Spatial Perspectives on Coworking Spaces and Related Practices in Beijing

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Coworking space is a recent manifestation of the emerging sharing economy. This is largely due to two core driving forces: a new working style in the creative and knowledge economies, and the sharing economy, which promotes resource usage efficiency. This paper develops an analytical framework for the spatial perspectives on coworking spaces according to the core driving forces at both the urban and architectural levels, followed by empirical studies on practices related to coworking space in Beijing. The results indicate that at the city scale, coworking spaces tend to aggregate in clusters of large-scale creative and knowledge enterprises in mixed-use and high-density areas, and underutilized spaces become the key pillar. In the architectural dimension, coworking spaces tend to coexist with conventional office spaces or coliving apartments. Empirical studies in Beijing also show that coworking spaces have promoted the sustainable development of the city by renewing existing low-profit urban spaces and utilizing architectural spaces more efficiently. However, the unstable lease market of small-scale businesses, as well as marginal financial models, which profit from rental differences, challenge the survival of coworking spaces. In pursuit of capital, coworking spaces have tended to overexpand.

Shared activities and shared urban resources, such as the sharing of knowledge, experiences, and public spaces (streets, squares, etc.), are fundamental attributes of a city. As a new urban paradigm, the concept of sharing cities has been attracting increasing attention globally with the rise of Uber, Airbnb, WeWork and other sharing economy practices. Unlike conventional modes of urban resource sharing, the new modes release once-privatized, underutilized resources for sharing (Zheng, 2016). This has also been promoted by the increase in urban population density and the development of Internet technology (Cohen and Munoz, 2016).

Due to the growth of the sharing economy, coworking spaces have expanded rapidly around the world since 2005, when the first coworking space was created in San Francisco (Moriset, 2014). Lange (2011) defined coworking spaces as the bottom-up spaces occupied by workers who strive for independence, collaborative networks, and as places that share a set of common values in a 'collective-driven, networked approach of the open source idea translated into physical space'. Gandini (2015) interpreted coworking spaces as shared workplaces used by different sorts of intellectual professionals, mostly freelancers, working in various degrees of specialization in the vast domain of the knowledge economy. Studies on coworking spaces have mainly focused on the following aspects:

- First, the increase in demand for flexible workspace accompanied by the rise of creative and knowledge economies are regarded as key drivers of the growth of coworking spaces.

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The large number of creative enterprises and freelance professionals, many of which are small in size, has significantly raised the demand for flexible office spaces with flexible lease terms (Moriset, 2014; Dolfsma and Soete, 2006; Gandini, 2015; Sargent *et al*., 2018).

- Second, the discussions on coworking space are usually embedded in those of the sharing economy and associated with business studies. The sharing economy primarily relies on online platforms to gain access to properties without a change in the ownership through either monetary or non-monetary transactions such as sharing, swapping, trading, and renting (Botsman and Rogers, 2010). The sharing economy capitalizes on the market to foster a more collaborative society (Heinrichs, 2013). By promoting the efficient use of resources, the sharing economy can provide economic benefits and contribute to reduction in consumption (Botsman and Rogers, 2010), both of which are regarded as critical factors for sustainable development (Gandini, 2015).

- Third, spatial analysis of coworking spaces in earlier studies focused mainly on layout and interior design. Flexible workspace arrangements with shared public resources are generally regarded as the defining features of coworking spaces. Various types of workspaces are provided, from single work desks for freelancers to semi-isolated or isolated cubicles for startups (Davies and Tollervey, 2013; Tang, 2017; Zhang *et al*., 2018; Tang and Zhang, 2018).

Although previous studies have outlined the basic features of coworking space, research on the spatial dimensions of coworking spaces is still in its infancy, especially from an urban perspective. What are the spatial approaches to the key drivers of coworking spaces? Do those approaches promote urban sustainable development? By drawing on previous studies of the key drivers of coworking spaces, this paper proposes an analytical framework for the spatial features from both urban and architectural perspectives.

Analytical Framework: Key Drivers and Associated Spatial Perspectives

Spatial Perspectives 1: Coworking Space as a New Working Style

Workspaces have been presented according to various models depending on working style. In the 1970s, the concept of a workspace was put forward by the Quickborner Team for Planning and Organization, a group of consultants and designers who specialized in office organization. Four categories of workspace were proposed – design, clerical, corporate headquarters and research – along with the corresponding spatial requirements of each (Pile, 1978). Under the worldwide conditions of post-industrialization, new work styles in cities, especially in creative cities with advanced economies, have emerged as a result of the significant use of Information and Communications Technology (ICT) as well as the rapid growth of Cultural & Creative Industries (CCI) (Lindtner and Li, 2012; Moriset, 2014). These new work styles then resulted in the rise of coworking spaces, a new workspace typology epitomized as 'third places', a halfway point between the conventional, well-delineated office and a completely individual workplace for a freelancer working at home (Moriset, 2014).

In contrast to traditional work styles, urban professional work in creative and knowledge economies is characterized by short-term projects, which are mainly completed by freelance professionals (Cappelli and Keller, 2013; Osnowitz, 2010). This encourages people to work in a 'nomadic and precarious' environment (Gandini, 2015). Unlike working at home, coworking spaces could be regarded as a new take on *cafés littéraires*, which flourished in the early twentieth century (Moriset, 2014), that take advantage of easy access to public resources, including meeting places for face-to-face communication, exchange of information and knowledge, etc. The study by Capdevila (2013) proposed a theory of coworking spaces from a network perspective, regarding them as the 'micro-clusters' that

enable knowledge transfer among members.

At the urban level, due to the face-to-face communication they enable and the public resources they make accessible, coworking spaces continue to offer the spatial characteristics of traditional offices. They are usually located in central urban areas with good transportation accessibility (Schultz and Simmons, 1959; Armstrong, 1972). Well-developed public facility service systems, such as business services, amenity environments, and mixed land use, attract creative intellectuals (Florida, 2002) and appeal to coworking spaces in the same fashion. Meanwhile, because of the small size of enterprises and freelancers, the SOHO (Small Office/Home Office) model makes it possible for coworking spaces to locate in those areas characterized by creative intelligence; hence, coworking spaces coexist with living spaces.

At the architectural level, the way coworking spaces are designed to cater for creative and knowledge-based working styles depends on the arrangement of the interior space. The boundary between coworking spaces and conventional office spaces is found in the different lease space scales and lease terms. The subdivision of office spaces for small-scale businesses is not new in conventional office leases, nor is the use of flexible lease terms to meet the changing market. The critical distinction between conventional office spaces and coworking spaces is the minimal lease unit. Generally, a single room is the minimum space unit for rent in conventional offices, whereas in coworking workspaces, it is an individual work desk. Yearly or monthly lease terms are common in conventional offices, while in coworking spaces, these terms are usually monthly, daily or even hourly. Apart from the differences in minimum lease units and lease terms, the public spaces used for public resources and information access, such as open lecture halls, sharing meeting rooms, etc, are other elements that differentiate coworking spaces from conventional office spaces.

Spatial Perspectives 2: Coworking Spaces as a Sharing Economy Practice

The reconfiguration of global industrial systems and the implementation of ICT have reduced the demand for some urban spaces, such as manufacturing plants and factories, shopping malls and conventional offices. Many of these spaces are now being reused based on the sharing economy mode, which is facilitated by online platforms. Coworking spaces make a profit mainly by operating office spaces, as opposed to only providing an online service, such as Uber and Airbnb. However, compared to the stakeholders of conventional offices, the operator of a coworking space plays a new role between the owner and the tenant. The spaces are rented from the owner by the operator and then subleased to the tenant after renovation. This business model can now be understood as the result of the extensive global penetration of coworking spaces coinciding with the onset of the global economic crisis (Gandini, 2015). Subleasing offices could reduce the company's operating costs during the recession, while remodelled workspaces with flexible leases could benefit freelancers and startups who are financially vulnerable. The rental difference has become the main means by which coworking spaces earn a profit. Thus, the way coworking spaces earn rental differences by promoting space usage efficiency can be considered from the perspective of cost reduction and profit promotion.

At the urban level, in addition to the closer proximity to the creative and knowledge industries, there is one more element that facilitates coworking spaces. That is the low-profit land and/or spaces that often have great potential for conversion into coworking spaces, which in turn contribute to revitalizing otherwise declining urban spaces.

At the architectural level, the improvement in the efficiency of space use is at the core of project programming. Considering the financial vulnerability of freelancers and startups, increasing workspace capacity is a more

feasible option than raising rents. The sharing of those spaces used with low frequency by each leaseholder, such as meeting rooms and lecture halls, contributes to increasing workspace capacity, as does compressing workspace. Thus, the need to earn a profit on the operator's side and the demand for spatial quality on the tenant's side (creative professionals require comfort and aesthetics) have to be holistically integrated for coworking spaces to work. At this point, it is interesting to compare the workspace capacity of coworking spaces to conventional office spaces.

In short, the emergence of coworking spaces is driven by the demands for new working styles in today's new economies and for profit-making through efficient use of space. This paper proposes an analytical framework of coworking space to investigate the spatial characteristics of the key drivers (figure 1).

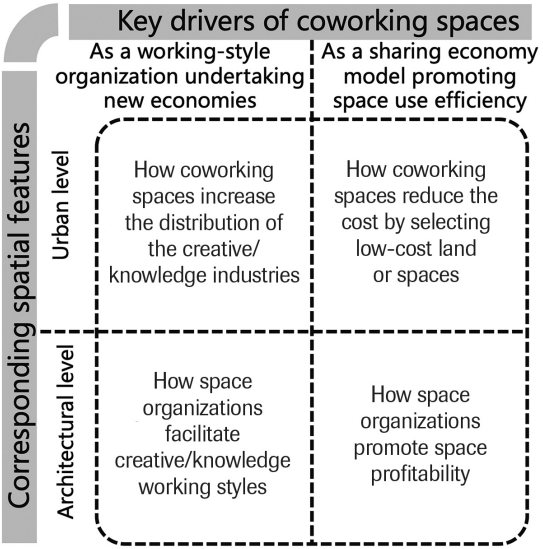


Figure 1. Analytical framework of coworking spaces. (*Source:* Authors)

Method for Studying Coworking Spaces in Beijing

The Context

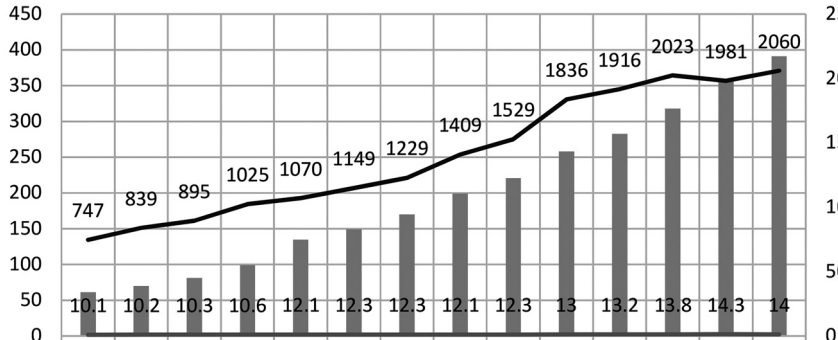
Coworking spaces in Beijing are closely associated with the development of creative industries. In the twenty-first century, industrial and economic development in Beijing is experiencing a major transformation. The IT industry, represented by the high-tech enterprises in Zhongguancun Parks and the rapidly growing cultural and creative industries, has gradually become an important pillar of industry in the city, leading to a significant increase in professionals in both fields (figure 2). A large number of these enterprises are small- and medium-scale. Providing office space for the rapid growth of such enterprises has become one of the missions of urban development in Beijing.

For instance, in 2013, confronted with the decline in the traditional retail book business in Haidian Book City, the district administration remodelled the district as Zhongguancun Startup Street for the innovative and service industries. In April 2014, Krypton Space started in Zhongguancun Startup Street and has become a part of the first batch of 'innovative incubators' identified by the Zhongguancun Administration Committee and launching coworking spaces in Beijing. In April 2015, the former vice president of Vanke Group founded UCommune in Beijing, indicating the entry of real estate companies into the business of coworking spaces. By the end of 2018, there were more than 300 coworking spaces in Beijing. According to incomplete statistics, the total area of coworking space now exceeds a million square metres, and this number is growing.

Acquiring Data

Based on information from the biggest rental website for coworking spaces in Beijing (http://cowork.haozu.com/) and official websites of other coworking spaces, 342 coworking spaces currently in operation have been studied. These projects cover a broad area of Beijing, and 96 per cent of them are concentrated in the central city of Beijing.

The data acquired on 328 coworking spaces



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
value added (billion RMB)	61.36	70.04	81.2	99.26	134.64	148.99	169.77	198.99	220.52	257.81	282.63	317.93	357.05	390.88
practitioner (thousand people)	747	839	895	1025	1070	1149	1229	1409	1529	1836	1916	2023	1981	2060
percentage of GDP (%)	10.1	10.2	10.3	10.6	12.1	12.3	12.3	12.1	12.3	13	13.2	13.8	14.3	14

Figure 2. Development of cultural and creative industries in Beijing, 2004–2017. (*Source*: *Beijing Statistical Yearbook*)

located in the central city, including the business address, project size, construction type, rent, and number of workspaces, are mapped on the GIS platform (figure 3). To understand how coworking spaces support the creative and knowledge industries in the economic context, the data of creative and knowledge industries in the central city, as well as office rental data, are collected. The Long Xin enterprise registration database, an official database of enterprises, is adopted to collect information on the creative and knowledge industries. According to the industrial classification standard in Beijing,[1] in 2018, registered enterprises in high-tech industries (HTIs) (n = 277,427) and culture and creative industries (CCIs) (n = 90,721) are chosen for analysis (figure 4). Meanwhile, the Beijing Office Leasing website has been used for the lease data, where 1,070 conventional offices for rent are selected (https://www.haozu.com/bj) (figure 5).

The mapping of exclusive company registration data in GIS shows the spatial distribution of creative and knowledge industries by number. By overlapping these data with the online public data on office rentals, the spatial distribution of the creative and knowledge industries based on quality can be obtained. This is based upon the assumption that higher quality enterprises are willing to pay higher rents for better locations. However, some large creative and knowledge enterprises, instead of renting offices, buy buildings, such as office buildings in Zhongguancun Shangdi Park and Wangjing Electronic City. The rental information for these offices is not available on the office lease website. Thus, it should be noted here that their information is missing from this analysis.

Case Selection

At the architectural level, this paper has selected four typical examples of renewal projects and two typical examples of new constructions, covering the typical categories and locations of coworking spaces in Beijing (table 1, figure 3). Renewal projects refer to existing buildings that have been adapted to new uses, while new construction refers to new buildings built from scratch, in which coworking space occupies a certain percentage. The interior space allocations of these cases have been compared, as has the way in which they contribute to the whole programme for an entire building or a factory plant complex (see figure 8).

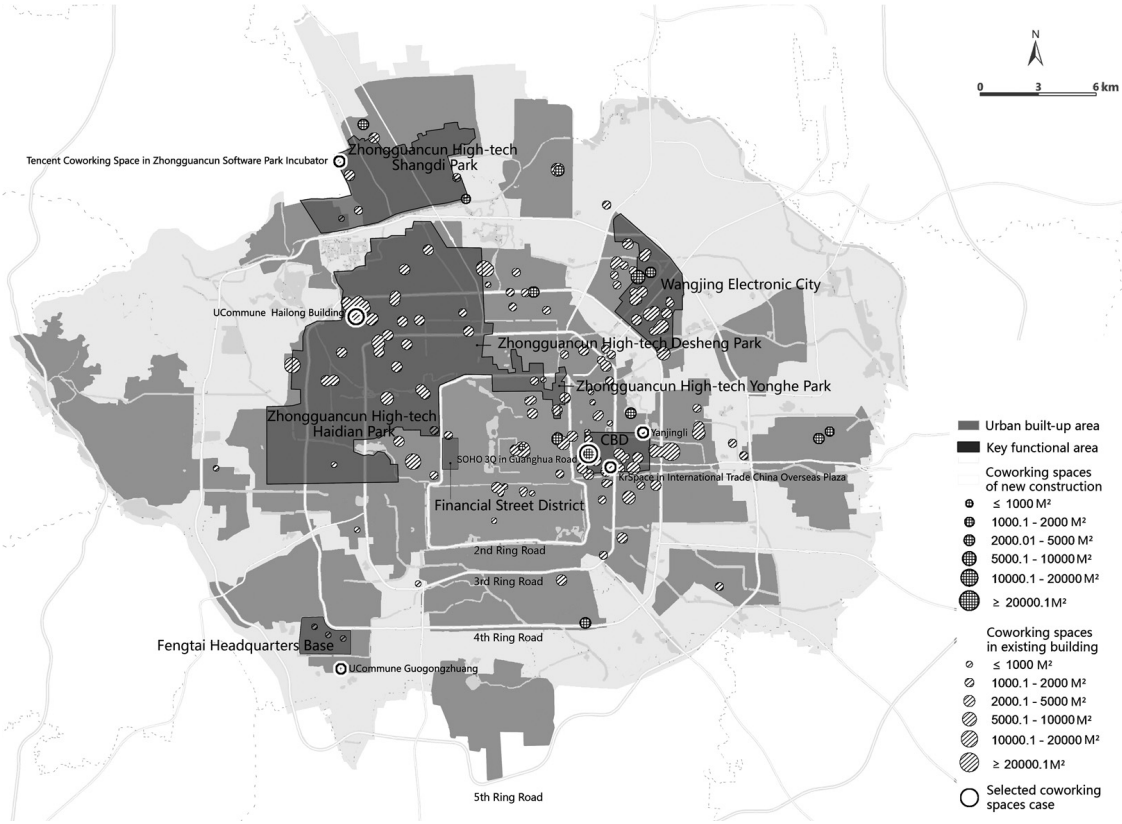


Figure 3. Distribution, size of project, status of new construction/renewal of coworking spaces and six selected cases in central districts of Beijing (n = 328). (*Source*: Official website of coworking spaces and leasing websites of coworking spaces)

Figure 4. Distribution of cultural and relevant enterprises (left, n = 90,721) and high-tech enterprises (right, n = 277,427) in central districts of Beijing in 2018. (*Source*: Long Xin enterprise data platform)

Figure 5. Spatial distribution and rental status of conventional offices in Beijing central city (n = 1070). (*Source*: https://www.haozu.com/bj/house-list/)

Table 1. Categories of selected coworking space cases. (*Source*: Authors)

Selected Cases	*New Construction or Renewal*	*Original Architectural Function*	*Location*
SOHO 3Q in Guanghua Road (SOHO 3Q)	New construction	Commercial and office	Central CBD
UCommune Guogongzhuang	New construction	Commercial and office	Outskirts of central city
Tencent Coworking Space in Zhongguancun Software Park Incubator (Tencent Coworking Space)	Renewal	scientific research office	Well-developed High Tech Park on outskirts of central city
UCommune Hailong Building	Renewal	Commercial and business	Well-developed High Tech Park in urban core area
KrSpace in International Trade China Overseas Plaza (KrSpace)	Renewal	Commercial and business	Central CBD
Yanjingli	Renewal	Industrial	Fringe area of CBD

Spatial Features of Coworking Spaces in Beijing

The Urban Level

Coworking spaces in the central city of Beijing are mainly aggregated in the northern part of the city. These areas with well-developed service facilities appeal to the creative and knowledge industries as well as other industries. Based on general spatial features, the detailed characteristics of coworking spaces can be studied in accordance with new economies and the sharing economy model.

First, the areas with higher aggregation of HTI and CCI are potentially more appealing to coworking spaces due to the large numbers of small businesses as the major support factor. In addition, the coworking spaces tend to aggregate to HTI and CCI cluster areas with large-scale enterprises. The more influential and larger the scale of these HTI and CCI companies or institutes, the more likely the area will receive higher quality startups and freelancers.

For instance, the central area of Zhongguancun Haidian Park, located in west-north 4th Ring Road, is in close proximity to the top two Chinese universities, Tsinghua University and Peking University. A variety of large-scale creative companies, such as Microsoft, congregate in this area. The CBD is another area with large-scale culture, sports and entertainment enterprises, which contribute significantly to the development of coworking spaces. China Central Television, Beijing Television, People's Daily, etc. and a large number of small- and medium-sized enterprises or startup companies play a significant role in this area's appeal. Apart from these two long-standing poles of creative and knowledge industry clusters, Wangjing Electronic City has developed as a new high-tech zone in recent years. Since the Chinese e-commerce giant Alibaba settled in, a dozen world-famous companies, such as Motorola, Ericsson, and Uber have also selected this area for their headquarters. These large Information Technology and Internet service companies have promoted the concentration of startups and freelancers for their respective industrial chains.

Second, mixed-use and high-density areas accommodating large-scale creative and knowledge enterprises cluster significantly and attract coworking spaces. This is evident especially in areas such as the CBD, the core area of Zhongguancun high-tech Haidian Park, and Wangjing Electronic City. All of these areas are mixed-use and high-density with high-quality standards and refined supporting facilities. These facilities include convenient transportation, abundant public service and leisure facilities and high-quality education facilities. Compared to them, Zhongguancun High-Tech Shangdi Park, a distinguished area accommodating large-scale creative and knowledge enterprises, is a typical high-tech park with low density. The lack of good public service facilities and urban vitality prevent the aggregation of coworking spaces.

The correlation analysis of coworking spaces, HTI and CCI distribution and office rental distribution has proved that the coworking spaces tend to aggregate to HTI and CCI clustered areas with upper-middle rents, not those areas with higher rents such as the Financial Street District, nor those areas with lower rents such as Zhongguancun Shangdi Park and Fengtai Headquarters Base. The upper-middle rents are supported by a well-developed urban environment for creative and knowledge industries, as well as urban vitality from mixed-use and high-density land use.

In the case of higher rents, the Financial Street District has held back the potential of most of the creative and knowledge industries due to expensive leases, removing the fundamental driving force of coworking spaces. Regarding the lower-rent areas, taking Zhongguancun Shangdi Park and Fengtai Headquarters Base as examples, the lower-rent areas have either a lack of influential companies, which weakens the magnetic force for relevant startups and freelancers, or insufficient service facilities and urban vitality, which consequently hinders the concentration of coworking spaces.

Third, the spatial infrastructure with relatively lower rents becomes the key generator of profit for coworking spaces. According to the data collected, 298 of the 342 coworking spaces (approximately 87 per cent) in central Beijing are created by remodelling existing commercial/office complex buildings, mainly conventional offices with low rental costs and shopping malls, which have seen a dramatic decline in demand in recent years. Along with those underutilized urban spaces, spaces located on land without land transaction fees also provide potential for coworking spaces. These spaces include urban villages, underutilized industrial plants, and some offices in state-owned institutes and companies. In the rapid process of urbanization in Beijing, some villages surrounded by built-up areas have been left behind. Although their spatial features, including building density and building appearance, look like those of adjacent urban areas, these urban villages still have lower lease and sale prices for their building spaces. Similarly, most industrial plants and state-owned institutes and companies in the city were built on the land allocated by the government without land transaction fees. This low-cost land and building space make it possible for coworking spaces to profit by subleasing or regenerating these existing spaces.

The Architectural Level

According to the data collected of the coworking projects in operation, 318 of the 342 coworking spaces (accounting for 93 per cent) are renting existing building spaces. In addition to the 298 projects (accounting for 87 per cent) created by remodelling the existing commercial office buildings, there is a small number of factory buildings that have been renewed and are being used (8, accounting for 2 per cent), as well as Hutong-courtyard areas (12, accounting for 4 per cent). As part of a new project being built from the ground up, 24 new projects (accounting for 7 per cent) have been designed to replace the original functions in the new building, such as shopping malls and partial traditional offices (figure 6). To date, no newly constructed building has been fully used as a co-

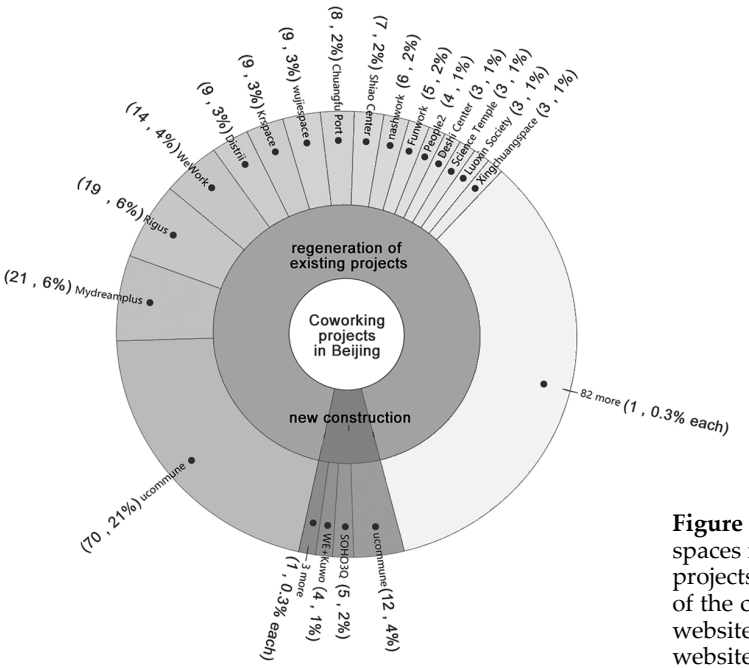


Figure 6. Composition of 342 coworking spaces in Beijing in 2018 (number of projects, percentage of all projects, brand of the coworking project). (*Source*: Official website of coworking spaces and leasing website of coworking spaces)

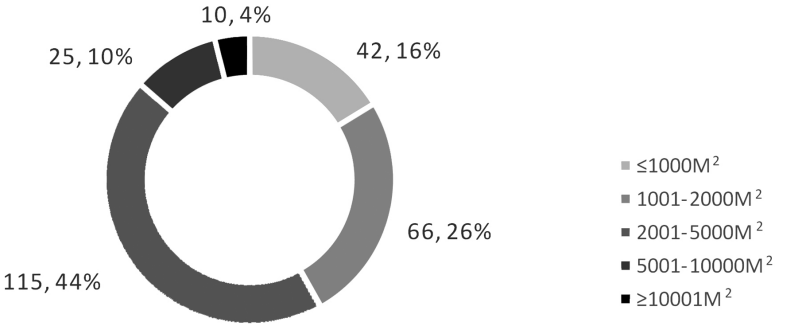


Figure 7. Floor area of 258 coworking projects in Beijing (number of projects, percentage of all projects). (*Source*: Authors)

working space in Beijing. Most of the coworking spaces have a floor area between 1,000 and 5,000 square metres (figure 7). The office spaces are remodelled to ensure their survival by meeting the office demands of creative and knowledge enterprises, as well as to ensure higher profit through reasonable space allocation.

First, some spatial strategies are adopted to combine coworking spaces with other functional spaces. One of the common approaches is to insert coworking spaces into conventional office buildings, especially within buildings containing large-scale creative and knowledge enterprises. SOHO 3Q, the largest coworking project in Beijing, covers a total area of 33,400 square metres, of which the coworking area is approximately 20,000 square metres, replacing the shopping mall portion of the original design. The rest of the building is mainly used for traditional office spaces, shops, cafés and restaurants. Furthermore, the remaining space accounting for 170,000 m^2 has been designed as high-grade conventional office space for successful enterprises, including large-scale creative and knowledge enterprises. Although the coworking offices only occupy a small portion of the whole building area, this coexisting model of coworking spaces and conventional office spaces has proved beneficial for both sides. The sublease of offices in large spatial volumes helps reduce financial risk, while coworking spaces explore potential clients. It has even cultivated a new sharing mode between coworking spaces and conventional office space. For example, a large percentage of shared meeting rooms in Tencent can be used by tenants of coworking spaces and conventional office tenants within the same building.

Another common approach is to introduce apartments to create an integrated coworking and coliving solution for young creative intelligence. In recent years, youth apartments have been welcomed by young people who are struggling with expensive housing prices in Beijing. The combination of coworking spaces and youth apartments provides new possibilities to 'work at home'. In the SOHO model, or more accurately, the 'collective SOHO' model, youth apartments play a significant role both functionally and financially. Due to building regulations, these apartments cannot be built into previous office buildings or shopping malls. Only those projects remodelled from complex units consisting of potential coworking spaces and potential coliving spaces, such as old apartments or old residential buildings, and newly constructed projects, can adopt this new SOHO model. In contrast to the lack of availability in urban core areas, factory complexes and empty land in the urban outskirts make such options possible. Yanjingli, a project in which a factory complex was remodelled, and UCommune in Guogongzhuang, a newly constructed commercial-office-apartment complex, are two collective SOHO type projects on the fringe of core functional areas. The apartment area of

Table 2. Basic area indexes for coworking space cases. (*Source*: Authors)

Project Category and Name	*Indoor Building Area* m^2	*Number of Workspaces*	*Indoor Area for Each Workspace* m^2	*Public Areas to Total Coworking Space* %
New construction (10 projects)	46,270	6,670	6.9	
SOHO 3Q	20,000	3,200	6.3	26.5
UCommune Guogongzhuang	3,500	620	5.6	46.8
Renewal (85 projects)	224,220	29,300	7.6	
Tencent Coworking Space	2300	341	6.7	48.2
UCommune Hailong Building	1,0000	1,500	6.7	36.7
KrSpace	3,400	500	6.8	32.0
Yanjingli	1,692	300	5.6	39.8

2,570 square metres in Yanjingli is even larger than that of the coworking spaces, which is approximately 1,700 square metres, as shown in figure 8.

Second, the compact workspace inside the coworking spaces is a significant feature when compared to conventional offices. The average total interior area for each workspace in Beijing coworking projects is between 6 and 8 square metres (table 2). Excluding public space from this area, such as service areas, aisles, stairs and elevators, the area for each workspace barely meets the minimum standard of 4 m^2 per workspace for common office buildings, as stated in the Design Code for Office Building released by the Ministry of Construction of the People's Republic of China in 2006.

If the area is smaller than the required 5–6 m^2 per workspace, it is difficult to maintain a healthy working environment. However, if the average exceeds 7 to 8 m^2, the project is vulnerable to higher financial risk. The average rental per workspace per month in the existing coworking spaces in Beijing is 1,000–2,000 RMB, which is the equivalent of 5–10 RMB per day per square metre for a standard traditional office space. This is the average rent for an existing office space in Beijing. Although this rate is similar to the cost per square meter of a conventional office, the smaller spaces for rent in coworking spaces does contribute to cost-savings for tenants. From the operators' point of view, the marginal rental range that still ensures a profit pushes them to seek lower-cost spaces or increase the efficiency of space utilization. Thus, it is more profitable to make denser workspace arrangements and move the resources in underutilized spaces to shared public spaces instead.

Third, the different percentages of functional areas within the coworking spaces indicate the response to variations in market demand. In terms of workspace area, there are two main spatial elements: desks for freelancers and flexible partitioned small spaces capable of accommodating several people at once. The shared desk areas are usually compact and flexibly placed to increase the capacity of the workspace; one example is the shared desks in SOHO 3Q and Yanjingli. The range of percentages of shared desk areas and partitioned small spaces can be seen in the selected six cases (figure 8). Comparatively, the increase in the percentage of shared desks shows the need to increase workspace capacity. In most of the coworking spaces in the central part of the city, leases for workspaces are monthly, regardless of shared

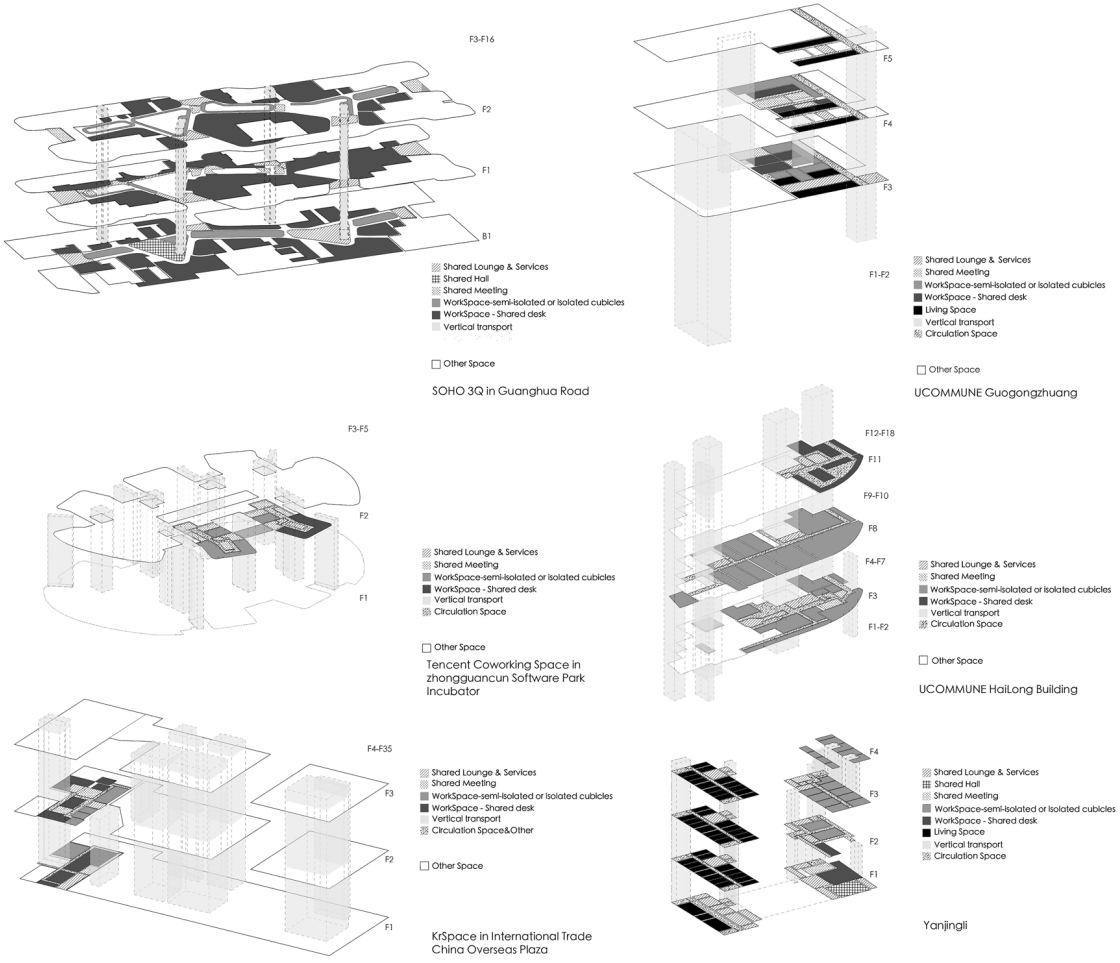


Figure 8. Interior space arrangement of six typical coworking spaces (all isometrics diagrams are the same scale). (*Source*: Authors)

desks or partitioned small spaces. Only small sections of projects, such as WeWork, have provided shared desks hourly since 2019, similar to the seats at Starbucks.

From a critical point of view, in the more compacted workspaces, a better work environment is needed to suit the aesthetic preferences of professionals in the creative and knowledge industries. In many cases, this leads to well-designed and capacious public areas coexisting with overcrowded workspaces.

The public service area usually includes a variety of spaces for open discussion, conference rooms of different sizes, lecture halls, reception services and so forth. According to the six selected cases, the ratio of public service areas to total area does vary but does not exceed 50 per cent. It ranges from the highest at 48 per cent, at Tencent, to the lowest at 26 per cent, at SOHO 3Q (table 2). In total, the percentages of workspace for rent, excluding public service areas and circulation spaces inside the projects, occupy more than 50 per cent in these six cases.

Public resource access is regarded as a crucial element for coworking spaces, as they are incubating spaces for innovation enterprises. However, until now, these resources

have functioned as shared physical spaces, such as shared meeting rooms or lecture halls. These spaces are supposed to benefit creative professionals by stimulating interactions among people from various industries. However, since the majority of operators are not experienced in training programmes or information systems, the extent to which these activities have a positive effect on the essential work content of the office space is questionable.

Discussion of the Practices of Beijing Coworking Spaces

Compared to conventional offices and SOHO, flexible lease spaces with flexible lease terms for startups and freelancers and ease of access to public resources, are regarded as the fundamental features of coworking spaces. These elements contribute to the minimization of space usage and a more collaborative society. However, the unstable lease market of small-scale businesses and marginal financial models, mainly from rental differences, challenge the survival of coworking spaces.

Uncertain lease markets and competitors catering for creative and knowledge enterprises make it difficult for coworking space operations to make a profit. Although the creative and knowledge industries have grown rapidly in recent years in Beijing, they still account for a small percentage of the whole urban economy. This suggests that the numbers of new enterprises and employees in this sector are limited. Furthermore, this growing sector's demands for workspace are not numerically significant. In addition to coworking spaces, there are also many other urban spaces, such as government-dominated incubators and traditional office spaces, which also have the potential to pursue the development of these industries. Unless there are enough small-scale businesses, the smaller-space leases and shorter lease terms present potentially unstable sources of revenue. In addition, urban economic fluctuations have a significant impact on the creative and knowledge industries. Case studies from Germany and Hong Kong SAR show that the creative economy undergoes more drastic changes than the urban economy. This was demonstrated in the phase of urban economic recession, where the creative economy experienced a more serious downturn. Unfortunately, Beijing is facing economic downward pressure wherein the innovative and creative industries are the first to suffer the effects, which poses a greater risk to coworking spaces than to traditional offices.

Flexible leases for small-scale businesses are strongly associated with the financial vulnerability of most startups and freelancers. Considering that profit is made mainly by creating rental differences, coworking spaces are unlikely to be highly profitable businesses. The need to offer reasonable rents to small-scale enterprises and freelancers obliges coworking spaces to seek underutilized spaces or improve space usage efficiency within a project. Due to the constraints of the sublease business model, coworking spaces usually require a certain occupancy ratio to achieve profit. This ratio is approximately 60–70 per cent in Yanjingli according to interviews with the project operator. Even in the case of SOHO 3Q, the rents obtained from businesses without high profits does not differ from re-lease projects in areas with denser space arrangements.

Hence, corresponding spatial strategies are adopted to decrease financial risk; these strategies include the reasonable scale of projects, selection of low-profit space for operation, the combination of other closely relevant functions such as conventional offices or youth apartments, and more compact workspace than that found in conventional office spaces.

This empirical study of coworking projects in Beijing indicates that these spatial strategies have had a positive impact on the sustainable development of the city. Coworking spaces support new economies mainly through the renewal of existing spatial resources, and they promote office space usage efficiency. However, given the pursuit of capital, coworking spaces in Beijing have tended to

pursue over-expansion. Currently, a huge number of projects are being planned, while some of the existing projects are facing severe operational challenges. The discussion above indicates that once the coworking space volume at the urban level exceeds a rational range, even the minimization of space usage is a waste of space resources. Therefore, the promise of coworking spaces should not be overstated, nor should they be given the aura of stimulating innovation and creativity. Meanwhile, a more rational understanding of urban space should be adopted when making decisions about new coworking spaces, with the goal of preventing coworking bubbles.

Conclusion

Coworking spaces have emerged in the context of creative and knowledge economies. As a work style, coworking has been driven by the demands for office space from new sectors of the economy that aim to use resources efficiently. In contrast to existing work styles, conventional offices or working at home, coworking spaces provide flexible spaces on flexible lease terms, as well as ease of access to public resources within micro-clusters. Unlike other P2P sharing economies, coworking spaces make profit mainly from rental differences.

On this basis, an analytical framework of key drivers and the spatial dimensions of coworking space is proposed, followed by an empirical study of coworking spaces in Beijing. The research indicates that at the urban scale, coworking spaces have the tendency to cluster within the creative and knowledge industries and in areas with a higher density of well-known enterprises, especially in mixed-used and high-density areas. At the architectural scale, coworking spaces tend to coexist with conventional office spaces or coliving apartments with compact working spaces within projects. Most coworking spaces have a floor area between 1,000 and 5,000 square metres and 6 to 8 square metres per workspace, which is less than that of conventional offices. The rent for coworking spaces is equal to the average rent for conventional offices.

We also suggest that the unstable lease market of small-scale business and marginal financial models, which mainly exists due to rent differences, may threaten the survival of coworking spaces. These abovementioned spatial features contribute to the reduction of financial risk. At the same time, they have promoted the sustainable development of the city by renewing existing low-profit urban spaces and using underutilized buildings more efficiently. However, in pursuit of capital, coworking spaces have shown a tendency to overexpand.

This study has proposed a framework of spatial perspectives on coworking spaces. However, insufficient information on coworking space operations precludes a more comprehensive evaluation of coworking spaces, including the occupancy ratio of workspaces and public spaces, and the influence of economic fluctuations on coworking spaces. Future study of coworking spaces will focus on the evolution of space utilization models, including changes in working styles, and how they adapt underutilized spaces through time-sharing.

NOTE

1. The Beijing municipal government released the industry category standard for Cultural and Creative Industries in 2006, including Art; Press Publishing; Radio, Television & Film; Internet and Software Service; Advertising &Exhibition; Antique Business; Design Service; Travelling, Leisure & Entertainment and Other Relevant Service. In 2018, the standard was revised as Culture and Relevant Industries, referencing the UNESCO Framework for Cultural Statistics 2009. This paper adopts the standard for Cultural and Creative Industries to acquire industry data.

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http://cowork.haozu.com/; https://www.urwork.cn/; https://www.nashwork.com/beijing/; https://www.weplus.com/;https://www.krspace.cn/;https://www.mydreamplus.com;https://www.distrii.com/;https://www.nakedhub.com/; http://www.people-squared.com/; http://www.soho3q.com/; https://www.hi-coffice.com/; http://www.wujiespace.com/; https://www.wework.cn/; http://www.funwork.cn/web/; http://space.toutiao.com/; http://www.kejisi.com/

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CONFLICT OF INTEREST

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