contemporary industrial progress” [8].

The rapid economic growth of the 1960s resulted in an exceptional and perhaps unique amount of investment in new manufacturing establishments in Western Europe, North America, and Japan, leading to increasing academic and policy interests in location decision-making [22]. This period saw the beginning of the behavioral location theory, which focuses on the geography, growth, and behavior of firms, which are not considered rational economic decision-making units but are seen as units governed by conflicting goals, limited knowledge and environmental control, irrational perceptions and behavior, etc. [12, 16]. As stated by Brouwer et al. [7], the behavioral location theory explores ‘internal’ factors (e.g., age and size) that are important in the decision-making process and that leads a firm to choose a particular location. According to the behavioral theory, an entrepreneur who has to move his/her firm is most likely to choose a near places as this is more familiar or easier to imagine than a distant place (‘mental maps’) [7, 31].

In the 1970s and 1980s, interest grew in cultural institutions, value systems, and innovations in society. These new patterns were embraced in institutional approaches wherein location behavior was the result of negotiations between the firm and various local and national entities. In the institutional approach, non-material factors such as ‘trust’ and social capital are key elements on all economic levels (see also the ‘industrial district literature’ [2, 25]). A firm’s location behavior results from its interaction with suppliers, government, labor unions, and other institutions [22].

The most recent approach, developed since the early 1990s, is a decision-making theory underlying evolutionary economics. This ‘evolutionary’ approach is based on routine behavior rather than rational choice. According to the evolutionary theory, firms are unwilling to change their location because their competitiveness is determined by the knowledge, routines, and expertise they have acquired (within a particular local environment), which are hard for competitors to imitate [4].

In the neoclassical approach, firms are seen as black boxes that respond to their environment rationally. In the behavioral approach, firms make decisions involving conflict, uncertainty, and problems which stimulate research, learning, and adaptation over time. In institutional and evolutionary approaches, firms are defined by their interactions with the environment [22]. Specifically, the entrepreneur's personal characteristics, network of personal and business relationships, and cultural influences on the spatial economic system are given a primary focus [6].

The shift from neoclassical to behavioral, institutional, and evolutionary approaches represents a shift from the 'hard' factors typical of the neoclassical location theory to the 'soft' factors of the behavioral, institutional, and evolutionary approaches [13]. This shift is related to the 'cultural turn' [1] or 'institutional turn' [26] in economic geography, which is a reorientation process that is observed in all social sciences [6], (p. 18).

A review of location theories shows overlaps between the behavioral, institutional, and evolutionary approaches, which tend to complement rather than exclude each other [6]. This leads to a tendency to combine different approaches to explain a phenomenon. Martin [26] proposed a multidimensional, multi-voiced economic geography with use of different approaches. Hassink and Gong [11] argued that economic geographers studying economic activities in space and their drivers should follow an integrative paradigm that attempts to combine different paradigms. Besides, some authors do not consider geographical proximity as a key factor for some types of industries (mainly high-tech) (see, among others, [5, 32]).

2.2 The Proximity Theory and Its Use to Explain Location of Coworking Spaces

Proximity economics addresses the significant role played by various spatial and non-spatial proximities in boosting knowledge flows, innovation, and entrepreneurship within the workspaces. Inter-organizational proximity [3] includes five dimensions: geographical, social, organizational, institutional, and cognitive proximity. Bidirectional relations between two inventors or businesses and their impact upon knowledge flows, collaboration or co-patenting [38] are usually researched in proximity studies. The main idea within proximity economics is that non-spatial proximities may compensate for the poor geographical proximity [3, 17] or even substitute it. One of the crucial underlying mechanisms is the following: exchange of knowledge is easier in the era of the digital revolution. Hence, we may even identify a virtual (electronic) proximity [15, 17] that helps to establish collaborations.

In the context of coworking spaces, these interdependencies are usually understood as relations between coworkers [19]. However, in coworking spaces, proximity may also be proxied by a distance between the home and the workplace. This trend is called 'proximity coworking' which is driven by remote workers. Smaller distance

between the home and the workplace helps reduce commuting, traffic, and pollution, and improve work-life balance [23].

Based on conducted literature review of definitions of CSs and various proximities, Micek [27] attempted to identify how the specificities of CSs are linked to the proximity dimensions. For instance, working with colleagues and companies in a flexible setting [30, 33] generates collaboration, knowledge interactions and social proximity. In her studies of proximity-driven social networks in two coworking spaces, Parrino [30] argued that organizational and social proximity matter for stimulating collaboration among coworkers and in enhancing knowledge flows. In their study on Italian coworkers, Mariotti and Akhavan [19] tested this dimension of proximity detecting relationships based on trust and established friendships. Institutional proximity, proxied by the use of the service and facilities offered by the CS, including training courses, social proximity, is one of the most frequent proximities in CSs. It goes along with institutional proximity proxied by similar lifestyles, rules and values. Cognitive proximity (understood as similar level of knowledge or rarely as similar professional experience) between coworkers also occurs in CSs. Institutional proximity in the form of similar political attitudes is the least common in CSs [19]. Finally, it might be even argued that due to significant fluctuations of users, the proximity between them may also be temporary and not permanent. Besides, during the Covid-19 pandemic, CSs massively experienced digital proximity, which allowed them to feed and keep alive their community [24].

3 Literature Review on the Location of Coworking Spaces

The literature on the location of CSs is scant. Most studies about the location factors of CSs were written in the last decade and refer to urban and peripheral areas.

At the beginning of 2000, Brouwer et al. [7] explored the factors behind the firm relocation behavior in twenty-one countries in 1997–1999, distinguishing among neoclassical, behavioral, and institutional factors. According to the literature [31], while the Neoclassical theory mainly refers to the “hard” factors (accessibility, infrastructures endowments, market size, etc.) the Behavioral, Institutional, and Evolutionary theories concern the “soft” factors (e.g., trust, innovation, “image” of the place).

Similarly, this chapter classifies few selected studies explaining the location of CSs, according to the location approaches. The reviewed papers are then grouped according to their level of analysis (geographical vs. individual-at space level) and their methodology (quantitative vs. qualitative and mixed methods).

Most studies about the location factors of CSs were written in the last decade, refer to urban and peripheral areas and adopt quantitative analysis. The vast majority of papers analyzed location patterns and factors in large cities.

In 2023, a special issue in European Planning studies collected three papers exploring the location of new working spaces, including coworking [20, 18, 9]. These papers used quantitative approaches and thus, mainly investigated the role

of neoclassical factors in explaining NeWspS location. Mariotti et al. [20] explored the location factors of the 549 CSs existing in 2018 in Italy. The empirical analysis concerned: (i) descriptive statistics and exploratory spatial analysis to investigate the geographical distribution of CSs and (ii) econometric analysis (zero-inflated negative binomial regression). The results confirmed that CSs privileged urban areas, which are knowledge-intensive places for creative people. CSs were more frequently located in NUTS4 municipalities with higher urbanization economies, innovation, a higher share of skilled labor, and entrepreneurial vivacity (e.g., capital cities of metropolitan areas). In addition, the analysis revealed that even suburban areas close to major cities attracted CSs, as did peripheral and inner areas, albeit to a lesser extent.

Coll-Martínez and Méndez-Ortega [9] investigated the location factors of CSs in Barcelona. A quantitative analysis was carried out using geographical information systems (GIS) and Kd functions of agglomeration and co-agglomeration. The main location factors found for CSs were: (i) proximity to the center, where there are greater chances of meeting customers and suppliers, (ii) proximity to urban amenities, and (iii) the image of the location. Moreover, CSs used to co-agglomerate with firms mostly related to creative industries.

Di Marino et al. [18] focused on new working spaces (NeWSpS) in the Helsinki metropolitan area to understand location factors and implications for planning. Through descriptive and GIS analysis they analyzed 86 NeWSpS in Helsinki in 2019 and found that they tended to be located in neighborhoods with good access to public transport, proximity to university campuses, and a concentration of knowledge-intensive jobs. In addition, they were mainly located in multifunctional centers in the core and sub-center pedestrian zones.

Wang et al. [39] analyzed the location patterns and factors in the city of Hangzhou. They argued that the location of CSs was determined by regional innovation environment measured by the density of innovative enterprises and innovation parks within a specific distance range. The second important factor was the quality of life represented by catering facilities, recreational facilities, and medical facilities. Surprisingly, Wang et al. [39] found out that the average housing prices within 1 km of CSs had no influence.

Sutriadi and Fachryza [34] attempted to explain the location of CSs in Bandung (Indonesia). They found out that proximity to coffee shops, bar & pubs, presence of higher education area and sport & park facilities was important for the location patterns of CSs.

A recent paper by Tiwari [35] analyzed the location patterns of CSs in Delhi, India. Secondary data for 117 coworking locations in 280 municipal wards were analyzed through Ordinary Least Squares (OLS) and Geographically Weighted Regression (GWR) models. The analysis led to conclusions similar to those of [34], i.e., that the density of bars, median house rent, fitness centers, metro train stations, restaurants, cinema, and café drove the geographical distribution of CSs.

Another group of studies focus on rural and peripheral areas. Vogl and Micek [36] explored the bidirectional causation between the real estate market characteristics (residential property prices/rents, office rents) and the rise of CSs in the peripheral areas of Germany. The authors constructed their own database of 1,201 CSs based

on the desk research. Most CSs in the German peripheral areas had been established only recently, and specifically in tourism-oriented regions in the south and north of Germany, and they were mainly hybrid spaces.

Studies using qualitative analysis or mixed methods are lower in number. Fiorentino [10] explored the taxonomy and location of CSs in Rome, through desk research and interviews with CS managers and stakeholders. The interviews with stakeholders highlighted that, in addition to neoclassical factors (e.g., proximity with suppliers and customers, public transport accessibility), behavioral and institutional factors played a crucial role in CSs location. Some socially-oriented CSs in Rome were located in economically deprived areas and helped to address social segregation and inequality issues. These aspects were related to behavioural location factors.

Mourad et al. [28] discussed the dynamics of the location of CSs in Cairo (Egypt). Using space–time mapping, field study, and interviews, they revealed that during the first development phase, CSs were established in spatially integrated transit-oriented areas located close to universities. In the second phase, CSs expanded to new, more spatially segregated satellite cities, not necessarily close to universities (Table 1).

It is rather clear that the studies developing explanatory models and carrying out analyses at the geographical level use objective data (e.g., accessibility, proximity to amenities, agglomeration) also called “hard factors”, which can be classified as neoclassical ones. On the other hand, studies using interviews or surveys and detailed empirical work (qualitative analyses and mixed methods) mainly refer to soft factors. These studies underline that, although to a different extent, the behavioral, institutional, and evolutionary factors play a role in coworking spaces location decisions.

4 Conclusions

Existing empirical research on location factors fails to establish a proper link with location theories. Moreover, scholars tend to use single methods to explain location patterns. This chapter distinguished three strands of literature that attempt to identify (both directly and indirectly) location factors of CSs:

- quantitative studies that directly identify location factors (see, for instance, Mariotti et al. [20]; [18],
- studies on the co-agglomeration of CSs with other industries such as creative industries [9, 14] or broader knowledge-intensive services [29],
- studies that aim to identify location factors based on qualitative insights (mainly from interviews; [10]).

Quantitative and qualitative research should be combined to better understand the location of firms, in general, and of CSs. Besides, mixed-methods approach should be able to explore the causality of firm location. Qualitative research, based on questionnaires and interviews with the actors involved in the location process, should be applied to find additional information on the hard factors (e.g., more specific

Table 1 Location factors and location theories in selected papers

| Selected papers | Level of analysis | Methodology | Location theories |
|--|---|--|--|
| Quantitative analysis/geographical scale | | | |
| Mariotti et al. [20] | NUTS4 level (municipalities in Italy) | Quantitative (zero-inflated negative binomial regression) | Neoclassical approach |
| Méndez-Ortega et al. [29] | Neighborhood level (Barcelona, ES; Utrecht, NL, Warsaw, PL) | GIS and Kd functions of agglomeration and co-agglomeration | Neoclassical approach |
| Di Marino et al. [18] | Neighborhood level (Helsinki, FIN) | Descriptive and GIS analysis | Neoclassical approach |
| Vogl and Micek [36] | NUTS3 level (districts) (Germany, DE) | Desk research, descriptive statistical analysis | Neoclassical approach |
| Wang et al. [39] | Neighborhood level (Hangzhou, CN) | Kernel density analysis, entropy weight method | Neoclassical approach |
| Sutriadi and Fachryza [34] | Neighborhood level (Bandung, IND) | Kernel density analysis, Sommer's d association analysis | Neoclassical approach |
| Tiwari [35] | Municipal wards (Delhi metropolitan area, IN) | Ordinary least squares (OLS) and geographically weighted regression (GWR) models | Neoclassical approach |
| Qualitative analysis and mixed methods/workplace (manager and users) scale | | | |
| Fiorentino [10] | Neighborhoods in Rome (Italy) | Interviews with CS managers and stakeholders | Neoclassical approach, behavioral and institutional approaches |
| Mourad et al. [28] | Neighborhood level (Cairo, EG) | Space-time mapping; semi-structured interviews with managers, stakeholders and coworkers | Behavioral and evolutionary approaches |

geographical data and characteristics of the premises), and the soft factors (e.g., place of residence of CSs' founders, government policies). All this could help identify the role played by the 'neoclassical', 'behavioral', 'institutional', and 'evolutionary' factors in setting up CSs.

There is certainly a need to avoid isolated views and perspectives in studies of location patterns and factors of CSs. Following [11], we call for implementing a more integrative paradigm in studying location patterns of CSs. Hence, different

perspectives (e.g., neo-classical, behavioral, and institutional) should be used to grasp the real impact of various factors on the location of CSs.

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Systematic Literature Review of Location Factors of Coworking Spaces in Non-urban Areas



Thomas Vogl, Anastasia Sinitsyna, and Grzegorz Micek

Abstract The global COVID-19 pandemic fostered the relocation of remote workers and freelancers from metropolitan to non-urban areas. During the first waves of the pandemic, regional migration flows affected the local demand for flexible working spaces in non-urban regions and attracted the interest of the local stakeholders. As a result, a growing number of coworking spaces (CSs) were established in non-urban areas. Yet the scientific discussion on what determines the location of non-urban CSs remains fragmented and has not been analyzed systematically. This chapter presents a systematic literature review (PRISMA) of recent evidence (2010–2022 publication period) on the topic of location factors of CSs in non-urban (rural) areas, and it outlines the main characteristics of CSs' locations. Analysis is performed on the macro, meso, and micro spatial scales and, in addition, the COVID-19 factor is taken into account. The results of our study indicate that since 2010, the most frequently and continuously analyzed location factors have been those at the regional (meso) level. Secondly, the micro and macro levels of analysis have increasingly gained scientific interest since 2020 but have remained under-researched. Finally, our results show a gradually increasing frequency of occurrences of the COVID-19 factor, which since 2021 has been the most discussed location factor.

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1 Introduction

Coworking practices are often seen as consequences and at the same time as accelerators of the increasing global trends of digitalization, economic restructuring, and globalization [7]. These global shifts determined a demand for more flexible working spaces, in a time when the place and time of work were not so relevant. However, the COVID-19 pandemic induced many potential and existing customers and users of CSs to move away from large cities because of safety reasons [15, 20]. The growth of regional migration flows of high-skilled professionals toward rural areas has partially revitalized peripheries and has boosted the demand for non-urban CSs.

The growing body of literature [2] and the establishment of CSs in rural areas reveal the importance of this new way of working for scholars and practitioners, and CS location factors have become a central research topic. It was already known (cf. [8, 11, 15, 16]) that many CSs are located in large metropolitan areas in proximity to their customers, usually high-skilled ICT professionals, freelancers, and creative class employees. However, non-urban CSs received considerably less attention than their metropolitan counterparts, especially in systemizing the explanations of location factors. The current study will address this issue by making a first attempt to complete a systematic literature review aimed at identifying the most discussed CS location factors in non-urban areas. To answer this research question, we perform a systematic literature analysis following the PRISMA approach [19].

The structure of the chapter is as follows. The next section introduced the applied PRISMA methodology and sets the empirical framework. A frequency analysis of macro-, meso-, and micro-scale factors follows. Finally, the concluding section summarizes the chapter key findings and discusses them by focusing on what we have learned on CS location mechanisms.

2 Methodology

To ensure compliance and increase the research value, this article follows the 27-items defined protocol developed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) to perform a qualitative literature review [19]. The aim was to systematically investigate the academic community's extensive research on CSs, explicitly focusing on the location factors of CSs in non-urban areas. In this systematic literature review, we initially explored two (close in meaning) terms, namely "location determinants" and "location factors". However, in the study, we generally decided to use "location factors".

Subsequently, different electronic databases were screened to classify relevant records for further analysis. Based on the results of a scoping search with the keywords "Coworking OR Co-working AND (location* OR factor* OR determinant*) AND (non-urban OR rural OR peripheral)", three appropriate databases were identified: Emerald, Scopus, and ScienceDirect.

At the beginning of the search process, the focus was on identifying relevant terms and synonyms related to the research question in English. Consequently, eight different expressions were identified and documented. Besides coworking (space) and co-working (space), the terms location(s), factor(s), determinant(s), as well as non-urban, rural, and peripheral were seen as related to the overarching research. Furthermore, wildcards (asterisks) were integrated to retrieve variations of the individual search terms, and Boolean operators (AND, OR, and NOT) were set to logically link the terms to a search string that can facilitate the objective.

The search was performed on October 1, 2022, and several criteria were defined: (1) the timeframe was restricted to 2010–2022; (2) the terms had to appear in the title or abstract or, in the case of Scopus and ScienceDirect databases, in the keywords; (3) the search was limited to research or review articles as well as EarlyCite publications. Eligible criteria were defined along with the research question. As most user preferences [24] are also location factors, we included articles that investigate both but excluded papers that exclusively discussed user preferences.

The master search string was applied to the databases, and the identified records were then exported to individual.ris files. Afterward, these.ris files were transferred to the reference manager Citavi and combined into one summary file, which was exported to an excel workbook. The final list of data included a total of 3,060 articles. Among these publications, the authors could identify 747 duplicates and 11 not retrieved article types, for a final total of 2,313 articles at the beginning of the screening process.

Three independent reviewers performed the screening of the titles and abstracts. Disagreements between the reviewers were resolved by consensus. In the first phase of the screening process, the titles of the identified articles were examined for thematic suitability. Thus, the number of articles was reduced to 46. The abstracts were screened and checked for eligibility in the second phase of the search process, which excluded 17 articles were excluded due to a missing thematic fit. In the third phase of the search process, the full texts of the remaining 29 articles were screened and checked for their thematic eligibility, the use of the English language throughout them, and their availability. As a result, 24 articles were excluded due to a lack of thematic fit or the unavailability of their full-text documents. Finally, five relevant articles were included in the final qualitative analysis. To increase the number of findings, backward and forward citation research was applied to the selected articles. Therefore, 12 additional papers could be identified as relevant from 381 references and were included in the final analysis. This led to 17 eligible records for this systematic literature review. The flowchart (Fig. 1) below summarizes the findings of each phase.

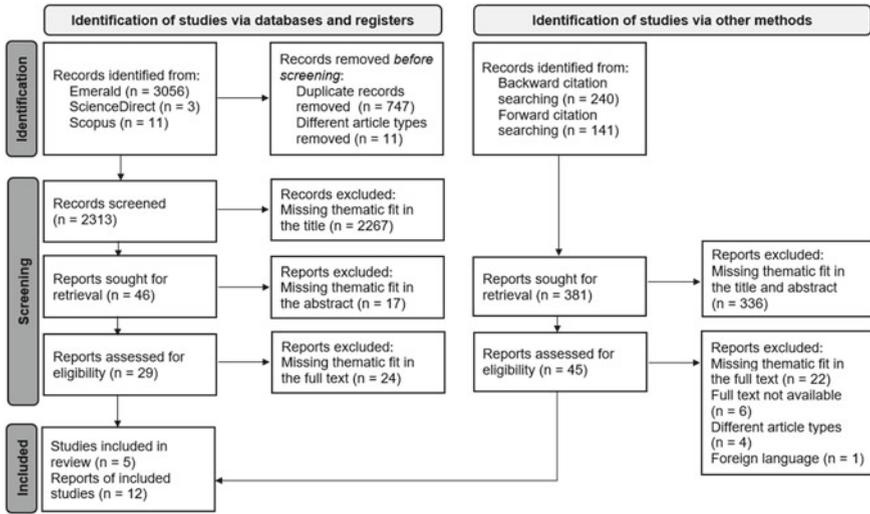


Fig. 1 PRISMA flow chart of the study selection process

3 Results

The results of the PRISMA analysis display an excellent research potential toward location factors of CSs in non-urban areas. These insights correspond with the findings of [22] on the limited availability of research on CSs in peripheral locations. This becomes especially clear when a frequency analysis of the publication years is performed (see Fig. 2).

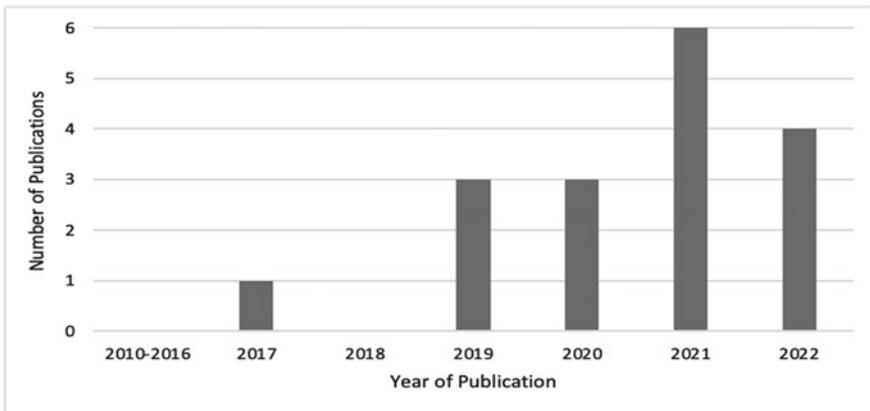


Fig. 2 Frequency analysis of years of publication

The graph clearly shows that research on location factors of CSs in non-urban areas remained unnoticed until 2017 and just came into motion in the last two years, in which more than half of the articles identified were published. The 17 studies were published in 12 different journals, particularly those concentrating on urban planning (53%) and management & economics studies (35%). The latter type can be further differentiated in journals focusing on real estate management (23%) and organizational culture (12%).

According to the neoclassical location theory, the location factors of CSs are: economic factors (market size, cost of labor, cost of premises, incentives, etc.), access to technical, digital and social infrastructures and transport accessibility, etc. [15]. In this study, we run a literature review exploring which main location factors are analyzed according to the geographical level. In the 17 studies reviewed in this paper, all published after 2010, the location factors of CSs in non-urban areas were applied to the three main groups identified by the authors and corresponding to the spatial scale analysis: macro (NUTS2/3 regions), meso (municipality or town level) and micro (neighborhood level; building and its surrounding area) location factors. Finally, 16 primary location factors were identified, complemented by COVID-19 related factors (see Fig. 3).

Figure 3 shows the frequency of the specific location factors addressed in the studies. The most common group of factors was at the meso scale (31 hits), next come micro factors (16 hits), while macro factors and COVID-19 related factors were mentioned eleven times. Most of the research articles (47%) focused on the role of potential and existing CS users. The following most frequent categories include the local community, existing social networks, real estate market (7 hits), the opportunity

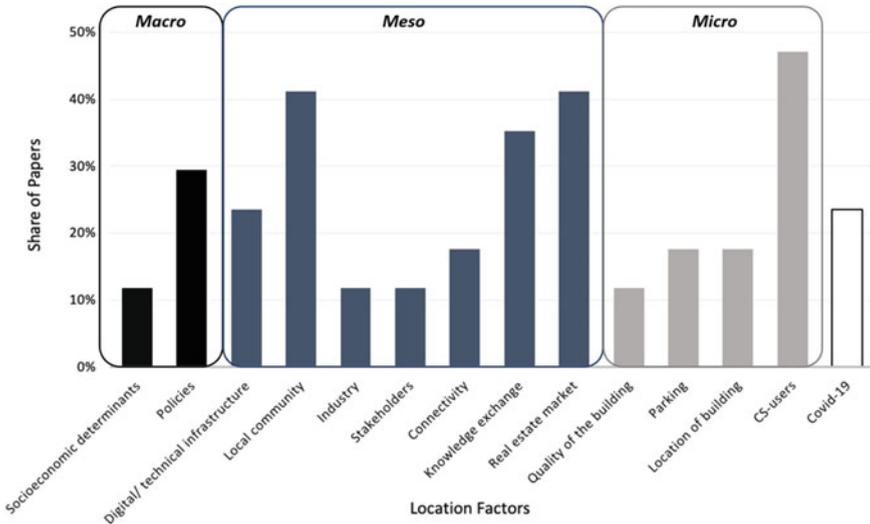


Fig. 3 Frequency of occurrence of location factors in the studied papers. *Source* authors' classification

for knowledge exchange related to the presence of high-level education (6 hits), regional and national policies (5 hints), and digital and technical infrastructure (4 hits).

3.1 Macro Factors

As shown in Fig. 3, the group “macro” is built upon two aggregate factors dealing with socioeconomic factors (e.g., population, GDP, employment rate) and national and regional policies. 12% of the papers address major socioeconomic factors such as *the population characteristics* and density, *competition in the central areas*, as location factors of CSs in non-urban areas. For example, the study by Hölzel et al. [12] assumed that, *inter alia*, the reason for CSs being established in prime residential areas is the population density. Another article found relations between the settlement of CSs and regional economic factors [23]. Vogl and Micek [23] concluded that the rise of CSs in non-urban areas was driven by the growing competition in the urban areas and by the favorable conditions and high return on investment in real estate markets for establishing CSs in peripheral areas.

Others (29%) found that CSs were attracted to peripheral regions by the typical values of the national and regional economy or *national and regional public policies*, e.g., support to or regulated entrepreneurship and rural revitalization [1, 4, 6, 15, 17]. The impact of regional public policies on the growth of CSs is discussed in three articles [1, 6, 15]. Clifton and Reuschke [6] mentioned the local municipalities’ increasing role in attracting and supporting the establishment of CSs. Mariotti et al. [15] reported that against the background of improving entrepreneurship, tailored policies could be adopted to attract CSs in peripheral regions. This assumption is confirmed by Akhavan et al. [1], who assumed that customized regulations combined with bottom-up initiatives on the promotion of entrepreneurship would accelerate the spread of CSs in non-urban regions. According to other scholars [4, 17] tourism-related policies and regional revitalization programs, in line with the rise of the deprived regions, also provided a favorable environment for the establishment of CSs.

3.2 Meso Factors

On the meso level, we identified the following eight groups of location factors (in descending frequency). Seven papers [4, 9, 10, 14, 15, 18, 21] associated the outcome of location with the various necessities of *the local community, network, and broader neighborhood* area. Two papers stated that CS establishment was driven by the growing demand of the local community [18] or of teleworkers unwilling or obliged to return to cities [15]. Two studies added that the emergence of CS was associated with the pre-existence of practice and the readiness of optimistic

entrepreneurs to utilize the new CS model in rural areas [10, 21]. In addition, Tremblay and Scaillerez [21] argued that personal attachment to the neighborhood of birth is a solid reason to establish a CS in this area. Other contributions considered the need of the local community for social collaboration [4], social proximity [9], and real interaction between its members [14], and therefore emphasized the need to organize physical places to exchange ideas and innovative practices and for being together.

Next seven studies [8, 9, 12, 15, 21–23] considered various factors that are typical characteristics of *the real estate market* such as yields, housing, and commercial rents or prices as well as capital or operating costs, to be the major factor of location.¹ Two publications [9, 22] argued that location was mainly driven by the high return on investments for CS in rural areas, while other researchers [8, 21] recognized the benefit of low rentals in rural real estate markets and associated the establishment of CS with the availability of affordable renting. Vogl and Micek [23] argued that a low competition level among CSs was another benefit of rural real estate. One publication [12] extended the growth perspectives of real estate markets by discussing the availability and importance of other commercial buildings (e.g., cafes, shops, shopping centers) in the surrounding area of CSs.

Furthermore, we found six papers that considered the central role of *knowledge exchange* in the non-urban area [5, 9, 10, 14, 15, 22]. Two studies [15, 22] argued that the establishment of CSs is more likely in neighborhoods of high-intensity educational institutions and transport accessibility of educational centers. Gandini and Cossu [10] considered CSs as potential centers of education and training, hence, they related the establishment of CS to the high demand for physical space to perform educational programs. Other studies [5, 14] claimed the need of creative workers and entrepreneurs for knowledge exchange and considered CSs as typical places for knowledge exchange.

Four articles pointed out the relationship between the rural region's digital and technical infrastructure and the establishment of CSs [1, 5, 15, 23]. Most of these scholars discussed the regional growth of the ICT sector, which provided opportunities to work remotely. Bürgin et al. [5] associated the establishment of CSs in non-urban areas with comprehensive and easy digital connections between regions.

The next group of location factors includes *accessibility* by various means of transportation. In the literature review we identified accessibility-related factors only on the meso level, although we acknowledge that they may also operate on the micro and macro level. In total, three papers [8, 13, 15] addressed the efficiency of the transportation system as a reason for establishing a CS. Mariotti et al. [15] and Di Marino et al. [8] emphasized that coworking spaces are more likely to be established in regions where high mobility flows are made possible by a highly developed transport system. Hölzel and de Vries [13] added that CSs in rural neighborhoods were often located close to residential clusters and there was a well-developed connection

¹ Factors related to the real estate market might be considered at the neighbourhood level, however in the 7 analysed studies they were investigated on the meso level.

system of roads and public transportation that shortened the commuting time and provided time-saving benefits to coworking members.

The last two strands of factors that are considered to impact the location of CSs are *the industry-related* factors such as local companies and industry sectors [1, 25] and *the presence of local stakeholders* that support, participate or even invest in CSs [10, 23]. Yang et al. [25] mentioned that establishing CSs is beneficial in areas where large commercial companies do not see a business potential. A similar conclusion was found in the study by Akhavan et al. [1], who found that small private companies, due to their legal form, were the most appropriate to establish a CS in rural areas as this did not require high establishment costs. Concerning the local stakeholders as location factor, Vogl and Micek [23] considered the presence of interested public institutions as motivation to establish a CS, while [10] mentioned that local businesses such as entrepreneurs and local companies were potentially interested in investing into coworking industry.

3.3 *Micro Factors*

The group of “micro” factors refers to the preferences of the target users’ group, the location and quality of the building, and the opportunity to have a free parking slot. Our results reveal that CSs *users* preferences are one of the most extensively researched. Overall, eight papers refer to various domains of the CS users, such as the location of residence, emergence of the target group and professionals, and surrounding services [1, 5, 6, 10, 12, 13, 18, 21]. Two studies [6, 12] stated the importance of spatial proximity of large residential districts and neighborhood areas. Other researchers [1, 5, 18] connected the growth of CSs with the type of the users such as creative people, remote workers, and multilocal knowledge workers. Two studies [10, 21] considered the user group’s interests as well. However, they focused on business people, researchers, and activists as potential customers of the CS. Another study [13] investigated user group preferences from the perspective of the services they required. The authors identified services such as bakeries, grocery stores, and cafes as complementary to CS.

Three papers [12, 13, 21] addressed *the location of the building* and, thus, the facilities and utilities of the closer vicinity as a driver for CSs. These studies concluded that establishing CSs in rural areas was associated with the variety of the infrastructure of the surrounding neighborhood [13, 21]. Thus, CSs would be more likely emerge in areas with a high density of cafes, bus stops, and shopping and cultural centers [12].

In addition, two papers [14, 25] considered *the building quality* and the physical space design as factors of the location of CSs. Yang et al. [25] discussed the role of the exterior design of the building on the decision to establish the CS and concluded that historic buildings might be of particular attraction due to their aesthetic and heritage value. In addition, Kovács and Zoltán [14] postulated the value and high attraction of modern interior design of the building where CS might rent the space.

Availability of *parking* slots was mentioned as a significant location factor on a micro-scale in three articles identified [6, 8, 13]. Clifton and Reuschke [6] stated the importance of parking, based on interview results, according to Di Marino et al. [8], the importance of parking facilities was due to the increased mobility of suburban workers who had to utilize their private cars [13] to access the CS.

3.4 Covid-19

The results of our study indicate four papers that considered the COVID-19 pandemic as a factor [1, 6, 22, 23]. Two papers [22, 23] mentioned the following chain reaction. The COVID-19 pandemic boosted the digitization of work and technological development of rural areas. In turn, the growth of ICT technologies created a favorable environment for remote work and removed the necessity to commute to urban areas to perform office work. Similar to previous studies, Akhavan et al. [1] mentioned the importance of technological advancements for relocating workers to non-urban areas. Another study [6] argued that in the short run, driven by safety requirements, people would move to non-urban areas and prefer to work from home. Yet, in a more extended period, the way of working will shift towards the hybrid mode, combining remote, home, and office working situations. This will create opportunities for establishing CSs in remote areas, as hybrid workers demand working space near their residences.

4 Conclusion and Limitations

There are only a few studies on location factors in non-urban areas, and research is primarily case-based. Our systematic literature review revealed that location factors are most frequently studied on a regional level, also taking into account the restricted availability of relevant studies. Due to the scarcity of broader approaches, we argue there is a research potential for macro-scale studies to explain differences between countries and regions in terms of CS density. Moreover, there is also a need to investigate further local factors of CSs distinguishing them from CSs users' preferences [3, 24]. Moreover, very few studies consider the whole country's meso scale (see the exception of Mariotti et al. [15]), not to mention the lack of comparative studies on different countries. We also observed the evolution of studies on the three analyzed groups of factors. Meso factors have been discussed equally across the whole time frame, whereas some micro factors have only gained importance in more recent publications.

Among macro factors, the growing role of public policy is the most frequently studied. There are two strands of research in this respect. First, Akhavan et al. [1] argued that regional policies are used to foster entrepreneurship in support of the establishment of CSs as centers for entrepreneurs. Second, tourism-related policies

and programs for regional rural and urban regeneration may form a good platform for the emergence of new working spaces in deprived regions [4, 17]. The most frequently researched meso factors include: the local community, existing social networks, the real estate market, opportunity for knowledge exchange related to the presence of high-level education, and access to ICT infrastructure. The first category includes the growing demand of the local community [18], the pre-existence of practice, and the readiness of optimistic entrepreneurs to utilize the new model of CS in rural areas [10, 21] or personal attachment to the neighborhood of birth. CSs' user preferences (including spatial proximity of large residential districts, the emergence of the target group and professionals such as creative people, remote workers, and multilocal knowledge workers, and availability of local consumer services) are the most frequently studied location factor in micro-scale. Surprisingly, building quality and design are not as commonly studied in research on location factors. Hence, we argue that applying CSs' location factor analysis in real estate management studies is necessary.

Limitations go along with the restricted availability of relevant studies on CS location factors in peripheral areas in general and on their differentiation from their effects in particular, which makes it hard to draw solid conclusions based on the studies reviewed. Consequently, the authors included location factors that can be interpreted as impact factors of CSs on specific areas and vice versa, such as national or regional policies [15]. To date, scientific studies on this topic are limited to the articles reviewed herein, which are all in English.

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Location of Coworking Spaces: Evidence from Spain



Eva Coll-Martínez and Carles Méndez-Ortega

Abstract Nowadays, due to the post-COVID-19 situation, teleworking has grown exponentially worldwide. In this context, and as the pandemic has moved into a less restrictive phase, the role of coworking spaces (CSs) has gained relevance. This chapter investigates the location patterns and characteristics of 599 coworking spaces in Spain as of 2021. Specifically, it examines the location factors, characteristics, and attractiveness of central and peripheral regions of these spaces. Data from CSs in Spain provided by the COST Action CA18214 is used. By analyzing features of the CSs, utilizing Geographical Information Systems and Kd functions of agglomeration, we confirmed that CSs are highly concentrated in specific urban areas of Spain where there are greater opportunities to meet customers and suppliers, access to human capital, proximity to key amenities, and good connections.

1 Introduction

Coworking spaces (hereinafter, CSs), defined as “shared workplaces utilised by different sorts of knowledge professionals, mostly freelancers, working in various degrees of specialisation in the vast domain of the knowledge industry ([21]: 194), have become a global phenomenon since the first CSs opened in San Francisco in 2005. In particular, between 2015 and 2020 the number of CSs increased by 200% and CSs users increased by almost 400% [12], with a total of 26,300 CSs and 2,600,000 CSs users worldwide at the end of 2020.¹ However, this growth has been limited due to the COVID-19 pandemic and the consequent waves of lockdowns which led some

¹ The estimate is based on past developments and does not reflect the pandemic in 2020.

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CSs to limit or cease their activities and services. Despite that, the flexibility of CSs still seems to be attractive to some users [25].

As regards the location patterns of CSs, although CSs mainly remain an urban phenomenon concentrated in large cities worldwide, the demand for CSs in rural areas is increasing [10], and this increasing demand in rural areas has become a new concern for regional policies. Despite the increasing importance of CSs, evidence on their location patterns and drivers is limited. We can find some exceptions at the urban level in studies by Moriset [26], Mariotti et al. [29], Coll-Martínez and Méndez-Ortega [7] or [27], and at the rural level in studies by Capdevila [5], Mariotti et al. [24] or Tomaz et al. [36].

This chapter adds new evidence to a growing literature on the CSs phenomenon [21] by using Geographical Information Systems (GIS) and distance-based measures to analyze the agglomeration of CSs without considering the administrative borders at the country level. Particularly, the Kd function provides information on the CSs localization, that is, the tendency for CSs to cluster relative to overall economic activity at a given distance. Concretely, the Kd function compares the distribution of distances between pairs of establishments in a given economy to the distribution of distances in hypothetical industries with the same number of establishments randomly distributed across the area under consideration [14, 15].

The focus is on Spain, which ranks as the fourth top country in terms of number and capacity of CSs, only behind the United States, India, and the United Kingdom [17]. Spanish figures are mainly explained by the data recorded mainly in the cities of Barcelona and Madrid. The Catalan capital is one of Europe's most important creative hubs in terms of knowledge-based, creative, digital, and sharing economy [2, 22]. Moreover, the Catalan capital has been recently been highlighted for its potential as the European city with the greatest growth margin in terms of CSs' creation in the coming years [10]. Regarding Madrid, it is considered one of the European cities with the highest potential for coworking with reference to four different factors, i.e., scale, business, environment, people and catalyst. In 2019 Madrid ranked 10th place with a European Coworking Hotspot Index of 100 [9]. Despite the importance of the two larger cities in Spain, there is little evidence about the general location patterns of CSs in urban, periurban, and rural areas in Spain [5]. Against this background, our work provides notable implications. Analyzing the agglomeration of CSs from a continuous space point of view allows us to identify whether this phenomenon, attracting the most innovative start-ups and creative freelancers, tends to cluster beyond urban areas and how intense its agglomeration is in the Spanish geography and illustrate the potential challenges of this phenomenon.

Our main results confirm that CSs are highly concentrated in the most populated areas of Spain, since these areas offer greater chances to meet customers and suppliers, proximity to urban amenities, and with their specific image and reputation add to those of the individual CSs. Another reason is that they offer freelancers the opportunity to operate in the most vibrant city areas while paying competitive fees. Thus, the results show that (i) CSs are highly concentrated in the most central areas of Spain: Barcelona and Madrid; and (ii) CSs are significantly agglomerated at short distances (70–90 km), and this agglomeration rapidly disappears as distance

increases. This confirms that the CSs' location is still a urban phenomenon in the country.

The remainder of the chapter is structured as follows. In section 2, we review the main factors behind the location of CSs. Then, in section 3, we present our methodological approach and data. In section 4, we analyze the location and agglomeration patterns of CSs in Spain. Finally, in section 5, we discuss our main conclusions.

2 Literature Review

CSs emerged in a context the proliferation of three interlinked movements: the creative economy² [18], the spread of information and communication technologies [30], and the sharing economy³ [3] as 'serendipity accelerators', designed to host creative people and entrepreneurs who endeavour to break isolation and to find a convivial environment that favours meetings and collaboration" [29].

Even though there is no official definition for such an innovative workplace, several definitions of CSs have been proposed.⁴ Herein, according to the aim of this chapter, we understand CSs as in Mariotti et al. [26], (pp. 6): "Coworking spaces are innovative workplaces where independent knowledge-based, creative, and digital workers—mainly freelancers or self-employed professionals—share their work spaces [...]"

The CSs phenomenon is the subject of public debate. On the one hand, the new working practice comes with some risks related to a potential coworking "bubble" and real estate speculation [26, 29], leading to increasing rental prices, gentrification or increasing inequalities in the core neighborhoods of big cities. This is especially relevant in a context that lacks clear rules and regulations for the housing and labor markets to effectively control all potential interactions, uses, and conflicts arising from the use of private buildings as CSs. On the other hand, CSs are seen as a strategic tool to facilitate the development of creative cities as well as peripheral areas by reinforcing the concentration of high-skilled creative workers. CSs are seen as drivers of revitalization, community building, and improvement of surrounding public spaces [18, 19, 26, 29].

Even if there is a clear preference for CSs to be located in urban areas, given the advantages of agglomeration economies, there are some examples of successful

² The creative economy is based on the concentration of creative people and industries with traded and untraded agglomeration externalities. Its main core is the maximization of opportunities for face-to-face meetings, which allows for the exchange of tacit knowledge aiming to contribute to sustainable growth, jobs, and social cohesion (DCMS [11, 18, 19], Scott 2006; Pratt 2008; European Commission [16]).

³ The sharing economy is an economic system that enables a shift away from a culture where consumers own assets toward a culture where consumers share access to assets. This shift is driven by peer-to-peer internet platforms, which will disrupt the unsustainable practices of hyper-consumption that drive capitalist economies [3] (Martin 2015).

⁴ See, for instance, the following papers for alternative definitions of CSs: Spinuzzi [34]; Capdevila [6], Moriset [29], Merkel [28] or Mariotti et al. [26].

semi-private initiatives that developed CSs and coliving spaces in less populated areas.⁵ However, the increasing attraction to urban areas should make us think about the fact that in the next years, more than 70% of the population and jobs will be concentrated in urban areas. This is the case in Spain, where most of the population lives and works around the two major cities, Madrid and Barcelona, and to a lesser extent around the other regional capitals, which highlights the serious problem of depopulation in rural areas. Thus, rural population drift is currently a great challenge for policy-makers in most countries, due to the lack of territorial cohesion arising from this phenomenon.

However, the spread of new technologies that facilitate teleworking and the increasing phenomenon of the creative economy may facilitate the gradual success of using CSs and cohousing spaces in rural areas. Moreover, the availability of more affordable housing in smaller cities and villages, even with entrepreneurial projects linked to housing rehabilitation, and the reduction of commuting are also advantages in terms of living and home-based business conditions [4, 32]. In this regard, new generations, characterized by college-educated professionals in their mid-twenties and their late-thirties who primarily work within the creative industries, such as web development, graphic design, and programming, or new media [20], and look for alternative lifestyles, may be willing to locate in rural areas because of the inspiring and slow-way of life that is typical of these places.

Most of the studies in Spain focus on the two largest cities, Barcelona and Madrid. Capdevila [5] focused on the Catalan case through the analysis of the network of coworking spaces in the region and showed that the diffusion of the practice of coworking from urban to rural areas is not a replication but is an adaptation to a new context. In Madrid, Alonso-Almeida et al. [1] considered how the presence of coworking operators and spaces is changing the way people go to the office in Madrid and argued that coworking spaces help to work safely and overcome the problems related to working at home.

Because of all the above, this phenomenon becomes a new concern for regional policies, since CSs may have several implications for the daily life of inhabitants and bring new regulatory challenges.

⁵ See, for instance, the case of Pandora Hub Project (<http://www.pandorahub.co/>). Pandora Hub is “a network of people, places and projects. Local heroes, activists, rural coworking and coliving spaces, startups, facilitators and business hackers. They have proven that working and living close to nature in rural areas help us achieve a healthier and fulfilling lifestyle”.

3 Data and Methods

3.1 Data

The data used in this chapter about CSs in Spain comes from different sources. Firstly, we used data at Eurostat NUTS3 level (province level in Spain). The NUTS3 socioeconomic information (i.e., population) is based on INE data (the Spanish statistical service).

Data on Coworking spaces (599 spaces) was gathered as part of the COST Action CA18214 “The geography of NewWorking Spaces and the impact on the periphery” based on the data available from coworker.com website. All information refer to 2021.

3.2 Methods

This chapter uses a combination of Geographical Information Systems (GIS) and distance-based methods (concretely the Kd function) to analyze the location and agglomeration of CSs in Spain.

First, in the context of the location of economic activity, GIS can be used to analyze and visualize data on businesses, industries, and economic activity in a particular area. In this case, we used it to display the location of CSs across the country.

Second, the Kd function, also known as the “density function,” is used in urban economics to measure the relationship between land use and land value [13, 14]. This function can take different forms depending on the specific assumptions about the relations between density and land value. However, it is typically used to estimate the optimal density level for a given parcel of land. In this chapter, the function is used to measure the agglomeration of CSs for different distances.

4 Results

This section introduces the main results of the chapter. Figure 1 shows the density of CSs by province in Spain in 2021. This measure shows the presence and importance of CSs at province level (NUTS3) in relative terms.

It can be observed that the two provinces with the highest density of CSs (i.e., the lowest number of people per CSs) are the provinces of Barcelona and Madrid, followed by Valencia, Malaga, Castellon, and Granada. The aforementioned provinces correspond to the most important cities in Spain in terms of economic activity as well as creative and technological industry [33]. There provinces with high densities, such as Orense or Valladolid; this is due to the fact that these provinces

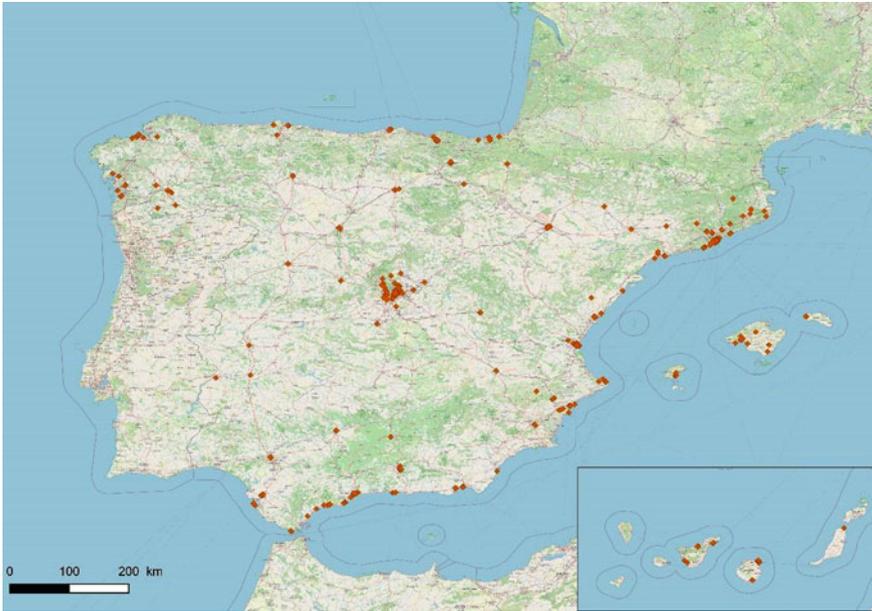


Fig. 1 Location of CSs in Spain. *Source* elaboration by the authors

have very low population, which makes the concentration of CSs in them more relevant. Then come provinces such as Seville, Zaragoza, and Vizcaya, which contain very important cities in terms of density and economic activity.⁶

Lastly, on the one hand, we can observe that there is a pattern regarding the density of CSs at a provincial level. This is seen in the provinces along the Mediterranean coastline (area known as the “Mediterranean Corridor”), which stretches from the province of Gerona to the province of Cadiz. Along this corridor, only the province of Murcia has a low density of CSs. Except for the Mediterranean Corridor, we find a high concentration in the Madrid region, corresponding to the city of Madrid, the capital of Spain. The concentration of economic activity in these regions is due to a combination of historical, geographical, and political factors. The Mediterranean Corridor has traditionally been an area of commerce, with the presence of important seaports facilitating trade. Madrid’s central location in Spain makes it a strategic location for the distribution of goods and services. Furthermore, both regions have received significant investments in infrastructure, technology, and human capital, contributing to their economic development and attractiveness for businesses. Overall, the concentration of economic activity in these regions has led to a solid economic and commercial infrastructure that allows for competitiveness at

⁶ Regions with more economic activity (i.e. big cities) tend to attract more CSs due to a higher demand for flexible and collaborative workspaces from entrepreneurs, startups, and small businesses that require access to resources and networking opportunities to support their growth [24].

the national and international levels, with a strong economy, reflected by the presence of CSs.

On the other hand, we find regions in with no CSs identified, or a very low density of CSs. These regions correspond to rural Spanish provinces (e.g., Caceres, Badajoz, Jaen, La Rioja, Teruel, or Toledo), characterized by low population densities and where the most important economic sectors are the primary and secondary ones, which have very low added value.

Observing Fig. 3, which shows the average entry price per desk in a CSs, an interesting pattern emerges. While in Fig. 2, the highest density of CSs corresponded to the entire Mediterranean axis and Madrid, when looking at the average entry price at a provincial level, we find that the lowest price does not correspond to those regions with a high density of CSs (indeed, in provinces such as Barcelona or Madrid the aver price per desk is higher than average). This may be due to the fact that in these provinces, despite the higher presence of CSs and greater competition, the price of land and office rent (necessary for CSs) is significantly higher than in the other provinces, and this causes an increase in the entry price of the CSs.

The provinces where we the average price is lower are 1) provinces with a lower density of CSs but located in the Mediterranean axis (i.e., Castellon and Almeria, followed by Tarragona, Malaga, or Murcia) and some clearly rural interior provinces (such as Cuenca, Badajoz, Jaen, or Ourense) where prices are lower either due to

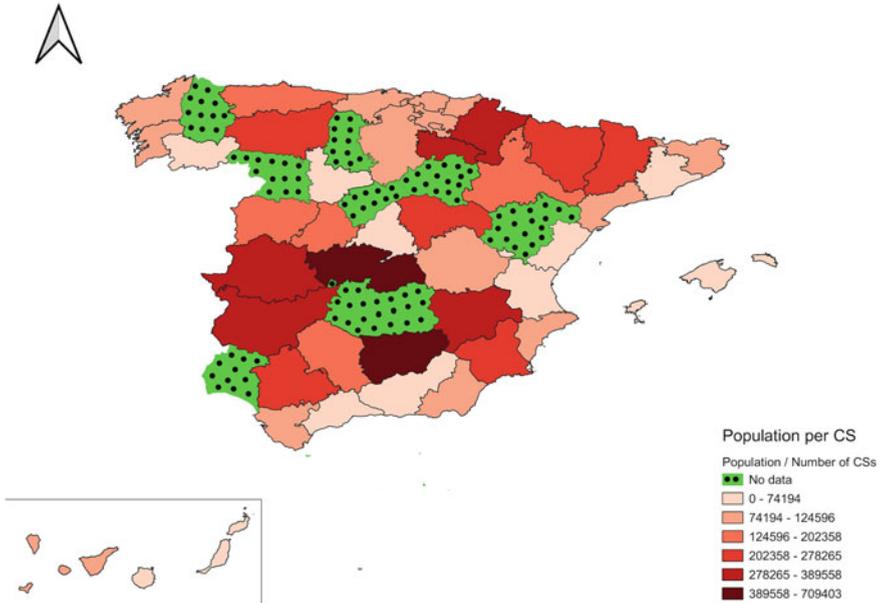


Fig. 2 Population per CSs by province (NUTS3) for Spain. Year 2021. *Source* elaboration by the authors

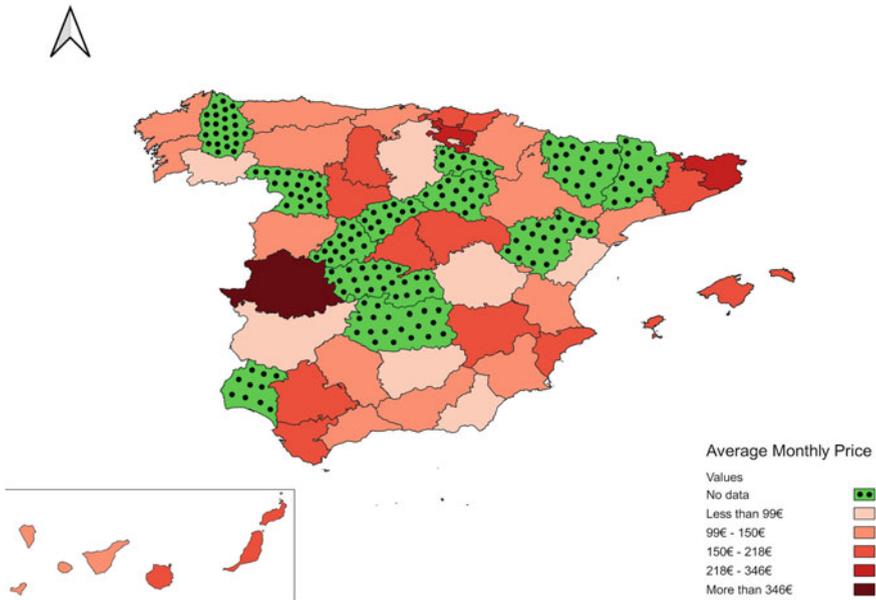


Fig. 3 Average monthly rate of CSs by province (NUTS3) for Spain. Year 2021. *Source* Elaboration by the authors

low demand for CSs or because most of CSs in these areas are publicly managed or receive public subsidies.

Finally, Fig. 4 shows the Kd function of the location of CSs in Spain, at a radius of 200 km (to visualize regional agglomeration) and at a radius of 20 km (to visualize urban agglomeration).

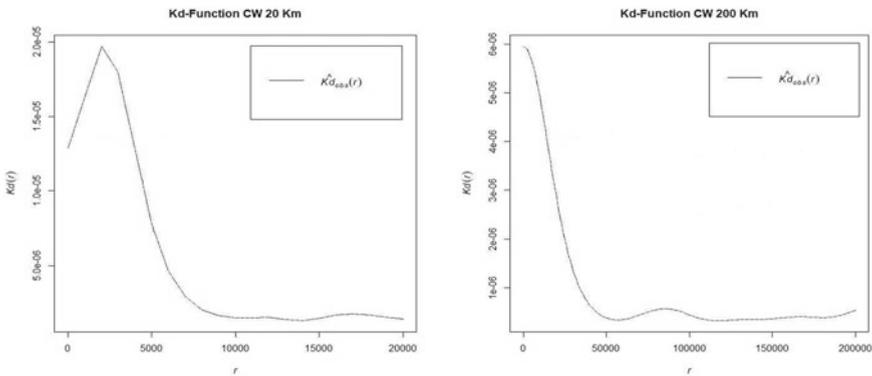


Fig. 4 Agglomeration of CSs. Year 2021. *Source* Elaboration by the authors based on CSs data. Note: Radius (r) in meters

On the one hand, if we look at the regional radius (200 km), it can be observed that the density of agglomeration of CSs spaces is very high at the start and rapidly decreases; this shows that CSs spaces are mostly located in major cities and purely urban areas. Also, it is noted that between 70 and 90 km, the density of CSs slightly increases and then falls again. This is due to the average distance between provincial capitals in Spain being around 90–100 km (approximately, all provincial capitals are 100 km away from the nearest provincial capital), which causes the agglomeration function to grow in that range and shows that CSs are mostly located in provincial capitals in Spain.

On the other hand, regarding the urban range (20 km), it is observed that the function increases between 0 and 3000 m, showing that in the urban setting, in Spain, CSs agglomeration generally occurs at a urban level and not by districts or clusters as in other industries (that need to be located close together to benefit from localization economies). Generally, in Spanish provincial capitals, with some exceptions in the larger cities (e.g., the 22@ district in Barcelona or technological clusters in the main Spanish cities), CSs provide a solution for remote workers and freelancers to work close to home. Therefore, they are generally distributed equidistantly in the city (hence the function reaches its maximum density of agglomeration around 3000–4000 m, which coincides with the average diameter of Spanish provincial capitals).

5 Discussion

The main aim of this chapter was to identify and explain the location patterns of CSs in Spain. Therefore, we contribute to the literature on CSs by providing a micro-analysis of the agglomeration of CSs in urban and rural areas. Furthermore, we dealt with previous methodological limitations by making use of geographical information systems and the Kd-function of agglomeration [14, 15] in the analysis of location patterns of CSs. Specifically, our results showed that (i) CSs are highly concentrated in the most central areas of Spain: Barcelona and Madrid, followed by the Mediterranean Corridor; (ii) at the regional level, CSs are significantly agglomerated at short distances, and this agglomeration rapidly disappears as distance increases, showing that it is an urban phenomenon; and (iii) at the urban level, in capital provinces CSs are distributed throughout the city so as to provide amenities and workplaces to freelance and teleworkers, except in the case of Madrid and Barcelona, where CSs cluster in some specific economic areas as 22@ in poble nou area [7].

These results confirm our preliminary expectations and complement previous contributions. Specifically, they endorse the theoretical discourse that CSs find clear advantages in agglomerating in urban cores [7, 26, 28, 29]. Moreover, they complement the findings of [5, 24], and Tomaz et al. (2022), who analyzed the location patterns of CSs in urban and rural areas in countries such as Italy and France. We also found that CSs are highly clustered around the metropolitan areas of Barcelona and Madrid, but some focal locations are also found in periurban and rural areas.

However, by taking advantage of GIS and the Kd-function to test the statistical significance of the results at each distance, we could also ascertain the factors that may influence their location decision.

From the literature and our findings, it is possible to raise some questions for further discussion. First, given that CSs are highly agglomerated in urban areas, one may concern the actual impact that the agglomeration of CSs may have in increasing office rent prices in the city center and the limitations to build strong horizontal networks that facilitate connections across professionals, residents, and public sector actors [4, 6, 35]. Second, the increasing attraction to urban areas should make us think about the fact that in the next years, more than 70% of the population and jobs will be concentrated in urban areas. Thus, the location of CSs in rural areas may be a window of opportunity for policymakers to face rural depopulation. Nevertheless, acting against rural depopulation through the creation of CSs and coliving spaces in rural areas, requires developing a critical mass and appropriate regional policies and legislation design.

Despite all these facts, this chapter has some limitations. In this regard, future research can expand this analysis in two main ways. First, the period of analysis should be expanded to check for time dynamics on the location patterns of CSs. Second, it would be worthwhile to include spatial-time dynamics, particularly to examine the shock of the Covid-19 pandemic.

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The Importance of Location for Coworking Spaces and the Timed City Concept. Experiences, Perceptions, and Reality in Malta



Thérèse Bajada, Bernadine Satariano, and Seyed Hossein Chavoshi

Abstract In this chapter we aim to unravel the importance of the link between three themes: location, Coworking Spaces (CSs), and the timed city concept. We argue that location, CSs, and timed cities are interdependent and complement each other. To do this, we use Malta as a case study, a small high densely populated, car dependent island state that has only been exposed to CSs in the previous decade. To support our argument, we conducted semi-structured interviews with two CS owners, four traditional employers, and an entity representing employers. The former provided their experiences of having CSs in Malta and the latter two discussed their perceptions of CSs. The reality and the importance of location are represented through Geographic Information Systems, by which we analyzed walkable areas within the catchment of the CSs. The findings highlight that location unravels the importance of micro-geography in the context of an island state when considering the applicability of CSs and the timed city concept. Furthermore, the research resonates with the literature with regard to issues associated with mobility, accessibility, job type, and peripherality.

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1 Introduction

This chapter aims to unravel the importance of location for Coworking Spaces (CSs) in relation to the timed city concept. The reason for investigating this topic is the need to show that CSs and chrono-urbanism¹ are location dependent; this is important for policy making and business. Geography has a crucial role here, the site and situation of CSs can influence their accessibility and the opportunities for people to use them. The timed city concept is very much proximity dependent, hence location is critical for its success. In cases where CSs and chrono-urbanism are applied as part of a policy package to encourage sustainable urban environments [2, 3], location plays a key role.

In this chapter we use the case study of Malta to highlight the importance of location for CSs and the timed city concept to work. We choose Malta because it is a unique case study in that it is an island state, has one of the highest population densities in the European Union and CSs started being established there after 2013. The fact that Malta has a high population density, on paper, makes it a good candidate to implement chrono-urbanism and link it with CSs. However, there are complexities, some of which are associated with location.

We will explore some of these complexities through experiences, perceptions, and reality. The experiences and perceptions are illustrated from a set of narratives that are derived from semi-structured interviews. The reality is portrayed using spatial analysis through Geographic Information Systems (GIS).

1.1 Background

Malta is a Mediterranean island state situated between Sicily and Libya. It joined the EU in 2004 and apart from having one of the highest population densities, suffers from severe car dependence compared to the other EU member states. We use the term ‘suffer’ because of the associated negative impacts of respiratory diseases, social inequity, accidents, environmental impacts, and economic issues associated with reliability and punctuality in relation to traffic congestion. All these negative impacts create an unsustainable human and physical environment. However, there are ways for Malta to work toward becoming a sustainable island. As discussed in Bajada et al. [2], small initiatives such as combining the timed city concept with CSs in a policy package can tweak and improve the situation.

The whole land area of the archipelago of Malta is only 316 Km². The population is half a million [4] and is distributed mainly in the Northern Harbor and Southern Harbor districts, followed by the South Eastern, Western, and Northern districts

¹ Carlos Moreno defined chrono-urbanism as questioning in-depth what the city offers residents for the use of their lifetime. Chrono derives from the Greek, which means time. Hence, chrono-urbanism can be defined as the activities and lifestyles that people living in cities can perform as a result of the opportunities within the cities and what is available within their proximity [1].

(Fig. 1). CSs are dynamic in Malta; however, it seems that the numbers of CSs fluctuate around twenty. These are mostly established around the Northern Harbor and Southern Harbor districts. Figure 2 shows the density of existing CSs in Malta. Spatially, the map clearly shows that location plays a major role in choosing where to set up CSs, as they are usually established in districts and places that attract employment such as Gzira and St Julian’s (Fig. 2). Interestingly, the capital city, Valletta, which is one of the main administrative centers in Malta, has two active CSs, and another one is located in its outskirts; the latter is only partly active and is also used as a makerspace.

Valletta is a good example to show the importance of location at the micro-geographic level. Valletta is a peninsula that covers an area of 0.84 Km² [4]. Apart from being the capital city of Malta, it is also a World Heritage site. It is situated in the Southern Harbor district and forms part of the Grand Harbor. The topography of Valletta is hilly because it was built on a promontory, and therefore, the main activities are situated on the top part, while the residential areas and the peripheral CS are situated in the lower parts. The micro-geography here affects the location of the CS, and, on a micro-scale, the peripheral location of the CS affects it in terms of its visibility and usage.

Chrono-urbanism, i.e., the timed city concept, is now a well-established term in the literature (e.g. [1, 2, 6]). It gained traction during the COVID-19 pandemic, when major cities such as Paris and Milan identified active traveling (walking and cycling)

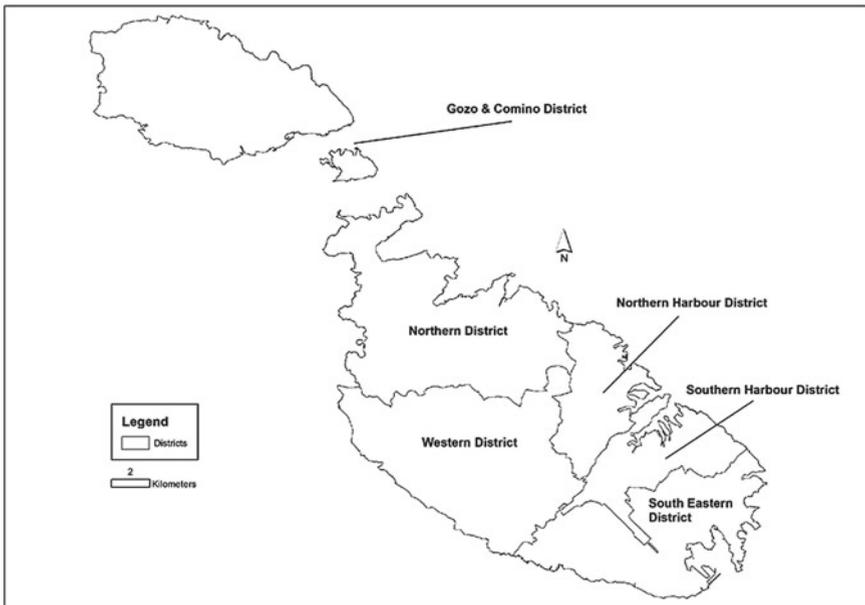


Fig. 1 The six districts of Malta. Drawn by authors

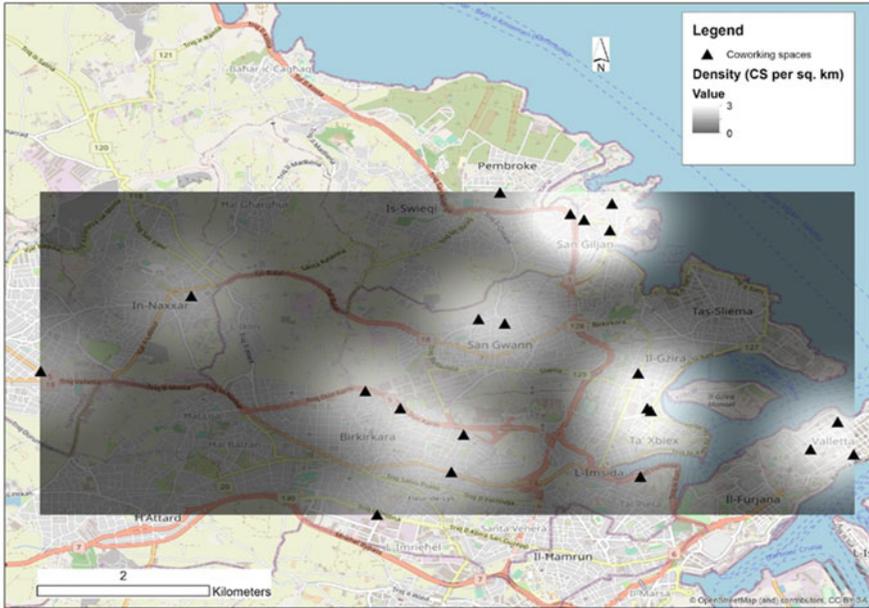


Fig. 2 Density of CSs in Malta. Drawn by authors adapted from [5]

and use of public transport as a good solution toward sustainable mobility. As the name implies, the timed city concept is linked to the possibility of covering an area of the city within a certain time-frame. The timeframes most commonly applied are 15 and 20 min. Proximity is important, as within the said time period a person should be able to access activities such as employment, shops, other services, and leisure activities. Hence, CSs and chrono-urbanism fit perfectly together because CSs can facilitate the commute within a short distance and the set time-frame [3].

In Malta, the timed city concept has not yet been applied, but as discussed in Bajada et al. [2], there is great potential for this to happen. The island is small, distances are short, and high population density exists. The problem is car dependence and the associated infrastructure. In 2020, Malta had 780 vehicles per 1000 total residents [7], and despite strategy documents on sustainable mobility [2], the infrastructure is mainly designed to cater for cars. By making a change in policy and implementation, shifting more toward sustainable mobility and linking the timed city concept with CSs, the situation can improve, and location is critical in this case.

2 Literature Overview

CSs and timed cities are two concepts that work well together; they can be used as part of designs and implementations of sustainable planning strategies [2, 3]. Di Marino et al. [3] used spatial analysis through GIS to support this. Furthermore, CSs conglomerate naturally with services [8], which makes the idea of combining these activities with high urban density even more plausible [9].

Urban areas are, however, complex. These complexities are influenced by demography, mobility, accessibility, employment, and geography, amongst other variables [10]. When designing and implementing strategies that combine CSs and timed cities, it is imperative to consider these complexities. For example, mobility and accessibility are essential components to ensuring safe and equal opportunities for all sectors of society in a city [11].

Complexity is also influenced by the location of residences and places of employment. Residences and employment locations can be situated in peripheral locations and CSs can act as intermediaries and thus become places and spaces of interaction [12].

Location is a key component both for CSs and for chrono-urbanism. For CSs, location can be viewed in two ways. First, as a determiner of social capital, i.e., who will use the CSs; second, from a geographic point of view, users use CSs to improve their work-life balance, as CSs reduce stress from urban life and urban transport problems [13] and therefore helps one focusing on their mental wellbeing. Timed cities are dependent on proximity [6], which determines the (sufficient) number of opportunities individuals have to carry out activities within a time dependent catchment area that is accessible mainly by active traveling.

Essentially, location plays a key role for the success of both CSs and the timed city concept. This brief overview has shown that in relation to location, high urban density and accessibility are key components for CSs and timed cities to work well together.

The success of both CSs and the timed city concept heavily depends on their location. This concise summary has demonstrated that urban density and accessibility are crucial factors for enabling CSs and timed cities to effectively collaborate with each other. In general, a highly urbanized and accessible location would provide favorable conditions for the implementation of CSs and timed city concepts. Malta is a small island nation, and its urban areas are relatively densely populated, which may potentially support the integration of CSs and the timed city concept. However, the specific characteristics and challenges of Malta's urban environment must be taken into account in any assessment of the feasibility of implementing CSs and timed city concepts in the country.

3 Research Methodology

The research presented in this chapter is based on a set of semi-structured interviews carried out between October 2020 and January 2021. The interviews were held online due to the pandemic. Each interview included eight participants: two CS owners (CS), five traditional working space owners (TWS), and an entity representing employers (EE). CS owners discussed their experiences in Malta, while the other participants discussed their perceptions of CSs. The interview with the employers-related entity involved two participants.

Table 1 shows the code assigned to each participant, the location of their respective sites and the years that they have been established and operating in Malta. It is interesting to note that the two CSs were both established in 2017.

The interview questions were specifically designed for each type of participant (i.e., CS, TWS and EE) given their different backgrounds. In addition to the questions, the interviews included prompts to add to the discussion and facilitate the flow of the interviews. The CS participants were asked about their reasons for establishing their business in Malta and about the effect of the market on this. The TWS and EE participants were asked to provide their opinion on CSs, so that their perceptions could be identified. The interviews lasted between 30 to 40 min and were recorded for later transcription and analysis.

The analytical method was inductive. We used the grounded theory approach to identify themes from the transcripts. The following section includes the narratives and the relevant themes that refer to location.

We use GIS, specifically ArcMap 10.8 [14] to show the reality. By reality here we mean the reality on the map, which may eventually be used to test the outcomes on site. The analytical method uses two types of spatial analysis. The first spatial analytical technique is buffer analysis, which calculates the timed city concept (15, 20 and 30 min) over related distances. The buffer here is calculated using Euclidean distance, which means as the crow flies.

Table 1 Description of the semi-structured interview participants

| Code | Location | Years established |
|------|-------------|-------------------|
| CS1 | Valletta* | 3 |
| CS2 | Birkirkara | 3 |
| TWS1 | St Julian's | 2 |
| TWS2 | Birkirkara | 5 |
| TWS3 | Luqa | 17 |
| TWS4 | Lija | 10 |
| TWS5 | Paola | 11 |
| EE1 | Floriana | 72 |

* The location of this CS is on the upper part of Valletta, is not in the outskirts

The second spatial analytical technique uses Network Analyst, is an application in ArcMap 10.8 dedicated to solve network related problems. In this case, we use it to produce an isochrone of the 15-min city, which covers a proximity of 500 m from the CS. Isochrones are specifically used to show a an area that can be reached in a specific amount of time from a certain starting point, in this case by walking [15].

4 Analysis

This section is divided into two parts. The first part refers to the narratives derived from the semi-structured interviews, the second part refers to the spatial analysis.

4.1 Experiences and Perceptions: The Narratives

The main themes that emerged in relation to location of CSs were: the site, accessibility, residential location and job type, and peripheral areas. The following narratives highlight the experiences of CS owners and the perceptions regarding CSs from TWS owners and the EE.

The site. CSs in Malta are located in the central area. Both CS1 and CS2 indicated that they chose the location of their CS based on its level of accessibility. CS1 is based in Valletta, which makes it highly accessible through different means of transport such as bus, ferry, bicycle, public transport, together with the possibility of travelling by car.

“We’re in Valletta, so, by being here, which was a deliberate choice, we’re at the hub of the bus network, and we’ve got the ferries, both sides and whenever they get, the fast ferry to Gozo, then that will be coming in, just down the hill from us.” (CS 1).

The choice of being located in central areas is backed by the argument that public transport is not well connected with rural or peripheral areas and therefore does not enable the CSs to flourish.

“If we had chosen to be in Zurrieq or Qrendi [rural peripheral villages] ... people wouldn’t have the option to come by public transport anywhere near so easily...” (CS1)

Accessibility. CS owners pointed out that location choice is determined by the small size of Malta. This enables individuals coming from all of Malta to make use of CSs as they are always in close proximity to their homes.

“...it becomes easy to appeal to a lot of the market just by having one location because nowhere is really far”. (CS2)

This narrative, however, is counteracted by EE, who stated distance is not a problem but traffic is. Similarly, CS2 highlighted the waste of time spent traveling across Malta, which is definitely not linked to the distances but to being stuck in traffic.

“Well, actually even in Malta an hour’s commute is not desperately uncommon, you know, I can save two hours a day if I do not travel.” (CS1)

“The issue of traffic is that most of the time employees and employers generally use their cars ... I’m thinking of the Maltese and their love of cars.” (CS1)

Considering this, many employees experience a high level of stress as they are in traffic on a daily basis. This is also related to the fact that most offices are in central areas. In addition, the fact that many people who work in the same area also creates problems in the availability of parking lots.

“... parking problems and all of what it actually entails trying to get into the center of Malta in the morning.” (TWS2)

The owner of CS2, which is located in the central part of Malta, is aware of the traffic and parking problems close to the office. They said they were trying to find solutions to the limitations of parking and traffic as they were aware that registration with and use of the CS may be affected by traffic and parking issues.

“We’ve explored, tried to explore, possible solutions to the problem of parking locally... So, one of the things that we tried to do is identify parking hotspots and find a way, how to track these spots so that our clients can go on an app, for example, and, you know, see where they can [park].” (CS2).

Residential location and job type. The idea of using CSs depends on the employees and the nature of the company. TWS3 operates predominantly online and employs individuals from Gozo and people who live abroad, and had already started giving its employees the option to work from home or CS based outside their premises before the COVID-19 pandemic. For this company, it was more beneficial to keep its employees by giving them the option of working remotely rather than losing them because of the long time spent in traffic during peak hours.

“We started working from home with all our Gozitan employees, ... to avoid all the traffic and hassle... As soon as COVID hit, we asked all employees ... [to] start immediately working from home. We had already done all the changes necessary from an infrastructure point of view to be sure that all our employees could log into their systems and log into our servers and so on remotely.” (TWS3).

The operation of CSs in Malta is also related to the type of job. It has been pointed out that some jobs cannot be carried out in a CS environment.

“For example, working in CSs may be a problem if the type of work requires a level of privacy to the employees and the customers.” (TWS3)

“...if you’re a divorce lawyer, for example, and you don’t want to show everyone that you’re divorcing, everybody’s gonna see you” (TWS5)

Peripheral areas. CS owners feel that these spaces can alleviate pressure on traffic problems as their location can be peripheral.

“I think that these centers have a positive effect in terms of the load on the transportation infrastructure and so far as if companies were to decentralize their office space” (CS2).

The location of CSs is beneficial for people’s health and wellbeing as people can work within a community. When working in peripheral areas, they will experience less stress every morning in traffic, and they can also experience the social connections and features of social capital in the community.

Some participants, however, stated that having CSs located in peripheral areas would not reduce the traffic problem, as it is found everywhere.

“...mobility, I still struggle to see how it has much of an effect on CSs ...because if it’s not teleworking ...it still involves an element of transportation” (CS2)

Some are also unsure about the possibility for CSs to operate in peripheral areas, since even if the space is attractive to the employees as they do not need to travel to central areas, on the other hand, customers who have to travel to non-central areas might perceive this as inconvenient.

“Because of being central, and it’s easy to go to different parts of the island, but also for customers to visit us.” (TWS2).

4.2 Reality: Spatial Analysis

The spatial analysis in Fig. 3.

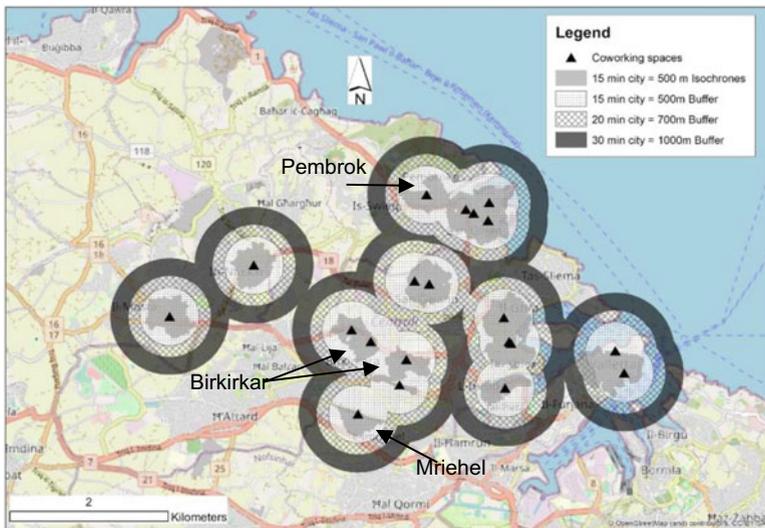


Fig. 3 Spatial analysis includes the buffer analysis and isochrones from the CSs. Drawn by the authors.

shows the buffer analysis and network analysis that has produced the isochrones. The buffer analysis shows the catchment area when departing from the CSs: in 15 min–500 m, 20 min–700 m, and 30 min–1000 m. The isochrones show the reachable areas when departing from the CSs in 15 min walking distance, which also covers 500 m. As the shape of the isochrones shows (Fig. 3), they are influenced by the micro-geography and the transport network.

Whereas the buffer analysis shows that a wider area can be reached within the set timeframes, the isochrones around the locations of the CSs indicate a more restricted catchment area. If individuals were to walk or cycle to the CSs, they would find barriers in relation to road infrastructure. This is evident from the irregular shape of the isochrone pattern, which indicates major roads as patterns, such as in the case of Mriehel, Birkirkara, and Pembroke (Fig. 3). The patterns that emerge in these cases are all along roads, e.g., Birkirkara and Pembroke, or the road acts as a barrier, e.g., Mriehel. Based on the authors' knowledge of the areas, these roads are mainly intended for car use. Infrastructure for safe pedestrian walkways and safe cycle lanes are minimal or non-existent. The reality here is that access to apparently accessible areas is actually still difficult due to poor infrastructure: as the timed city concept requires, infrastructures should be mainly devoted to active mobility.

5 Discussion

The case study used in this research, Malta, shows that location plays a major role when considering the applicability of CSs and the timed city concept. Additionally, the micro-geography is crucial in certain instances for the use of the CSs, especially in cases where there are topographical or infrastructural changes. Perhaps, these details at a very small scale emerge because of the small size of the study in question. To our knowledge, micro-geography in this context, and together with the idea of timed cities, has not been explored academically, yet. Location has been certainly looked into, e.g. [3, 9, 12], but not from a micro-geographic perspective.

This research resonates with the literature in terms of the narratives that emerge in association with more generic references to location. For example, when talking about the site, central areas are better connected than rural or peripheral areas, as discussed in Di Marino et al. [3]. This connectivity is particularly associated with accessibility as is also referred to in Di Marino et al. [3], which also looked into the location of public transport infrastructure. Furthermore, mobility and accessibility are associated with the stress or the feat of reducing stress in the daily commute when using CSs, as is supported by Weijs-Perrée et al. [16]. In this research, this argument of stress emerges in relation to both CSs located in a central area and CSs on a peripheral area. According to Mariotti et al. [17], peripheral areas have a major role in improving the health and wellbeing of employees.

6 Conclusion

This research looked into the role of location when considering the applicability of CSs and the timed cities concept. To do this, we carried out semi-structured interviews with CS owners, traditional workplaces, and an employer entity. The narratives revealed the realities of CS owners, and the perceptions on CSs of traditional workplace owners and of the employer entity. We also used GIS to show the reality as displayed on a map, which was backed up by the authors' knowledge of the mentioned areas.

The findings resonate with the literature when referring to the role of location and the associated link with CSs and timed cities. Interestingly, the concept of micro-geography emerged indirectly from the narratives and specifically from the spatial analysis. To our knowledge, this concept has not yet been directly investigated in the context of CSs and timed cities, especially with reference to island states.

We conclude this chapter by formulating a set of recommendations for future research. First, studies are needed that investigate multiple variables, including economic aspects, location of services, wellbeing, and accessibility by alternative modes of transport, such as public transport. Second, further investigation is needed on the role of micro-geography in the links between CSs and timed cities. This can be explored within the case of an island state but also in comparison to other case studies on the mainland.

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The Localization of Different Types of New Working Spaces in Central Europe



Oliver Rafaj, Lukáš Danko, Shifu Zhang, and Eva Belvončíková

Abstract This chapter deals with the emergence of six different types of working spaces in Central European cities. Coworking spaces (CSs), makerspaces, fab labs, hackerspaces, living labs, and corporate labs are legal entities that in scientific literature are referred to as new working spaces (NeWSps). This chapter provides a summary overview of the emergence of individual types of NeWSps for in 138 selected cities of Central Europe—specifically in Poland, Czech Republic, Hungary, and Slovakia—over the last 15 years. The results of our research showed that between 2007 and 2021, a total of 712 NeWSps entities were established in V4 countries, with CSs being the most represented (approximately 85% of the total number of NeWSps are coworking paces) and living labs the least represented. Our results further showed that the larger the number of inhabitants in cities and countries, the greater the number of established NeWSps in them. In the final part of the chapter we present examples of good practice for individual types of NeWSps from selected cities of the V4 countries.

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1 Introduction

New working space (NeWSp) is a term that encompasses a wide range of places that enable working in a shared environment [9]. They are considered a new phenomenon that has been occurring mainly in cities over the last 15 years. CSs, makerspaces, fab labs, corporate labs, and other spaces, have been established in different cities around the world. Although this phenomenon is more visible and more studied in the Western parts of the world, especially in the US and Western Europe, these entities have also emerged in other regions as well. In this chapter we attempt to present a spatial evolution of NeWSps in Central Europe, specifically in Visegrad 4 countries (V4)—Poland, Czechia, Hungary, and Slovakia. These countries have several common characteristics, as they have all undergone economic transformation in recent times. However, there is currently a research gap in terms of published studies on localization of NeWSps in this geographic area. Although some articles, mainly about the localization of CSs, in this region were published, they almost exclusively focused on the capital cities and their comparison with other European cities (e.g., [10] for Poland and [2] for Czechia), or on selected areas of the country (e.g. [11] for Slovakia and [7] for Hungary). The authors of this chapter believe that this contribution provides one of the first comparative, comprehensive overviews of the localization of different workspaces and thus will help to reduce the existing research gap. This chapter deals with six different types of working spaces. The aim of this chapter is to present a spatial pattern of NeWSps within V4 countries during the last 15 years. For each of the selected types of NeWSps we also discuss one good practice from different V4 cities (see section chapter “[University Hubs: Hybrid Spaces Between Campus, Work, and Social Spaces](#)”).

2 Methodology and Data

To fulfill our aim, we have created a unique database of six different NeWSps within V4 countries. The types of working spaces for which we obtained data were: CSs, fab lab, makerspace, hackerspace, living lab, and corporate lab. We collected data on cities with at least 20,000 inhabitants in V4 countries. We decided to process the analysis for cities with more than 20,000 inhabitants, as based on our data, they contain more than 95% of all identified CSs and other types of new working spaces. We developed a list of cities for individual countries based on statistical data on the number of inhabitants per municipality from the official databases of national statistical offices. Our final list consists of 138 cities.

To create our own database, we used two data collection approaches. The first approach was to collect data on entities from established webpages that collect data on different working spaces (such as CSs or makerspaces). We used data from Coworker.com and Regus.com and used these websites to enumerate all the existing entities in each city included in our list. The second approach consisted in collecting

data manually via the Google web search engine. In the search field, we gradually entered individual cities from the list along with the type of working space being searched for. For example, for finding all CSs in the city of Bratislava via the Google search engine, we wrote: Bratislava coworking, and then we entered all entities mentioned in the search results into our database.

In our dataset we collected 998 different NeWSps. Subsequently, we verified their actual existence through their official websites and FB profile pages. From their websites and FB pages we collected data on the date they were established. Since not all entities stated their date of establishment on their websites or FB profile pages, we dropped those lacking this information from our dataset. Our final dataset consisted of 712 entities.

3 Results

According to our results, the first working space established was a coworking space in Prague, the capital city of Czechia. It was founded in 2007. Subsequently, in 2009 the first working spaces were also established in Poland and Hungary. In Hungary, three different CSs and one hackerspace were formed in Budapest. In Poland, the first entity was a coworking space in Warsaw. In the case of Slovakia, the first entities were established in 2010: one hackerspace in Bratislava and one coworking space in Košice.

It is not surprising that a greater total number of established working spaces was found in Poland. Furthermore, our data shows that the total number of established new working spaces is strongly related to the size of the city population.

Pearson correlation coefficient between the number of established NeWSps and city population is 0.91. We also identified strong correlations between the number of established CSs and city population (Pearson correlation coefficient is 0.90), between the number of established corporate labs and city population (0.74), and between the number of established makerspaces and city population (0.66). On the other hand, no strong correlation was found between the rest of NeWSps types and city population.

Another clear finding is that the most common established NeWSps within all countries were CSs. On average, 85% of all established NeWSps within V4 countries were CSs. On the other hand, the least frequently established NeWSps were living labs. This finding came as a little surprise because we expected that the least common type of NeWSps would be corporate labs because of the financial difficulty of their establishment and operation. Table 1 is an overview of all types of NeWSps established within V4 countries during the last 15 years.

However, differences can be seen in the development trend of the emergence of NeWSps within V4 countries. The data shows that in Poland there were three significant “population booms” with regard to the establishment of NeWSps. The first wave of new establishments occurred between 2009 and 2010, second one in 2014–2015, and the last one in 2017–2019. In other countries, the development trends were more conservative. In Czechia, the most significant NeWSps population growth

Table 1 Number of different types of NeWSps per country established in the 2007–2021 period

| Country | Number of | | | | | | |
|--------------|----------------|-----|----------|--------------|-------------|-------------|-------|
| | Corporate labs | CSs | Fab labs | Hackerspaces | Living labs | Makerspaces | Total |
| Czechia | 0 | 116 | 3 | 5 | 0 | 9 | 133 |
| Hungary | 1 | 62 | 4 | 3 | 1 | 5 | 76 |
| Poland | 21 | 365 | 16 | 14 | 1 | 15 | 432 |
| Slovakia | 0 | 62 | 2 | 4 | 0 | 3 | 71 |
| Total | 22 | 605 | 25 | 26 | 2 | 32 | 712 |

Source Elaboration by the Authors

was in 2014–2019. In Hungary, the most visible growth occurred in 2016–2020. And in the case of Slovakia, the greater population boom was in 2016–2018. Figure 1 shows the development of NeWSps within V4 countries over the years.

Figure 2 shows the cumulative development of NeWSps within V4 countries during the observed time period. As mentioned before, it is not surprising that the highest number of established NeWSps between V4 countries was in Poland, since from the perspective of national population this is the largest country in the group.

Another interesting but equally expected finding was that the number of established NeWSps changed in the observed cities. Our data shows that the number of established NeWSps in cities is strongly related to their population size. In the case of cities in the V4 countries, a kind of clear pattern can be seen. The more inhabitants a city has, the greater is the number of NeWSps established within its territory. Our data collection showed that the most NeWSps were created in Warsaw (117),

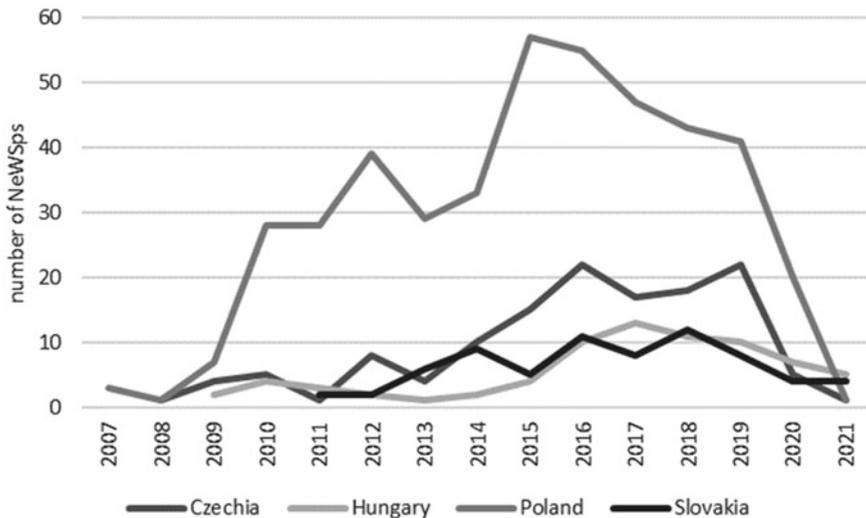


Fig. 1 Number of newly established NeWSps per year. Source Elaboration by the authors

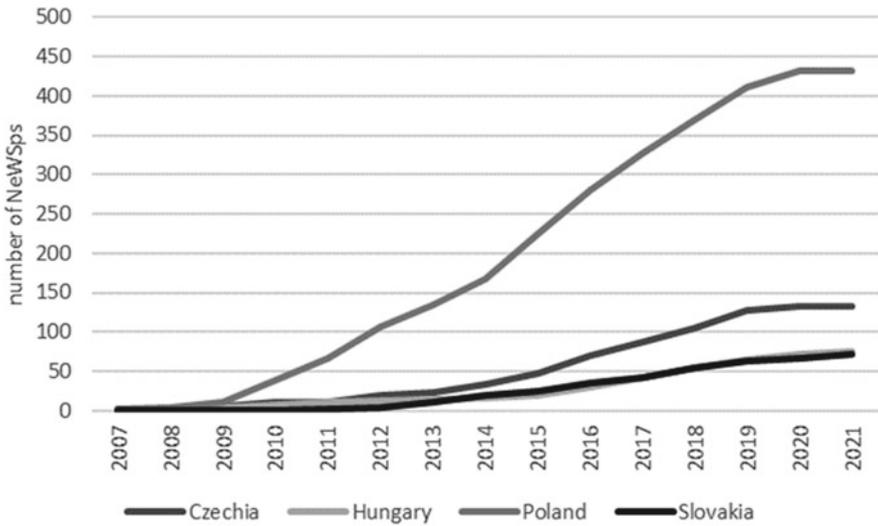


Fig. 2 Cumulative development of newly established NeWSps over time. *Source* Elaboration by the authors

Prague (48), Krakow (42), Budapest (41), and Wroclaw (38). In terms of total population, the largest cities in the V4 countries are Warsaw (1), Budapest (2), Prague (3), Krakow (4), Lodz (5), and Wroclaw (6). Figure 3 provides an overview of established NeWSps in all observed cities. The size of the bubble indicates the number of established NeWSps.

4 Examples of NeWSps in V4 Cities

This section presents best practices of NeWSps in V4 countries. We begin with coworking space as the most represented type. BASE4WORK Bratislava (founded in 2021) was selected as a best practice, as a jury of experts in the coworking movement awarded this space the Co-Working Space of the Year award by FRAME 2022. The award highlighted a picture of a thriving coworking movement in the capital city of Slovakia, in which this is a unique space attracting innovative and creative companies. It serves as a creative hub in a revitalized national cultural landmark. BASE4WORK Bratislava is designed as a flexible space with unconventional design solutions and space layout, for the benefit of workers and their comfort, with an emphasis on sustainability [1].

As for FabLabs, we present FabLab Budapest, which was founded in 2011 as a cornerstone of an international open innovation network involving more than 100 countries. More importantly, this space is not merely a manufacturing workshop but is rather a hub of digital manufacturing with a multi-stakeholder community. It

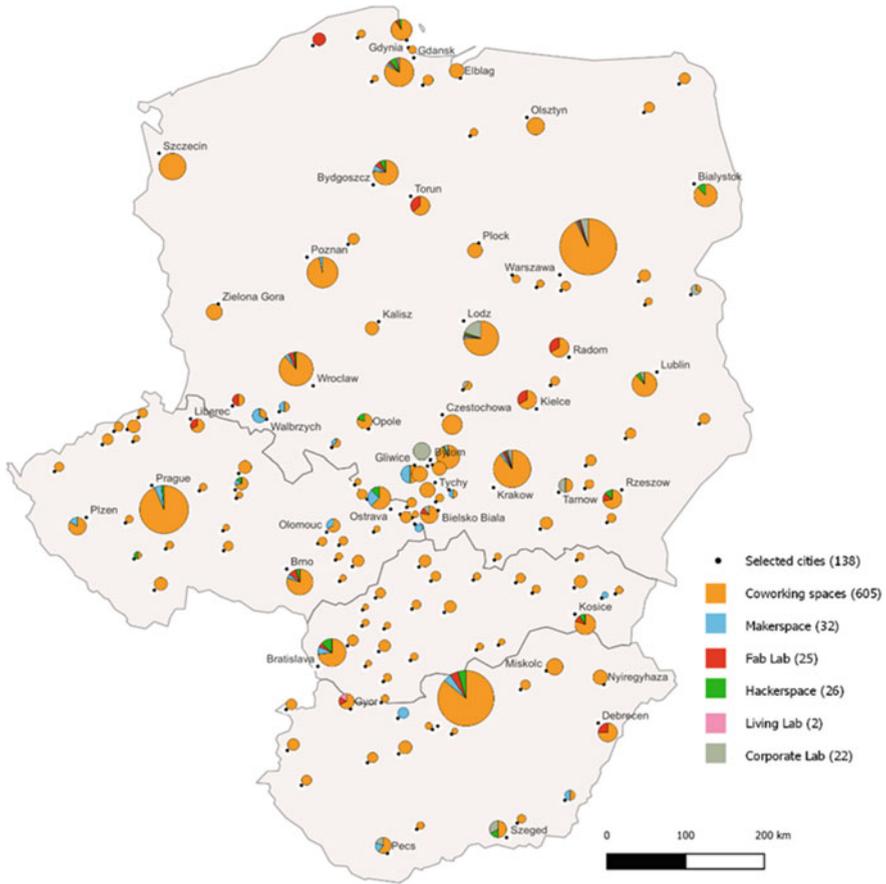


Fig. 3 Spatial distribution of newly established NeWSps in V4 countries between 2007 and 2021. *Note* For a better clarity of the figure, only cities with more than 100,000 inhabitants are assigned a name. *Source* Elaboration by the authors

provides state-of-the-art technologies and materials, with a great emphasis on talent development for prototyping and small-scale production. FabLab Budapest serves as a knowledge hub, linking experts with experience in managing complex innovative knowledge-based projects, investors, and individuals with entrepreneurial ideas.

Hackerspaces are currently on the rise with hackathons as a collaborative platform for programmers, software developers, designers, managers, and experts. This idea is intensified by Hackerspace Krakow, a collaborative NeWSp founded in 2012. Most importantly, this space is a true community-operated physical place where people learn, create projects and exchange knowledge. It signifies the idea of an open workshop primarily aimed at the local community, with a diverse portfolio of physical and virtual events to develop and work on projects and learn from each other. Hackerspace Krakow remains a vivid space with regular events to collaborate on

current topics in the IT field. Additionally, diverse activities carried out by this space are complemented with workshops focused on home automation and programming to disseminate knowledge among participants.

With the rise of the maker movement, we would like to present Futlab as one of the first and most complex makerspace in Prague. More importantly, Futlab is a grassroots initiative (bottom-up) with a focus on the Do It Yourself (DIY) approach, with open source and creative commons. The infrastructure is community based and environmentally friendly. Futlab is gaining traction as an educational center and a space for modern makers. This space is a learning platform where various workshops take place to share knowledge on DIY. Makerspace is about flexibility, and Futlab provides a variety of membership options to meet the needs of all users. The infrastructure includes a high-tech workshop with modern equipment for art, business, or just leisure activities.

The following paragraph is devoted to living labs which are open innovation ecosystems based in real environments, where communities nurture innovation to achieve sustainable impact. Most importantly, living labs generally engage diverse stakeholders in NeWSps to pursue open innovation to change the scenery. We present the case of Krakow Living lab, which was established in 2013 as a joint-venture between the Kraków Technology Park (KPT) and the Municipality of Kraków. Its being located in Krakow provides a buildup for collaboration between the living lab and hackers to share knowledge, experience, expertise, and contacts. Local critical mass has potential for testing products and services in the conditions in which they are used in real life environments. This platform develops concepts up to their implementation through testing and prototyping toward smart cities, with an emphasis on the Regional Innovation Strategy.

Lastly, as an example of a corporate lab, we present the company Creative Laboratory Ltd. It is a private company established in 1993 in Szeged, Hungary. This company has developed and manufactured *in vitro* diagnostics (IVD) for clinical laboratories (B2C) and subcontracting partners for pharma- and biotech companies and universities in the framework of different research projects. The company has also developed in-house technologies in the field of drug discovery (B2B); it is a member of the Hungarian Biotechnology Association and has cooperated with several organizations of local and regional importance, such as Biological Research Center—Szeged, Goodwill Pharma Ltd. or Szeged University.

5 Conclusions

The aim of this chapter was to present the spatial arrangement of NeWSps within V4 countries during the last 15 years and present some examples, as good practices, for each type of NeWSps from different V4 cities. Similarly, to western European and North American countries, there has recently been a significant boom in the establishment of NeWSps in central European countries. Our data showed that 712 different NeWSps were established between 2007 and 2021 within the 138 cities of

V4 countries. The most common type of newly created NeWSps is coworking space (approximately 85% of all NWS). On the other hand, the least common type is living lab. In our research, we identified the establishment of only two living labs. Our research showed that patterns are similar in countries and in cities. Both in countries and in cities, the more the inhabitants, the more the NeWSps established. Interesting examples of different types of NeWSps include: the coworking space BASE4WORK in Bratislava, FabLab Budapest, Hackerspace in Krakow, Makerspace Futlab in Prague, Living Lab in Krakow Technology Park, and the Creative Laboratory Ltd. as a corporate lab in the city of Szeged.

We are aware that our research has several limitations and that it would be appropriate to describe our findings in greater detail. For example, it would be good to examine the localization factors of individual NeWSps in the V4 countries. But these limits, as well as topics for more detailed elaboration, give us a good reason for continuing our research.

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The (re)location of Coworking Spaces in Ukraine During the Russian Invasion



Vika Zhurbas, Ilaria Mariotti, and Marko Orel

Abstract A significant part of all firms tends to remain in the same location throughout their lives. Firm birth, death, and relocation are part of firm demography. Firm location, birth, and death are driven by several pull and push factors which also include exogenous shocks such as a foreign invasion. This paper aims to present and discuss the location of coworking spaces in Ukraine during the first year of the Russian Invasion. Several coworking spaces closed down in the Kyiv region, and others have opened in the western part of the country. The motivations driving the choice of location of three new coworking spaces in western areas are presented through interviews with the coworking spaces managers, and the role played by the coworking spaces community discussed.

1 Introduction

Manufacturing and service firms tend to remain in the same location throughout their lives. Firm location, birth, and death are driven by several pull and push factors. These can be classified into three main categories: (i) traditional location factors; (ii) environmental, social, and institutional context; (iii) policy framework; (iv) information costs [10, 11]. Specifically, disruptions such as the COVID-19 pandemic and the Russian Invasion of Ukraine belong to the third category but also affect (both directly and indirectly) the other three ones, as explained in section 2.

This chapter focuses on the location determinants of service firms, specifically those in the IT and creative sectors, representing coworking spaces (CSs)' sector

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specialization. A coworking space is one of the typologies of new working spaces and collaborative spaces. Moriset [16] defined CSs as serendipity accelerators, born to accommodate knowledge workers who carry out their activities by renting a workstation for a variable period and taking advantage of the services offered (e.g., secretarial services, Wi-Fi connection, meeting rooms, kitchen, leisure spaces, training and coaching courses, babysitting) [19, 21]. The CSs users are: independent (and frequently precarious) knowledge-based, creative, and digital workers, mainly freelancers or self-employed professionals who share their workspaces.

The literature on the CSs location mainly focuses on urban areas and recently, attention has been given to peripheral and rural areas. Besides, some recent studies have made reference to the effects of the COVID-19 pandemic on CSs and their location [12], thus investigating whether and how CSs have flourished in peripheral and remote areas in this period [24]. No studies, at least to our knowledge, have been carried out on the location effects of the Russian Invasion of Ukraine on the CSs location.

This chapter aims to fill the gap in the literature by presenting and discussing the location and relocation of CSs in Ukraine in the first year of the Russian Invasion, which started in February 2022. The Invasion has led to a significant migration of IT workers to the western regions of Ukraine, which are relatively safe compared to other parts of the country and offer a more stable and secure environment for people to work and live. According to the United Nations,¹ as of September 2022, over 1.5 million people were internally displaced within Ukraine because of the conflict. Many of these individuals are from the IT sector, which has been hit particularly hard by the crisis. The cases of a few CSs that have opened in the western part of the country are presented within this context. The motivations driving the choice of the location are presented through interviews with the CSs' managers. Moreover, it is explored whether and how the CS community has helped and supported the users and the local community during the Invasion.

2 Location Factors Driven by Disruptions

According to the location theory, the location factors can be grouped into three categories: (i) traditional location factors; (ii) environmental, social, and institutional context; (iii) policy framework; (iv) information costs [10, 11]. (i) The traditional location factors concern agglomeration economies, infrastructure accessibility, market size and potential, labor costs and skills, and transportation costs [6, 9]. (ii) Firm location is affected by environmental, social, and institutional contexts. These factors can be tangible (e.g., bureaucratic efficiency) or intangible (e.g., quality of life). (iii) The policy framework category concerns several trade and competition policies, tax and environmental policies (among others, see [3]). Finally, regarding the information costs category, the literature focused on the role of geographical

¹ <https://data.unhcr.org/en/situations/ukraine>.

distance from the core cities/region, the higher amenities available, the presence of universities, airports, etc.

Disruptions like the COVID-19 pandemic and the Russian Invasion of Ukraine (i.e., the political situation) can influence (directly or indirectly) most location factors of the three categories mentioned above. For example, the lockdown measures put in place to cope with the COVID-19 pandemic caused the closing down of economic activities. Besides, the negative effect of the pandemic on CSs and the increase in remote working caused a reduction of available CSs premises or their activities to shift to online platforms. The Russian Invasion has provoked the migration of inhabitants from the bombed areas to “safer” areas, thus creating a new demand for goods and services (market size and potential). On the contrary, bombed areas lost their inhabitants, labor force, and activities, because the bombardments destroyed the principal infrastructures, thus making it impossible for firms to operate and a challenging for people to live.

Literature about disruptions primarily refers to the effects of the COVID-19 pandemic on CSs and their location. At least to our knowledge, only one study [4] was made on the impact of the pandemic and other exogenous shocks (e.g., political instability and anthropogenic disasters), and it concerns the city of Beirut, therefore, no evidence has been provided so far of these aspects in the Russian Invasion of Ukraine.

About the effects of the COVID-19 pandemic on new working spaces and CSs, and indirectly on their location, two recent books by Mariotti et al. [11] and Akhavan et al. [1] present several interesting cases. According to Gerosa and Manzini Ceinar [5], in phase I of the COVID-19 pandemic, the literature reported adverse effects on the CSs: CSs would decline in favor of multi-location strategies (e.g., work from home). According to Deskmag,² daily users on weekdays declined from 60% in January 2020 to 40% in October–November. After phase I, CSs and the other third and fourth spaces (e.g., hybrid spaces, collaborative spaces, etc.) began to represent both temporary or permanent alternatives to traditional offices and home offices by responding to different people’s habits [12]. The CSs invested in the transition from the predominant role of face-to-face contact to online or hybrid strategies to build internal and external community ties to maintain the “community” and therefore their socio-economic sustainability. The studies also underlined a new demand for CSs in peripheral and rural areas where knowledge workers can live and work remotely [22, 23].

Mariotti and Lo Russo [13] analysed the case of Italian coworking spaces facing the COVID-9 pandemic in 2020 and 2021. Among the other effects, the pandemic has underlined the potential role of CSs in enhancing work-life balance and promoting the socio-economic development of peripheral and rural areas. Besides, during the pandemic, Southern Italy attracted remote workers (known as “southworkers”), and promoted the so-called ‘community garrisons’, willing to host them and ‘retain’ young people.

² <http://deskmag.com/en/>.

Leducq and Demaziere [7] explored the effects of the Covid-19 pandemic on CSs in France, focusing on the Centre-Val de Loire Region, Paris Metropolitan Area and other French regions marked by a metropolis-periphery interface. According to the authors, the growth of CSs in these areas was related to: (i) the increase of self-employed workers and freelancers; (ii) the need of companies to attract and retain workers, thus increasingly offering them the possibility of working in ‘third places’, close to home and preventing daily commuting. Bálint et al. [2] found that in Hungary there was a noticeable shift in locations from city centers to the outskirts of cities, especially in suburban areas.

As concerns both the effects of the pandemic and other exogenous shocks, [4] explored the case of CSs in Lebanon, a country dealing with COVID-19 pandemic, political instability, and anthropogenic disasters. The empirical analysis showed that the financial crisis and the pandemic had pushed many businesses to downsize, leaving their original big offices and choosing to work in CSs, which are financially more convenient workspaces. Despite the political instability of Lebanon and Beirut, the coworking culture is expanding, and it is appreciated for its sustainability and resilience.

3 Coworking Spaces in Ukraine in 2012–2022

Ukraine’s digital economy and IT sector experienced rapid growth in the years before the Russian Invasion, leveraging highly skilled Ukrainians and investments from multinational companies [17]. IT clusters have been established in several Ukrainian cities to support this growth and foster innovation, they bring together companies, universities, and government agencies to create an ecosystem of innovation and collaboration. More than 22 Ukrainian regions have active IT clusters; the five leading clusters are in Kyiv, Kharkiv, Lviv, Dnipro, and Odesa.³

Kyiv, the capital of Ukraine, has emerged as the country’s leading IT hub, with over 1,000 IT companies and startups operating in the city. In 2016 the Kyiv IT Cluster was established to support the development of the city’s tech industry. Lviv is another central IT hub in Ukraine, with over 400 IT companies and startups. The Lviv IT Cluster was the first IT cluster established in Ukraine and has been instrumental in promoting the city as a hub for tech innovation. The cluster provides various services, including mentorship programs, coworking spaces, and access to investment funds. Kharkiv has over 250 IT companies and startups, and Dnipro over 100 IT companies and startups. These clusters are playing a crucial role in developing the Ukrainian tech industry, helping create jobs, attract investment, and foster innovation.

After the Russian Invasion, remote working and cloud servers, based within or outside the country, allowed many businesses to continue operations. Nevertheless, internet connectivity was very unstable in that period, thus negatively affecting the possibility for citizens and workers, both displaced and not, to access digital services.

³ <https://ucluster.org/en/school-of-startups/top-ukrainian-it-clusters/>.

Due to the ongoing conflict, many of these workers have been forced to leave their homes and seek refuge in other parts of the country. Several highly skilled knowledge workers, mainly specialised in the IT sector, have relocated to live and work remotely in European countries. For instance, the European coworking association “One-coworking” has promoted the initiative to host Ukrainians workers in several CSs belonging to its network, for at least 3 months and free [14].

CSs have become increasingly popular in Ukraine in recent years, with many freelancers, entrepreneurs, and remote workers seeking flexible and affordable workspaces. “Chasopys” was the first coworking space in Ukraine in 2012; since 2018 the number of CSs has been increasing, especially in Kyiv [25]. In the first years, the primary users of the CSs were freelancers, local IT communities, and representatives of the creative industry. Later, as the market grew, the number of agreements and the pool of users (corporate customers, new-generation startups, and the public sector) asking for flexible offices also increased. Orel et al. [18] stated that CSs mainly belonged to the Individual-Purposed Coworking Spaces category. This category primarily supports independent workers, local IT communities, and creative industry representatives. Individual-Purposed Coworking Spaces attract and retain talent within regions, thus positively impacting local communities [20]. Besides, the other category of CSs in Ukraine are Group-Purposed model—prevalent among corporate clients—, Creation-Purposed, and Startup-Purposed CSs.

During the COVID-19 pandemic, in 2020 and 2021, small CSs closed down, while larger and long-term businesses survived [25]. Besides, in that period CSs started hosting IT companies.

In 2021 in Ukraine there were about 100 CSs (Fig. 1). They were mainly located in the capital region of Kyiv (40%). During the COVID-19 pandemic, CSs played a key role in hosting remote workers, allowing IT professionals to continue their work while adhering to public health guidelines.

The situation changed dramatically in 2022, with the outbreak of the war in Ukraine. Despite the challenges and uncertainties of the conflict, some entrepreneurs remained determined to provide essential CSs to support the country’s tech and creative industries. At least ten coworking spaces opened in Ukrainian cities during the Invasion. In Lviv two new CSs were opened: Nat. Coworking and W-Workspace. The city of Uzhgorod also welcomed two new spaces: Coworking KamelotHUB and Nazva. In Ternopil, K15 opened, while Kyiv hosted two new spaces: NRG. space and #CHERDAK. Other new coworking spaces are PolyanyHub in Irpin and Poverh in Odesa.

The main driver for the opening of these CSs is the internal migration from eastern to western regions. Many creative and tech industry specialists moved to the West of the country, creating a high demand for coworking spaces in these regions. The demand for coworking spaces also skyrocketed after the November 2022 attacks on Ukraine’s energy infrastructure by the Russians. This resulted in days of total blackouts in several cities, which significantly increased the demand for flexible workspaces. CSs were a reliable option for many workers as their internet connections and electricity supply were more stable than in private homes. Besides, as described in chapter “Caring Practices in and Beyond Coworking Spaces” by Merkel et al. [15],



Fig. 1 Location of coworking spaces in Ukraine. *Source* Authors' elaboration on one-co. work data

the new CSs in western Ukraine are acting as caregiving spaces: they have become a crucial infrastructure not just for coworkers but also for the local community in providing mobile chargers, electricity generators, and serving as a shelter in case of bombing.

The western regions of Ukraine, including cities such as Lviv, Uzhgorod, and Ternopil, have become popular destinations for these displaced IT workers because they have a growing IT sector, high quality of life, and good infrastructure. Lviv has emerged as a key location for IT clusters, with several tech companies and startups choosing to set in the city in recent years. This has led to a growing demand for office spaces and coworking facilities and a need for more skilled workers to fill these positions in them.

Nevertheless, not all CSs survived the tumultuous events of 2022. About 50 shut down, either temporarily or permanently. Some of those located in occupied territories were destroyed. The closure of coworking spaces affected many freelancers and entrepreneurs who relied on these spaces for working and being part of a community. However, the ten new coworking spaces that opened during this period demonstrate the resilience and determination of the Ukrainian entrepreneurial spirit.

4 Narrative About Coworking Spaces Facing the Russian Invasion

The section presents the four new CSs that have opened during the Russian Invasion to meet the new demand of freelancers and entrepreneurs migrating to the West of Ukraine.

Futura Hub has been located in the city of Lviv since 2022. Lviv is the largest city in western Ukraine and the sixth largest in Ukraine (717,000 thousand inhabitants in 2022). Lviv hosts 9 CSs and the Lviv IT Cluster.⁴ Usually, CSs cooperate with different IT clusters in Ukraine. The building hosting Futura Hub is a hybrid space: it hosts some restaurants, an event space, hot desks, offices, and a terrace. Futura Hub also contains another space, managed by the same team, which has been opened during spring 2022. It is called nat. coworking, and it also hosts a bomb shelter.

The sector specialization of the CSs is the creative and IT industry. The primary pull factor driving the opening of these CSs is the new demand for new coworking space in Lviv. Indeed, thousands of Ukrainians moved to Lviv from temporarily occupied territories searching for a safe place in the West. The second pull factor is the sector specialisation of the city in the IT sector: Lviv hosts one of the most influential and big IT communities.

The Futura Hub CS manager, a native of Kyiv, explains what the main need of the CS users is today: *“The main change in the typical behavior of our new customer was the short duration of subscriptions. Before the war, residents often chose a workspace for at least one month. Today, many people do not clearly understand where they will be tomorrow, so the demand for weekly/bi-weekly subscriptions has increased significantly.”* Interviewer (1).

Coworking space K15 was opened after the Russian Invasion, on March 10, 2022. It is located in Ternopil, a city in western Ukraine with 225,000 inhabitants, and it is the only CS in the city. Ternopil hosts an IT Cluster⁵ with which K15 cooperates. The CS has been subsidised by Diia. Business, a governmental program for supporting SMEs. The sector specialisation is creative and IT industry. K15 is composed of an event space and offers services for the local environment. The CS also hosts a business center.

The pull factors driving the opening of K15 are: (i) the relocation of (thousands) Ukrainians that moved to Ternopil from temporarily occupied territories; (ii) the demand of companies to continue working in a true workspace and fulfil their obligations to partners on time.

The founder stated: *“We are sure that coworking residents from IT companies will strengthen the Ternopil IT cluster. There are also regular events for dentists who will generate their own community! There are ideas for involving the cycling community of Ternopil in improving the local infrastructure. In general, the cool networking*

⁴ <http://itcluster.lviv.ua/en/>.

⁵ <https://www.linkedin.com/company/ternopil-it-cluster/>.

that takes place in a coworking space will definitely contribute to the creation of new communities” (Interview 2).

The interview with the founder underlined interesting issues concerning the coworking space’s role in rebuilding the local and regional Ukrainian society after the war.

“Despite the war, difficulties with relocation, hiring specialists, and the demands of foreign partners, the IT industry continues to grow and pay taxes. Companies develop projects, gain clients, increase teams, open new locations in Ukraine. Several IT companies already work in our coworking space. This is still the only comfortable workspace in our city for companies of various sizes that do not want to worry think about office repairs. You can come in and start working at once” (Interview 2).

The CS is also hosting the Norwegian Refugee Council (NRC), which began its humanitarian activities in Ukraine in the fall of 2014 with the opening of a field office in Severodonetsk. The NRC’s activities are aimed at meeting the needs of internally displaced persons and the conflict-affected population.

The **Nazva Uzhgorod** CS was opened in April 2022 and is located in Uzhgorod, western Ukraine (approximately 115,000 inhabitants⁶). The founders of Nazva’s Uzhgorod CS are natives of Kyiv, Ukraine’s capital city, and bring a wealth of experience in the coworking industry. This is the fifth coworking space they have opened in the country, the other four are located in Kyiv.

One of the key areas of specialization for Nazva is the IT industry. The focus on this sector aims to fulfil the demand generated by the internal migration of around 30,000 IT specialists to the region, who require high-quality workspaces and networking opportunities.

The founders stated: *“Our coworking is a convenient workplace. It is quite small, more than 20 places. It is now difficult to predict the number of people coming and going, and determining the average workload of people in our space is tough. In Uzhgorod, the local population does not quite understand why coworking is needed; they have long-established places to work at home or in guest offices”* (Interview 3).

The coworking space offers a range of services and amenities to support the needs of its members, including high-speed internet, meeting rooms, printing facilities, and a kitchen. It also features a comfortable and modern design, with plenty of natural light and an open-plan layout. Nazva is more than just a workplace: *“It is a community of like-minded individuals passionate about innovation, collaboration, and entrepreneurship”* (Interview 3). The space provides wide opportunities for networking and knowledge-sharing, as well as regular events and workshops to support the professional development of its members.

Since its opening, Nazva has quickly become a popular destination for freelancers, startups, and small businesses in the region. Its focus on the IT industry, its modern facilities, and its welcoming atmosphere make it an ideal choice for anyone looking for a productive and inspiring workspace in Uzhgorod.

⁶ Source: State Statistics Service of Ukraine (<https://ukrstat.gov.ua>).

5 Conclusions and Further Research

Both the COVID-19 pandemic and the Russian Invasion of Ukraine have impacted the health of workers and the ways of working of organizations, thus increasing the pace of digitization, home working and the use of third spaces as coworking spaces and hybrid spaces [8].

The empirical evidence presented in this paper extends the literature about the effects of disruptions such as the Russian Invasion on the location and relocation of CSs. The migration of IT workers to the western regions of Ukraine, already specialised in the IT sector and hosting IT clusters, has augmented the demand for workplaces (e.g., coworking and hybrid spaces). Besides, as underlined by the interviewees, these spaces are not just spaces for working but are also spaces for meeting new people, networking and collaborating; they foster the creation of a community and support and act as caregiving spaces.

The migration of IT workers to the western regions is significantly impacting the local economies, with many businesses benefiting from the new talents and ideas brought by the migration. This has led to a growing sense of innovation and entrepreneurship in the region, with several new startups and initiatives being launched in recent years, also hosted in coworking and hybrid spaces.

Despite the challenges posed by the conflict, many IT workers remain committed to building a brighter future for themselves and their communities. Through their hard work and dedication, they are helping to create a more vibrant and prosperous Ukraine and are contributing to the development of a thriving IT industry in the western regions of the country.⁷

The Ukrainian government has invested and is investing in the IT sector and digitalisation [17]. CSs play a role in the government strategy since they are workspaces hosting IT workers and collaborating with the IT clusters.

Since it is difficult to forecast when the war will end, further research should focus on measuring the effects of these new CSs in western areas, including less urbanised ones. These new CSs host IT workers and collaborate with the local IT clusters, and might therefore enhance the development potential of local areas. Nevertheless, policymakers and stakeholders should manage this phenomenon properly to ensure equilibrium between the newcomers and the inhabitants.

Another issue Ukraine is facing and will be facing when the war ends is that of facilitating the return of the highly skilled human capital from the western regions to the abandoned eastern areas, which will be reconstructed, and from abroad. The newly introduced “Diia city tax” regime with significantly reduced payroll taxes and social contributions should facilitate the return of highly skilled workers from abroad. It may be considered whether any additional measures could further facilitate the stimulus for the “returning brains”.

⁷ Source: interviews with coworking managers and users.

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Concluding Remarks on the Evolution of New Working Spaces



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1 Trends and Evolution of Types of NeWSps

NeWSps reflect the changing nature of work, the need for flexibility and collaboration, the desire for unique and tailored work environments and new lifestyles. They have emerged as a response to technological advances, shifts in workers' and firms' preferences and needs, policy changes, and the specific contexts of different locations. The COVID-19 pandemic was a catalyst as it accelerated the adoption of hybrid work modes that combine various elements and characteristics. Furthermore, an increasing number of types and models are emerging, fueling greater heterogeneity and hybridity.

NeWSps offer a wide range of benefits and opportunities that go beyond traditional offices and work from home. They provide professionals with flexible work options, allowing them to choose their working hours and locations. By bringing together individuals from diverse backgrounds and industries, these spaces create fertile ground for interdisciplinary collaborations, knowledge sharing, and skill development [15].

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The innovative approach to workspace design and culture developed by most NeWSps emphasize the importance of providing areas and activities for social gatherings to foster community building and work-life balance. Furthermore, accessibility and flexibility are essential to accommodate users' preferences and personal commitments.

The Covid-19 pandemic has accelerated the “remote working” trend, which was already in place and is an umbrella term covering the following working arrangements: teleworking, agile working, smart working, and working from home [13]. In addition, a new working arrangement called “hybrid work” has gained ground. It is performed partly remotely and partly in the official workplace. According to Eurofound [9], the percentage of employees engaged in hybrid working increased from 14% in summer 2020 to 18% in summer 2022, and most EU workers stated that in the long run they would prefer working from home several times a week.

Within this context, the demand for third and fourth places to work, which are becoming more and more hybrid to satisfy the users' demand, has increased. Besides, peripheral, rural, and remote areas and intermediary cities are becoming attractive places to live and work for remote workers and digital nomads.

Eurofound [10] states that the debate around hybrid work has been primarily concerned with the regulation/legislation around hybrid working. Specifically, they explored the optimal number of teleworking days per week and the types of company-wide policies required to ensure that the benefits of teleworking and office working are achieved. The studies show that the existing regulations and legislation in European countries—including those on telework—are inadequate.

An interesting and relevant issue policymakers and social partners should focus on, to reach an agreement, concerns the conditions under which hybrid working should ideally be performed, including health and safety aspects, work-life balance, working time, work equipment provision, reimbursement of costs (equipment, energy), commuting, and the leadership and management skills required to put all this into practice [10]. Within this context, NeWSps can play a key role, e.g., by addressing the interaction of the physical, temporal, social, and virtual elements of hybrid working.

In addition to the COVID-19 pandemic, another disruption, the Russian invasion of Ukraine, has impacted NeWSps, promoting their relocation to western regions and offering remote workers spaces not only to work but also to meet new people, network, and collaborate, fostering community building and support, and acting as caregiving spaces (chapter [The \(re\)location of Coworking Spaces in Ukraine During the Russian Invasion](#) by Zhurbas et al.). As Merkel et al. (chapter [Caring Practices in and Beyond Coworking Spaces](#) by Merkel et al.) underlined, coworking hosts and community managers provide care to “maintain, continue, and repair” community and the hospitable atmosphere in coworking spaces across Europe.

As the world of work evolves and adapts following new technologies, socioeconomic changes, and other impactful events, it is essential to provide critical and long-term studies to evaluate whether NeWSps can adapt and thrive in the face of changing economic, social, and technological conditions. Furthermore, different cities and regions may face unique challenges and different effects regarding NeWSps, and in this sense, said evaluation may help to adapt strategies and policies in line with local contexts, especially beyond large metropolises.

2 The Role of NeWSps in Rural and Remote Areas

In the face of depopulation challenges in rural areas, NeWSps have emerged as a dynamic and transformative force. These shared work environments play a vital role in reinvigorating local economies and providing an enticing solution for individuals seeking an alternative to urban living. By offering modern infrastructure, high-speed internet access, and a collaborative atmosphere, NeWSps attract and retain talent within rural communities [6]. Professionals, entrepreneurs, and freelancers can now pursue their careers locally, eliminating the need to migrate to urban centers and contribute to their own regions' economic development.

Beyond their economic impact, NeWSps foster a culture of innovation and collaboration. The collective intelligence and creative synergy that emerge from coworking environments lead to cultivating local entrepreneurship, which is instrumental in generating new business opportunities and fostering economic growth [17]. By facilitating connections, mentoring, and support networks, coworking spaces empower rural residents to transform their ideas into successful ventures, further strengthening the local economy.

Moreover, NeWSps serve as community hubs that foster social connections and a sense of belonging among rural residents. In areas grappling with depopulation, these spaces become vital gathering spots, providing a platform for workshops, events, and networking opportunities [12]. By nurturing social cohesion, these spaces can improve the quality of life and encourage individuals to invest in their local communities. The resulting strong community ties, combined with professional opportunities, help reverse the depopulation trend and create sustainable rural areas where residents can thrive personally and professionally.

NeWSps have attracted the attention of policymakers worldwide, albeit with different intensities. Several policies have been implemented at different levels (from the European to the municipal level; see [3]). The main argument for supporting this type of space, namely CSs and fab labs, is that they can contribute to local/regional development, promoting employment and business growth, as well as social innovation (see, for example, [2, 15]).

Specific policies focus on subsidizing workers to remain in their communities of origin, thus preventing skilled migrations, brain drain, and supporting the NEET. This strategy aims to positively impact territorial cohesion to reduce economic, social, and territorial gaps and differences. Other policies specifically focus on workers wellbeing and work-life balance fostering the workers' "right to disconnect" [9], and to some extent even the right to "digital wellbeing". In 2021 the EU called for the right to disconnect from work outside working hours and in 2022, the European Parliament adopted a resolution on a new EU strategic framework on health and safety in the world of work (https://www.europarl.europa.eu/doceo/document/A-9-2022-0184_EN.html). It is up to member states and institutions to implement concrete prevention and protection actions. Within this context, it is interesting to consider to what extent new working spaces might promote wellbeing, work-life balance [1], and digital wellbeing.

Finally, at the urban level, some initiatives have promoted an approach based on space–time proximity principles, including workspaces. The Municipality of Milan, for instance, allowed its workers to work in other places such as public libraries, CSs, etc., close to their homes [16].

Nevertheless, the effects of these spaces on the socio-economic development of peripheral and remote areas and the working conditions of rural entrepreneurs and freelancers are still unclear [6]. The impact of remote workers and digital nomads relocating to peripheral and rural areas can be positive only if they contribute to developing community wellbeing within the local ecosystem [6, 8], thus embedding into the local community.

3 Further Research of NeWSps

NeWSps are a highly dynamic phenomenon in terms of number, types, and geographies. In light of these changing trends, some old and new conceptual and methodological challenges still pave an avenue for further spatial research of NeWSps. With regard to conceptual issues, first, current studies on NeWSps' location factors lack methodological integration with existing approaches (such as behavioral, evolutionary, institutional, etc.) within regional and urban economics and economic geography (chapter [Theoretical Framework of the Location of Coworking Spaces](#) by Mariotti and Micek). Most studies delivering statistical analyses of coworking spaces unconsciously or implicitly follow a neoclassical approach. Second, dialogue is weak with many similar constructs such as creative spaces [5, 7, 11, 14] or creative hubs (for some exceptions, see [4]). The links of NeWSps literature with creation class literature are still relatively weak. Moreover, there is a limited understanding of vibrant and trendy theoretical concepts and research strands (e.g., urban or regional resilience, new path creation) within NeWSps' studies. Third, there is a need to disentangle coworking spaces as heterogeneous objects. In spatial studies of NeWSps, the notion of CS is too often treated homogeneously as a black box (chapter [A Taxonomy of New Working Spaces](#) by Micek et al.), CSs' users are unknown or at least unspecified. Moreover, the distinction between hybrid and non-hybrid CSs is rarely applied in spatial analyses.

When it comes to methodology-related challenges, we lack qualitative research on CSs' location factors (chapter [Theoretical Framework of the Location of Coworking Spaces](#) by Mariotti and Micek). First, as mentioned in the Introduction, many location factors are qualitative in their nature, e.g., the role of the place where CS' founders live in the selection of a specific location. While studying location factors, it is sometimes difficult to quantify growth mechanisms and the use of proxies is not suitable. The soundest procedure to identify determinants behind NeWSps location is to apply a mixed-method approach. Second, the challenge to increase data reliability may be overcome by using data triangulation. However, there is still scarcity of comparable and reliable data for cross-country analysis (for exceptions see chapter [The Localization of Different Types of New Working Spaces in Central Europe](#) by Rafaj et al.).

Third, increasing the use of in-depth longitudinal analysis of the growth of NeWSps would help us to understand their changing role in local development. Hence, we hope for further studies to be carried out on the evolution of NeWSps' spatial patterns.

Another interesting issue to explore is the role NeWSps can play in fostering users' personal and digital wellbeing, as well as socio-economic development and innovation, especially in remote and rural areas. The European Commission's long-term vision for the EU's rural areas identifies several areas of action toward stronger, more resilient, and prosperous rural areas and communities by 2040, also referring to the role that coworking and hybrid spaces can play.

Finally, research should thoroughly focus on the contribution of NeWSps to the life of vulnerable segments of the population, such as refugees, whose living and working situations are ever more precarious, and frail and disabled people.

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