

ANALYSIS OF COWORKING SPACES IN GERMANY

THOMAS VOGL*, GRZEGORZ MICEK**, HANS-JOACHIM BARGSTÄDT*

* - Bauhaus-Universität Weimar, Faculty of Civil Engineering, BuiltEnvironment-Management-Institute, Marienstraße 7A, 99423 Weimar, Germany

** - Jagiellonian University, Faculty of Geography and Geology, Institute of Geography and Spatial Management, Gronostajowa 7, 30-387 Krakow, Poland

ABSTRACT

The number of Coworking Spaces is growing steadily in Germany and went up from 300 in 2018 to 1.268 in May 2020. According to a study by Savills, almost 90% of all hybrid Spaces and $\frac{3}{4}$ of all Business centers were located in the seven biggest cities of Germany. The recent developments in the context of the Covid-19 pandemic have shown a significantly increasing demand for more flexible and New Working Spaces in peripheral areas.

This work investigates the structures of Coworking Spaces in Germany. Therefore, 1.121 Coworking Spaces were identified through desk research and assigned to 258 congregations with their demographic and economic data to deduct the geographical distribution of Coworking Spaces in Germany apart from the big 7 cities. To identify Coworking Spaces in peripheral areas, the data was evaluated based on statistical data. In terms of a transdisciplinary approach, the cities and congregations of the dataset were assigned regarding predefined city categories of the real estate and urbanism sector and compared with each other.

Results show that the biggest and most relevant cities for the national and international real estate office market are leading the number of Coworking Spaces in Germany. However, smaller big cities with low importance for the real estate sector are also showing a high number and seem to be attractive for Coworking Spaces. Findings indicate that Coworking Spaces are existing in peripheral areas.

Keywords: New Working Spaces, Coworking, Suburban, Periphery

1. INTRODUCTION

The Covid-19 pandemic has shown a significant increase in the demand for more flexible and New Working Spaces. Especially during lockdowns, working from home became the norm rather than the exception and remote working has become established in society even after the end of the lockdown. However, working from home can have negative consequences for families in small households of below average-size or with limited access to technical equipment such as high-speed internet, W-LAN, or computers. In particular, for households with cramped living conditions or those on the outskirts of major cities, remote working cannot be a long-term solution. Therefore, a separate working area inside or near residential areas gains significance (Cuerdo-Vilches, Navas-Martín and Oteiza, 2021). In 2005, the first coworking space with this title opened in San Francisco (Waters-Lynch et al., 2016). The concept was so convincing that the number of Coworking Spaces increased sharply in the following years (Kollowe, 2020, Müller, 2018). The ongoing digitization and the growing demand for flexible working models have first enabled and then promoted this development, as work could be done more and more from anywhere at any time (Spinuzzi, 2012, Lang 2019). All this illustrates the growing number of Coworking Spaces in Germany, which went up from 300 in 2018 to 1.268 in May 2020 (Bundesverband Coworking e. V., 2019).

A coworking space is generally understood as a space that can be used flexibly by different coworkers for their work. By creating a workplace with existing infrastructure outside of office space and one`s homes Coworking Spaces are considered, as the so-called third places (Merkel, 2019). In addition to the uncomplicated physical and financial accessibility, coworking places are characterized by qualitative factors and functions for their operators and users. The core values of a coworking space are defined by the will of users to collaborate and cooperate, and then the formation of a community in which users mutually benefit from each other. The willingness to share one's ideas with other coworkers as well as a general openness towards them is another decisive characteristic. Besides Sustainability in terms of the conscientious use of financial and natural resources is another feature of Coworking Spaces (Schürman, 2013).

This paper investigates the geographical distribution of Coworking Spaces in Germany and analyses their characteristics from a real estate economic and spatial planning point of view. Therefore, a substantial part of the research deals with the question of how the evaluation of the current situation on Coworking Spaces differs between a real estate and an urbanism perspective. Finally, the development of Coworking Spaces in secondary locations with a focus on small cities and peripheries are examined in more detail.

2. DATA SOURCE

As a basis for investigation, a dataset that combines information from the internet and accessible databases through desk research was conducted from May 2021 until August 2021. As a result, 1.121 Coworking Spaces were identified and assigned to 258 congregations with their demographic and economic data to deduct the conviction rate of Coworking Spaces in German towns and peripheries beside the big 7 cities. The demographical data (reference date 31.12.2019) have been collected through accessible statistics published by the Federal Statistical Office (Statistisches Bundesamt, 2020) and the economical data (reference date 31.12.2019) by the Statistical Departments of the Federation and the Federal States (Statistische Ämter des Bundes und der Länder, 2020).

In order to represent the real estate perspective the identified Coworking Spaces were assigned to the city types of the A-B-C-D classification model, which was introduced by analysts Bulwiengesa 25 years ago to give investors an initial assessment of the risk/return profiles of different office markets and was subsequently transferred to the residential market (Bulwiengesa AG, 1995). Regardless of criticism (Haufe, 2019) this approach is a well-established model which provides a simplified basis of data for the real estate office market for 128 cities in Germany based on a four-level system (A, B, C, D). In this context, the cities are categorized to the different levels according to their importance for the national and international real estate market and their performance characteristics, such as total office space stock, office space take-up per year, and prime rents (Wiersma, Heinrich and Just, 2019).

Therefore, cities of level A are defined as the most important centers with national and international importance for the real estate market. They are represented by 7 Million sqm of stock of office space and a yearly office space take-up of more than 150.000 sqm. Further, the office market of A cities shows prime rents of a minimum of 16 €/sqm. The so-called “Big-7” cities of Germany are assigned to that category.

In contrast, towns of category B are defined as big cities with regional and national importance for the real estate market. Their total stock of office spaces is between two and five million square meters. The yearly space take-up is higher than 35.000 sqm and prime rents are more than 12 €/sqm. Fourteen big cities with primarily more than 500.000 inhabitants belong to this category.

C cities are important German cities with a regional and limited national importance for the real estate market but with a significant influence on the surrounding regions. The office market has about 500.000 sqm space and take-up of about 10.000 sqm per year. Further, these cities are represented by minimum prime rents of 8 €/sqm. In total 21 cities with less than 500.000 but more than 100.000 inhabitants are included in the C category.

Towns of the lowest category D are defined as small cities with a regional focus and impact on the immediate surroundings. They have a small office market and therefore insignificant lease take-ups per year as well as small prime rents. The categorization model of Bulwingsa identified 84 towns with a population of more than 20.000 but less than 180.000.

To be able to cover also the municipalities with identified Coworking Spaces but which are not listed in the A-B-C-D classification model with identified Coworking Spaces the author invented category E, which includes 132 entities with more than 1.700 inhabitants.

The urbanistic perspective is represented by the typology of cities and municipalities of the Federal Institute of Research on Building, Urbanism Affairs and Spatial Development (Bundesinstitut für Bau-, Stadt- und Raumforschung, BBSR). This classification model was developed in the course of the redevelopment of a city in 2003 and categorizes cities and municipalities in Big-, Mid-sized- and Small cities. Therefore, the city and municipality type focus on the role of cities with regard to their size. The sole purpose of this approach serves for analytical and comparable objectives and can't picture all trends and phenomena of cities and municipalities. However, it is an appropriate approach to order municipals, in particular, regarding small-sized spatial analysis in terms of the status description (e. g. unemployment rate, purchase power) as well as the measurement of development, such as demographic development, migration balance (Bundesinstitut für Bau-, Stadt- und Raumforschung, 2017).

Criteria for the categorization are the size of the community (population) and its function as a central town. If a municipality within a municipal association has more than 5.000 inhabitants or a central role, it is defined as a "city". If one of those conditions is not applying to the united community or the municipal association, then it's defined as a rural community. Of the total of 4.500 units, 1.700 are defined as rural communities and 2.800 as cities. The types of cities are distinguished as follows. Big cities are united communities or municipal associations with a minimum of 100.000 inhabitants. These cities have usually a role as regional or at least medium centers. The group of big cities can be further divided into large big cities with at least 500.000 inhabitants and smaller big cities with less than 500.000 inhabitants. In the scope of this work, 14 large big cities and 67 smaller big cities were assigned to the category of big cities.

Mid-sized cities are united communities or municipal associations with between 20.000 and 100.000 inhabitants. The majority of the cities have a function as medium centers. The subgroups of this category are large mid-sized cities with a minimum population of 50.000 and smaller mid-sized cities with less than 50.000 inhabitants. In total 60 cities were identified as large mid-sized cities and 55 as smaller mid-sized cities.

Small cities are united communities or municipal associations with between 5.000 and 20.000 inhabitants or with a basic central function. The group of the small cities can be further divided into large-small cities with a minimum of 10.000 inhabitants and smaller small cities with a population of less than 10.000. The dataset includes 35 larger small cities and 27 smaller small cities.

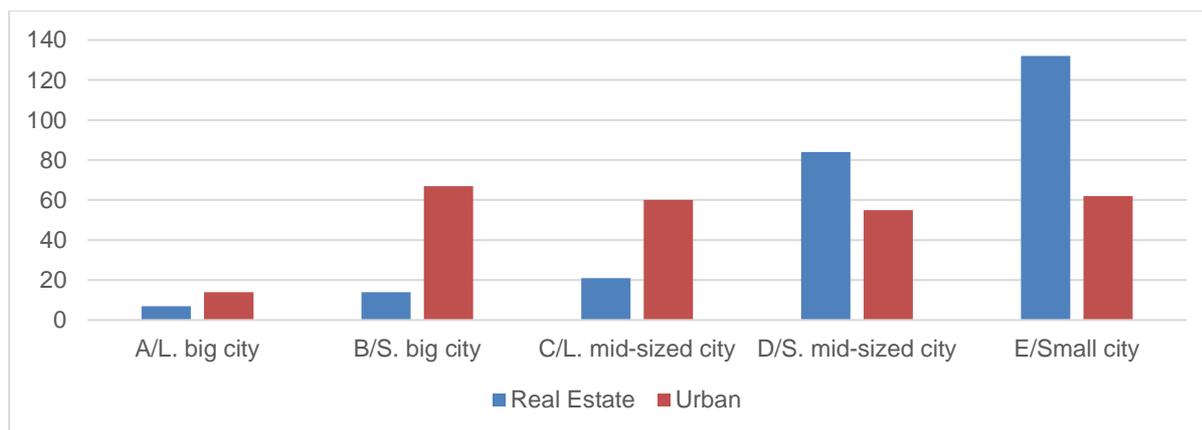
To make the datasets comparable on a quantitative basis, the author limited the allocation of the cities to the subgroups by their population. Consequently, the role of the city has not been neglected.

3. RESULTS

After preparing the database, the comparison of this data followed, with the focus on the geography of Coworking Spaces and secondary locations as well as the assessment of Coworking Spaces corresponding with the real estate and urbanism perspectives. To identify the allocation of Coworking Spaces in Germany, the locations were evaluated and assigned to categories as described in section 2. Depending on the perspective, the 1.121 Coworking Spaces are distributed to different types of cities as shown in figure 3.

In order to be able to make comparable measurements between the two viewpoints the subgroups “large-small cities” and “smaller small cities” of the typology of cities and municipalities approach were combined in some illustrations. The illustration below shows the number of cities which were assigned to each category.

Figure 1: Comparison of the number of cities regarding Real Estate and Urban categories



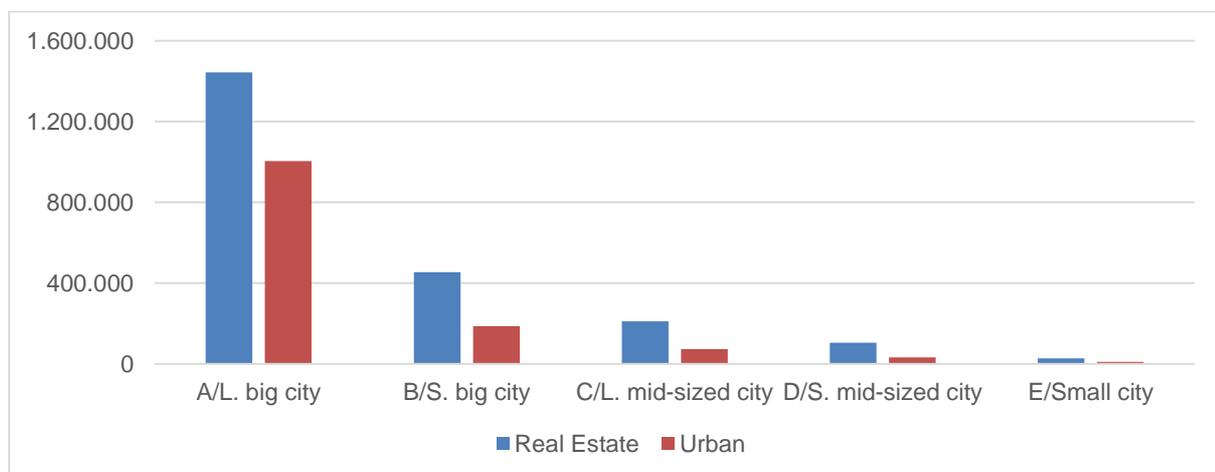
Source: Own diagram based on typology model of BBSR and Bulwingsa AG

The graph above illustrates that the number of cities per category varies widely among the two approaches analyzed. Whereas in the first category the numbers of cities were almost equal independently of the perspective, the second category “B/Small big city” shows already a significant difference. This divergence is the result of the strong population dependence of the urbanism typology approach of the BBSR, while the real estate categories are based on economical performance

parameters of the office market in Germany. Consequently, it can be assumed that the biggest cities of Germany are of paramount importance for the national and international real estate market and that the majority of the small mid-sized, and small cities have low importance.

To analyze the assumption of the relationship between the size of the cities and the importance for the national and international real estate market the average number of inhabitants is calculated for each category of the two different perspectives and compared with each other. The chart below shows the differences in the average population per category.

Figure 2: Comparison of the Real Estate and Urban categories regarding the average population of the cities

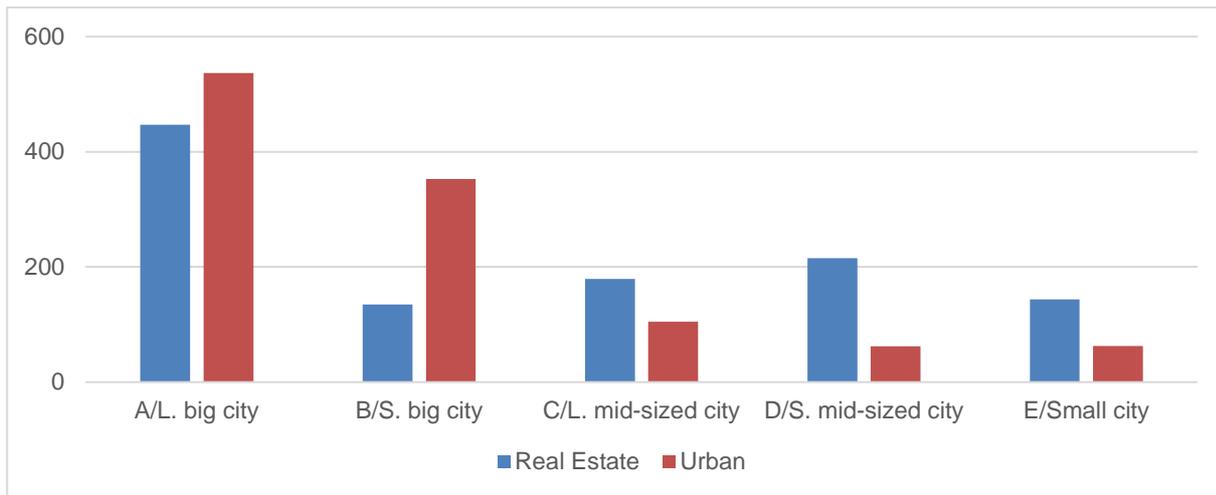


Source: Own diagram based on typology model of BBSR and Bulwingsa AG and data of Statistisches Bundesamt 2021

As shown in the bar chart above the number of inhabitants of a city has a close linear relationship with its relevance for the real estate office market. Thereby, it can be confirmed that the biggest cities of Germany have also the highest importance for the national and international real estate office market. Furthermore, it can be assumed that the attractiveness of a city for the implementation of Coworking Spaces is also associated with the population and impact of a city on the real estate market. Consequently, the number of Coworking Spaces per category is decreasing congruent with the dwindling population.

In terms of the geographical distribution of Coworking Spaces and their dependence on the population of a city, the number of Coworking Spaces were summed up and assigned to each category of both perspectives and compared as shown in the graph below.

Figure 3: Comparison of the number of CS regarding Real Estate and Urban categories



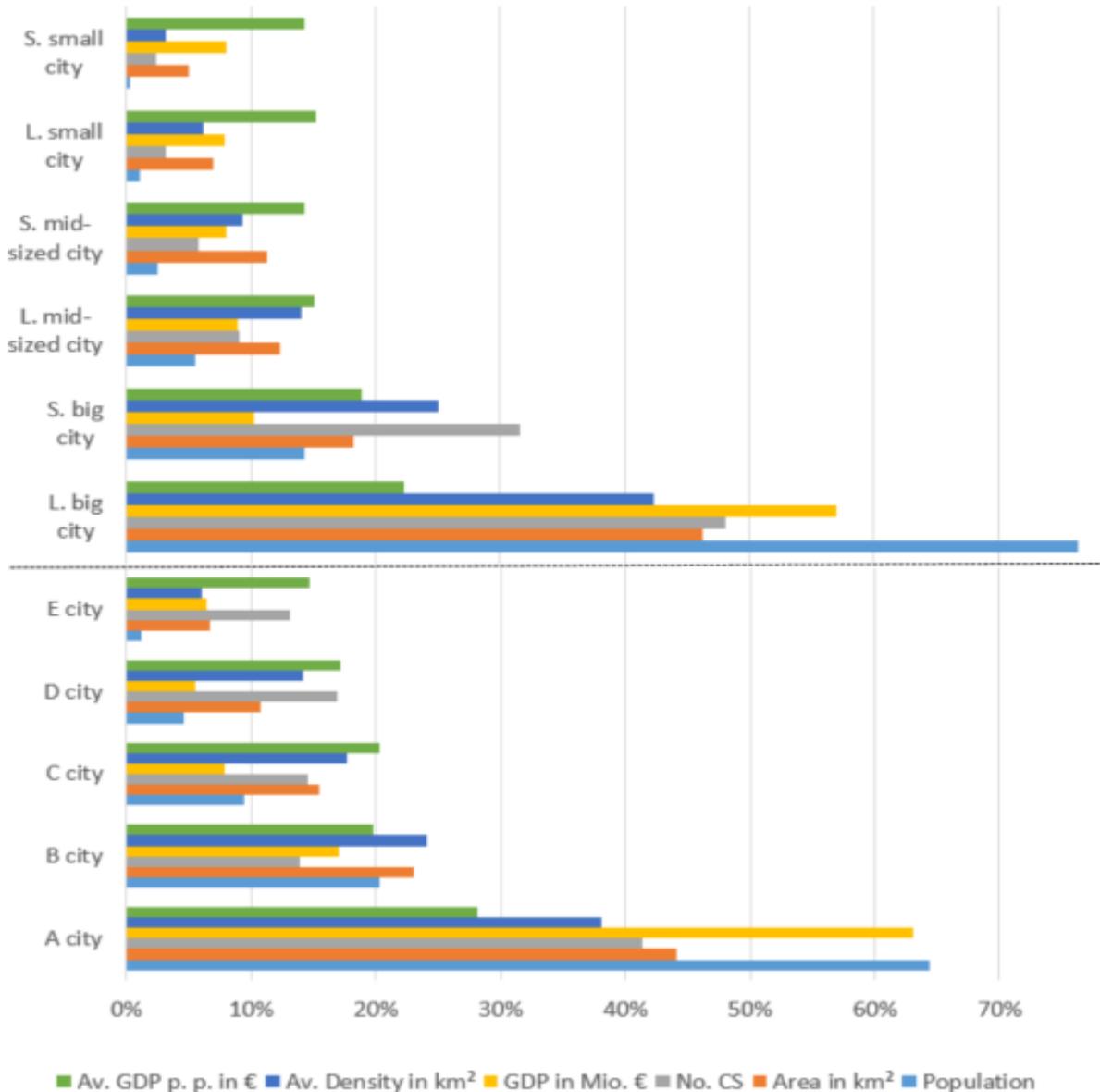
Source: Own diagram based on typology model of BBSR and Bulwingsa AG

In the case of the number of Coworking Spaces, analyses show that the large majority of Coworking Spaces is located in the 7 A-cities with 459 addresses or in the 14 Large big cities with 557 locations as shown in the graphs above. This demonstrates the first level of concordance between real estate and the urbanism perspective and confirms the assumption that the distribution of Coworking Spaces is still highly dependent on the size and the importance of the city for the national and international real estate office market. Opposite to the assumption made above stands the second city category. Although the urbanism perspective (Smaller big cities) indicates that there is a linear connection between the number of Coworking Spaces and the population as assumed, this relationship is not confirmed regarding the real estate categorization as 154 Coworking Spaces on city level B represent the lowest score compared to all other categories of the A-B-C-D classification model. As shown in figure 3 the city-type D with no significant importance for the national real estate market has with 208 the second-highest rate of Coworking Spaces in Germany. In general, the comparison displayed in figure 1 shows that the two perspectives analyzed are not congruent to each other. Further, it confirms the high correlation between the number of inhabitants and Coworking Spaces. Consequently, 80% of all Coworking Spaces in Germany are located in the main category “big cities” with more than 100.000 inhabitants. The allocation of Coworking Spaces from a real estate point of view shows that besides the big A cities with a high office space demand also secondary or tertiary locations with a low supply of office space and low prime rents are showing a high availability of Coworking Spaces.

In order to analyze the distribution of Coworking Spaces in more detail, demographic and economic data was added to the database of the identified cities. For a better graphical presentation of the results, average values for all variables were calculated for each city type and set in relation to the sum of all

cities. The figure below shows the percentage values of each city type from a real estate and urbanism point of view.

Figure 4: Allocation of CS regarding demographical and economical in Real Estate and Urbanism categories



Source: Own diagram based on typology model of BBSR and Bulwingsa AG and data of Statistisches Bundesamt 2021

The graph above once again confirms the correlation between the population and the number of Coworking Spaces. From the urbanistic perspective, correlations can be recognized concerning the area, density, GDP, and the number of Coworking Spaces, which, however, cannot be confirmed by the real estate perspective. The correlation between the GDP per person and the number of Coworking Spaces seems to be insignificant for both perspectives since it remains almost the same for all types except for the first city categories A (72.917,90 €/p. p. a.) and Big cities (54.548 €/p. p. a.). The average GDP per inhabitant per year for the real estate category D which shows the second-highest

amount of Coworking Spaces according to figure 3 is 44.365,2 € and thus marginally below the values of city type B 51.274,6 € and C 52.516,3 €. Therefore, it can be assumed that the GDP per person per year is an unimportant location factor for the implementation of Coworking Spaces.

Further investigation was executed regarding the term periphery to narrow the sample dataset appropriately. As there is no common definition of peripheries in the literature, in the following course of this work, a general understanding of peripheries is assumed as the outskirts of cities. Therefore, these areas can be characterized by their location to densely populated city centers and urban agglomerations (Raumpilot Arbeiten, 2012). The further away from metropolitan regions, the more peripheral is the status of the location (Stein, Wiegand, Dehne, Hülz, Kühn, Kujath, Rühl and Stahlkopf, 2016).

To fulfill the mentioned criteria, an intersection of the groups with less than 50.000 inhabitants, such as smaller mid-sized, big small cities, and smaller small cities (11%) and D or E locations (32%) were created to determine an approximation of the number of Coworking Spaces in peripheral areas. This results in the value of 115 municipalities with 127 Coworking Spaces or about 11% of the whole number of Coworking Spaces of the sample data set.

The 127 examined municipalities are defined by a municipal territory of 64 km² on average and an average population of 20.361. The average GPD per person is in peripheral cities with 38.591 € slightly lower than in the average of the total dataset (43.040 €). Further, it can be seen that municipalities that were defined as peripheral areas have the lowest value of population density with 452 citizens per km² on average. On the contrary, the A cities are showing a mean value of 3.290 inhabitants per km² and the average of all the 258 analyzed cities is 995 citizens per km². This comparable low density and average population suggest, that the intersection of the mentioned groups represents peripheral areas, wherefore the quote of around 10% can be assumed as a reasonable ratio of Coworking Spaces in peripheral areas in Germany.

4. CONCLUSION

This paper aimed to show the geographical distribution of Coworking Spaces through Germany from a real estate and urbanism point of view. Taken together, the research showed that the majority of Coworking Spaces are located in the big cities of Germany with high relevance for the national and international real estate office market. Besides, the research showed that Coworking Spaces are also existing in mid-sized and small cities with very low importance for the real estate office market in Germany. Therefore, about 11 % of the Coworking Spaces of the dataset are located in these categories and were considered as peripheries in the course of this work.

In terms of the geographical distribution, it can be said, that the large majority of the Coworking Spaces are located in big cities with more than 100.000 inhabitants and with high relevance for the national or international real estate office market. The second-highest number of Coworking Spaces were identified on the second level of urbanism categories (Smaller big cities) but with 19% on the lowest relevant city type (D) for the real estate office market. This could be the result of low office rents and the growing potential of the markets, which makes it attractive for start-ups and Coworking Spaces.

The outcome of this work can be seen as a basis for further investigations. In this context, more research could be carried out in terms of a statistical evaluation of the parameters for more evidence to examine patterns of the areas, assess the impact of the Coworking Spaces on the region, or identify potential decisive factors for the foundation of Coworking Spaces. Therefore, meta-analysis over a longer period could provide information on the development of Coworking Spaces in peripheral areas as well as their impact on the regions. Further, the dataset could be used in terms of qualitative researches in the identified Coworking Spaces to get a better understanding of their motivation and potential success factors. Besides, the demographical and economical aspects of the identified regions could be analyzed in more detail to assess their patterns and characteristics.

Taken together, Coworking Spaces are already existing and established in small cities and peripheral areas, even though the vast majority of Coworking Spaces are still located in big cities with a strong economy and impact on the real estate office market. Further investigations need to be done in terms of defining success and location factors for implementation and the impact on the regions in order to advance the establishment of Coworking Spaces in peripheral areas.

Reference List

- Bundesverband Coworking Spaces e. V.** (2020): Die Zahl der Coworking-Spaces hat sich vervielfacht. <https://www.bundesverband-coworking.de/2020/06/zahl-der-coworking-spaces-hat-sich-vervierfacht/>, downloaded on 27.08.2021.
- Bundesinstitut für Bau-, Stadt- und Raumforschung** (2017): Laufende Stadtbeobachtung – Raumabgrenzungen. <https://www.bbsr.bund.de/BBSR/DE/forschung/raumb Beobachtung/Raumabgrenzungen/deutschland/gemeinden/StadtGemeindetyp/StadtGemindetyp.html>, downloaded on 01.09.2021
- Bulwiengesa AG.** (1995): Definition & Metainformation. https://www.riwis.de/online_test/info.php3?cityid=&info_topic=allg, downloaded on 29.08.2021
- Cuerdo-Vilches, T., Navas-Martín, M.Á., Oteiza, I.** (2021): Working from Home: Is Our Housing Ready? *International Journal of Environmental Research and Public Health*, 18(14), S.7329.
- Gasser, M., zur Brügge, C., Tvrtković, M.** (2012): Raumpilot Arbeiten. Wüstenrot Stiftung, Ludwigsburg, und Karl Krämer Verlag, Stuttgart + Zürich
- Haufe:** (2019): gif-Studie: Klassifizierung in ABCD-Städten überholte, https://www.haufe.de/immobilien/entwicklung-vermarktung/marktanalysen/gif-studie-klassifizierung%20-in-abcd-staedte-ueberholt_84324_484252.html, downloaded on 28.08.2021
- Ries, J.** (2019): Mittelstädte als Stabilisatoren ländlich-peripherer Räume, Arbeitspapiere zur Regionalentwicklung des Lehrstuhls Regionalentwicklung und Raumordnung, Technische Universität Kaiserslautern, 20, S. 2
- Savills Research Deutschland.** (2018): Analyse - Flexible Workspaces in Deutschland: Eine Bestandsaufnahme. <https://pdf.euro.savills.co.uk/germany-research/ger-ger-2018/flexible-workspaces-in-deutschland---eine-bestandsaufnahme---final.pdf>, downloaded on 23.08.2021
- Statistisches Bundesamt.** (2020): Städte (Alle Gemeinden mit Stadtrecht) nach Fläche, Bevölkerung und Bevölkerungsdichte. <https://www.bundesverband-coworking.de/2020/06/zahl-der-coworking-spaces-hat-sich-vervierfacht/>, downloaded on 25.08.2021.
- Statistisches Bundesamt.** (2018): Übernachtungen in Beherbergungsbetrieben nach Bundesländern. <https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Gastgewerbe-Tourismus/Tabellen/uebernachtungen-bundeslaender.html>, downloaded on 04.09.2021
- Statistische Ämter des Bundes und der Länder.** (2020): Bruttoinlandsprodukt, Bruttowertschöpfung in den kreisfreien Städten und Landkreisen der Bundesrepublik Deutschland. <https://www.statistikportal.de/de/veroeffentlichungen/bruttoinlandsprodukt-bruttowertschoepfung-0>, downloaded on 25.08.2021
- Statista** (2019): Anzahl der Beschäftigten in der Automobilindustrie in Deutschland nach Bundesländer 2019. <https://de.statista.com/statistik/daten/studie/1040326/umfrage/beschaeftigte-in-der-deutschen-automobilindustrie-in-deutschland/>, downloaded on 05.09.2021
- Stein, A., Wiegand, T. S., Dehne, P., Hülz, M., Kühn, M., Kujath, H J., Rühl, U., Stahlkopf, E.** (2016): Wissenschaft als Herausforderungen für ländlich-periphere Regionen. Beispiele aus Nordostdeutschland. *Forschungsberichte der ARL 6*. Verlag der ARL, Hannover.
- Wirmsma, S., Heinrich, M., Just, T.** (2019): Segmentierung deutscher Wohnimmobilienmärkte. Gesellschaft für Immobilienwirtschaftliche Forschung e. V.

Acknowledgments

The paper has been supported by COST Action CA18214 'The geography of New Working Spaces and the impact on the periphery', which is funded by the Horizon 2020 Framework programme of the European Union (project website: <http://www.new-working-spaces.eu/>; European Union Website: <https://www.cost.eu/actions/CA18214>) through the STSM research stay of Thomas Vogl at the Jagiellonian University in Krakow.

Email contact: thomas.vogl@uni-weimar.de, grzegorz.micek@uj.edu.pl, hans-joachim.bargstaedt@uni-weimar.de