

The Multi-locality of Students during COVID-19 and Its Effects on Spatial Development: A Quantitative Case Study of Leibniz University Hanover

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Multi-locality is common in the age group between 18 and 29, mostly due to participation in education processes. The COVID-19 pandemic affected students by abruptly establishing new forms of learning (e.g., virtual classes). A quantitative survey of students from Leibniz University Hanover was conducted during the pandemic in 2020. The survey showed that 78 percent of students live multi-locally and that the pandemic considerably influenced students' multi-local lifestyles.

▪ **Keywords:** housing, infrastructure, engagement, pandemic, multi-locality, students

V starostni skupini od 18 do 29 let je multilokalnost pogost pojav, predvsem zaradi udeležbe mladih v izobraževalnih procesih. Pandemija covida-19 je študente prizadela z nenadno uvedbo novih oblik učenja (npr. virtualni razredi). Med pandemijo leta 2020 je bila izvedena kvantitativna raziskava med študenti Univerze Leibniz v Hannoveru. Raziskava je pokazala, da 78 % študentov živi multilokalno in da je pandemija opazno vplivala na multilokalni življenjski slog študentov.

▪ **Ključne besede:** nastanitev, infrastruktura, sodelovanje, pandemija, multi-lokalnost, študenti

Introduction

Multi-locality or multi-local living means a way of life in two or more places at the same time. During “*vita activa* in several places”, people use their residences in functionally diverse ways for varying periods of time (Rolshoven, 2006: 181). As a “mass phenomenon” (Weichhart, 2015: 378), multi-locality has already been studied in numerous disciplines such as housing, household and family research (Hilti, 2009; Schier et al., 2015; Wood et al. 2015), as well as migration and mobility research (Nadler, 2014; Kilkey, Palegna-Möllenbeck, 2016). It has also received increased attention in the spatial sciences (Tippel, Plöger, Becker, 2017; Di Marino, Lapintie, 2018; Greinke, 2020; Plöger, 2020; Garde, 2021; Othengrafen et al., 2021). Numerous studies conclude that multi-local lifestyles are represented in almost all age groups and social backgrounds (Hilti, 2013; ARL, 2016; Oberösterreichische Akademie, 2019). In the life phase of young adults between 18 and 35, the main motives for living in two or more places are education or studying (Zeilinger, 2017; Othengrafen et al., 2021). Multi-locality is increasingly common among students (Kramer, 2020). This analysis focuses on 18 to 29-year-old students, as this age group represents a large proportion of those living multi-locally in Germany (Dittrich-Wesbuer, Sturm, 2020).

The COVID-19 pandemic affected students by abruptly establishing new forms of learning (e.g., studying from home or virtual classes) (Bartik et al., 2020; Bick, Blandin, Mertens, 2020). These changes include the shift from face-to-face teaching to virtual and location-based distance learning as well as contact restrictions and limited access to university buildings (e.g., libraries, lectures halls, student laboratories), which affected student life (Neises, 2021). For multi-locals, these developments can have an impact on their lifestyles as well as on the people they live with and the spatial surroundings they inhabit. Willberg et al. (2021) assume that multi-locality may decline due to these changing forms of studying. In addition, Reuschke and Felstead (2020) expect that these changes can have many implications, even on mental health. Spatial development authorities require information on multi-locality to effectively respond to the extent and characteristics of the phenomenon. The paper aims to analyze the impact of multi-locality on students enrolled at Leibniz University Hanover during COVID-19 and to identify its effects on spatial development. The focus is on housing, leisure behavior, infrastructure, and the COVID-19 pandemic, including as well a discussion of opportunities and challenges.

The paper introduces the state of research on the multi-locality of students before presenting a case study with a quantitative online survey conducted with students from Leibniz University Hanover in Germany. The survey results are presented and discussed, followed by conclusions and outlook.

Multi-locality of students

Bachelor's students in Germany are on average 24.7 years old, and 92 percent of them study full-time – an average of 33 hours per week (Middendorff et al., 2017). The federal capital of Berlin represents the largest German student city with around 194,000 students, followed by the city of Munich (114,000 students) and the city of Cologne (106,000 students) (Studis-Online, 2020). The following study focuses on the city of Hanover, the capital of Lower Saxony, where around 45,000 people study (Schirmer, 2017). Overall, 10 percent of all students in Germany live multi-locally. 62 percent of multi-local students have their second accommodation with their parents at a location separate from their university residence (Middendorff et al., 2017).

The majority of students have always lived multi-locally (Weichhart, 2009). Multi-locals spread their everyday life over several places in diverse ways. For example, some students regularly stay overnight in the accommodation of their partners as Living Apart Together (LAT) couples, mostly switching between two separate households (ARL, 2016). In addition, some multi-local students sleep on the sofa of their acquaintances or at their parents' house – be it in former children's rooms or guest rooms (cf. Sturm, Meyer, 2009; ARL, 2016).

Due to numerous existing forms of multi-local living and overlapping motives, multi-local lifestyles are difficult to measure quantitatively or in terms of residence registration data (Albrecht, Dittrich-Wesbuer, 2021). Multi-locals are hardly visible in official statistics because they are often not registered with a secondary residence (Sturm, Meyer, 2009; Dittrich-Wesbuer et al., 2015; Weichhart, Rumpolt, 2015; Albrecht, Dittrich-Wesbuer, 2021) and because the status ‘student’ does not exist in the German register of residents (Kramer, 2021). In Germany, every person is assigned to a territorially defined area under registration law (ARL, 2016). Although people have the option to register a main and secondary residence in several places (Weiske, 2013), many do not do so. For example, some university towns with a secondary residence tax have very low numbers of registered second homes. However, in the case of cities with a high proportion of students but without a corresponding municipal ordinance, there are higher numbers of secondary residents. It can be assumed that many students in cities with a secondary residence tax do not comply with their registration obligation (Albrecht, Dittrich-Wesbuer, 2021) – also for cost reasons. In such cases, students still mostly continue to use their parents’ home as their registered residence for an indefinite period of time (Weichhart, 2009). Therefore, it can be assumed that the ‘dark number’ of people living in multiple locations is significantly higher than is often supposed (ARL, 2016).

There are some statistical data and empirical studies on the multi-locality of students. For example, a micro census conducted in 2010 shows that 2.1 percent of persons aged 18 and older lived in another apartment (also room, (shared) accommodation or dormitory) in Germany. Just under half of the respondents belong to the age group up to 30 years, so it can be assumed that these are professional or student arrangements (Dittrich-Wesbuer, 2016). In another quantitative online survey of LATs, shuttles¹ and local residents (n = 1270), 46.1 percent of surveyed shuttles and 42.9 percent of LATs live multi-locally (Petzold, 2011). A survey of students at the Institute of Technology (KIT) in Karlsruhe in 2010 showed that 25 percent of students live multi-locally. However, multi-local living seems to be a temporary phase for students because many of them give up their multi-local lifestyle in favor of a mono-local one and move out of their parents’ home to their place of study in their later years of study (Kramer, 2015). Other studies show that academics tend to continue to live multi-locally after completing their university studies (Zeilinger, 2017). More recent studies in the eastern city of Karlsruhe from 2016 also showed that 59 percent of students live multi-locally (Kramer, 2021).

When choosing accommodations, students mostly prefer central and inner-city sites (Weichhart, 2009; Zeilinger, 2017) as well as relatively small (1-2 rooms), and, if possible, furnished accommodations (Zeilinger, 2017; Greinke et al., 2021). In rural areas, students prefer to live mainly in the immediate vicinity of their place of study (Greinke et al., 2021). However, the types of housing often differ widely. For example,

¹ Persons with an occupational second home.

students may live in properties provided by relatives or acquaintances, shared flats or student dormitories (Zeilinger, 2017).

Students must be able to afford dual household management with or without parental support to lead a multi-local life (e.g., paying rent at their place of study). In addition, there are mobility costs involved in commuting between locations. In many cases, students often depend on public transport because they cannot afford a privately owned car. Additionally, access to transportation can vary according to location (Fischer, 2020). Mostly, students travel back and forth between their places of residence on a weekly basis, especially at the beginning of their studies. Usually, they are at their place of study within the week and, depending on the timetable, leave for their other accommodation on early Friday afternoons. However, whether and how often students commute also depends on distance and associated travel costs (Zeilinger, 2017). Students are for the most part present during the lecture period. More extended absences from their university accommodations are expected during the lecture-free period, during which time the flats can be expected to be vacant (Zeilinger, 2017). On the other hand, the housing market is tight in most cities in Germany during the lecture period. Whether and how students live multi-locally also depends on students' emotional connections to different places, their parents, family, and rational determinants such as the labor market. In addition, having partners at students' municipality of origin can also be a reason for staying at the accommodation "at home". In many places, especially rural municipalities, soft site-related factors such as natural qualities of the areas encourage students to live multi-locally (Fischer, 2020).

In addition, an analysis of Austrian statistics (Statistik Austria) in 2013 showed that around 30 percent of students live multi-locally (Zeilinger, 2017). Furthermore, a quantitative survey of 540 geography students at the University of Innsbruck in the summer semester of 2021 showed that many students changed their living situation during the COVID-19 pandemic. The reasons given for this were mostly the desire for an independent lifestyle and the existing availability of leisure activities (Neises, 2021). Compared to before the pandemic, the number of those living in student accommodations at their primary place of residence increased. In addition, more people are living in shared accommodations, and fewer people are living with their parents or grandparents. According to respondents, the main reasons for their lifestyle changes during the pandemic were time-consuming travel, quarantine regulations, and border controls. Due to the pandemic, many students also reduced the frequency of commuting between their places and stayed more often at their primary residence (university accommodation). However, the duration of the stays mostly remained the same (Neises, 2021). Whether students return after graduation to their place of origin as mono-locals depends on numerous factors. For example, a quantitative survey of 128 students at the University of Vienna showed that family, nature, friends, property, or profession could influence relocation (Kappelmüller, 2014).

Multi-local students are an interesting target group for spatial development and municipalities. The migration of students and resulting brain drain can pose a challenge for some municipalities (especially structurally weak ones). However, the opportunities that may arise from the presence of multi-local students are also often discussed – including their potential for bringing new ideas into a municipality (Fischer, 2020) or participating as volunteers.

Students can be a catalyst for urban life (Kramer, 2021). Although “studentification” is already being critically discussed in the UK in reference to the term gentrification (Kramer, 2021: 10), students identify themselves as (future) residents of their neighborhoods. Their creative potential and their commitments – whether they are political, social, or voluntary in associations and churches – could enliven a neighborhood far more than is currently the case if they were offered low-threshold opportunities to participate in local life (e.g., trial memberships, project formats, workshops). They should therefore be engaged even more in spatial planning, development, and design processes in the future (Kramer, 2021).

“University sites are places of multi-locality” (Zeilinger, 2017: 116). In recent years, some actors are already responding to the demand for small and furnished flats for ‘young professionals’ (ARL, 2016: 9). New forms of furnished housing with additional services (e.g., WIFI, common rooms) in student dormitories have become an established practice in many cities, allowing students to move in quickly and use flats immediately. In addition, these accommodations are mostly affordable on students’ tight budgets. Furthermore, student dormitories have already been converted into ‘normal’ flats and hotel rooms during the lecture-free period to avoid vacant apartments (Zeilinger, 2017).

In summary, multi-locality has changed and evolved due to societal changes. Existing research has demonstrated that multi-local lifestyles are prevalent in the age group between 18 and 29 years. There is an exceptional need for additional research in this topic area for university sites. The case study of the city of Hanover as a university site examines existing students’ multi-local lifestyles together with the resulting opportunities and challenges.

Methods and case study

A comprehensive literature review,² followed by a quantitative survey with students from the Faculty of Architecture and Landscape Sciences of Leibniz University Hanover, was conducted to analyze the impact of the multi-locality of students during COVID-19 and to identify its effects on spatial development.

² A literature analysis (conducted according to Brink, 2013) on student multi-locality serves as the background for the case study of the city of Hanover. Multi-locality and students were entered as titles on Google Scholar, and 993 hits were found. The titles and abstracts for the search terms were read and then selected for further analysis. Further approximations to the field are exploratory.

The city of Hanover was chosen as a case study given that compared to other large cities, Hanover is mainly populated with young adults between 18 and 29. Moreover, it has the third highest proportion of students in the population due to it being an attractive location for work, education, and university sites. Hanover is also forecast to have a positive natural population balance between births and deaths in the future (LHH, 2021), due not least to (international) immigration and people moving to Hanover. As a result, the city's population is growing (Kaiser, Blaschke, 2019).

Hanover is home to the second largest university in Lower Saxony, Leibniz University Hanover, which has over 28,819 students in 85 degree programs in the winter semester 2021/2022 (KFSN, 2020; Das Präsidium der Leibniz Universität Hannover, 2022). It is organized into nine faculties, one of which is the Faculty of Architecture and Landscape Sciences (Das Präsidium der Leibniz Universität Hannover, 2022). Approximately 1,450 students are enrolled in 13 degree programs at the faculty in the winter semester of 2022/2023.

The core city of Hanover is a preferred place to live for students. Many students also live in the immediate vicinity of their university, for example, in the urban district Hanover-Nordstadt; however, neighboring districts are also inhabited comparatively often (Unicum, 2015). In Hanover, students mainly live in rented flats (40 per cent) – with or without a partner or children. The fact that only six per cent of students live in student dormitories is striking. On average, 18 per cent of respondents live at their parents' accommodation, and 35 per cent live in a shared flat (Schirmer, 2017).

A total of approximately 1,178,316 persons have registered their primary residence in the Hanover Region, with 542,393 of these primary residences being registered in the city of Hanover. There are also 24,495 people in the Hanover Region with a registered secondary residence, with 12,093 of them registered in the city of Hanover. This means that approximately 2 percent of the inhabitants of the Hanover Region have a secondary residence (Region Hanover, 2019). A good tenth of the student population (eleven percent) has two registered residences (Schirmer, 2017).

Quantitative online survey

With the help of an actively recruited, quantitative online survey, students of the Faculty of Architecture and Landscape Sciences at Leibniz University Hanover were selected as a list-based sample (Baur, Blasius, 2014). The students of the faculty were surveyed as a non-representative sample of all students at the university location in Hanover (Flechtner, 2020). The online survey format ensures a high level of anonymity (Taddicken, 2013; Korn, 2018).

The survey was developed with the help of the “Limesurvey” survey software. It started with a welcome text briefly explaining multi-locality and the target group of the survey (students of the Faculty of Architecture and Landscape Sciences at Leibniz University Hanover). In addition, a contact e-mail address was given to which questions

could be sent in order to clarify any unclear issues. Participants had the possibility to answer any question with “no statement” or add “other” in free text. Almost all questions had predefined answers, meaning that the survey could be completed quickly. The survey had been checked in a pretest, during which various people filled in the questions on a sample basis (Kirchhoff et al., 2003). Afterwards, the structure, conclusiveness, formulations and coherence were adjusted and revised. The structure of the survey was based on previous research and followed a survey of multi-local students according to Kramer (2015, 2020), resulting in the division of the questionnaire into four main categories: housing and reporting behavior, infrastructure, leisure behavior, and change in behavior due to the COVID-19 pandemic.

The section on housing and reporting behavior began with the following question: “How many accommodations do you regularly stay at? What are the reasons for using the different accommodations?” Respondents were given the option to indicate the number and multiple reasons for each accommodation. In addition, respondents were asked for the zip code of their accommodations and where they were officially registered. Furthermore, they were asked how they live in their respective accommodations. The section also included questions about the length of time that respondents stay at their respective accommodations. Finally, respondents were asked how long they usually stay at each accommodation.

The section on infrastructure began with a question about the means of transport used to and from Leibniz University Hanover. In addition, respondents were asked how much time they need to travel from their accommodation to Leibniz University Hanover and how much time they need to travel between their accommodations. Furthermore, respondents were asked to indicate what could be improved in the city of Hanover and the surrounding area for those living in various accommodations. The section also included questions about the use of urban green spaces and forests in Hanover.

The section on leisure behavior contained questions about how often respondents used hairdressers, doctors, pharmacies, post offices, and grocery shopping at their accommodations or went shopping for small goods, books, hi-fi equipment, furniture, and clothes. In addition, respondents were asked to name their engagement in various clubs or organizations at the respective accommodations. Furthermore, they were asked how often they participated in the following range of leisure activities: visits of family members or friends, cultural or sports events, dining establishments, discotheque/dance events, going for walks, and shopping.

The section on change in behavior due to the COVID-19 pandemic started with a question about how their multi-local lifestyle changed due to the COVID-19 pandemic. They could also answer why their lifestyle changed.

In the final section, respondents were able to state their gender, year of birth, family status, their study program, and semester at the Faculty of Architecture and Landscape Sciences. In addition, they could enter the amount of money they had

available per month in their budget, whether they work during their studies, and the country where they got their university entrance qualification. The questionnaire closed with a thank you.

The survey was carried out from 12 June 2020 through 5 July 2020. For this purpose, the Faculty of Architecture and Landscape Sciences students were contacted by email. The enrollment office of Leibniz University Hanover informed them about the research project and invited them to participate in the survey. In addition, the call for participation was disseminated on social media. The quantitative online survey has been evaluated with the “IBM SPSS Statistics” statistical analysis software using a coding procedure. For this purpose, the data was checked for errors and cleaned (Kuckartz, Ebert, Rädiker, Steffer, 2009). The participants’ answers were quantitatively processed, and different answers were intersected with one another in cross-tables.

Multi-locality of students at the Faculty of Architecture and Landscape Sciences

The following section presents the socio-demographic data of the respondents, followed by a discussion of the survey results regarding housing, leisure behavior and engagement, and the effects of the COVID-19 pandemic.

Socio-demographic data of the respondents of the survey

A total of 341 students took part in the quantitative online survey, with 252 completing the questionnaire in its entirety. 242 questionnaires were evaluated after data cleaning. 77.7 percent of the respondents identified as female and 20.2 percent as male, 0.4 percent identified themselves as gender-diverse, and 1.7 percent made no statement. The average age of the respondents is 25 years, with the youngest student being 18 years old and the oldest student being 48 years old. Around 55.3 percent of respondents were born between 1996 and 1998. Furthermore, 55 percent of the students stated that they were in a steady partnership, 36 percent were single, and 2.1 percent were married or in a registered partnership. Around 27 percent of the students were in their first or second semester of study, 26 percent in their third or fourth semester, 19 percent in their fifth or sixth semester, and 12.4 percent in their seventh or eighth semester of study. 34.3 percent of the respondents have 601-800 euros a month at their disposal for living expenses, 16.9 percent report having 801-1000 euros, and 16.5 percent 401-600 euros. Approximately 87 percent of the students acquired their higher education entrance qualification in Germany and 5.4 percent outside Germany (1.2 percent in China, 0.8 percent each in Iran and the Czech Republic, 2.6 percent are distributed among Croatia, Ecuador, India, Luxembourg, Russia, and Spain).

Multi-local living and housing

How many accommodations do students regularly stay at? Overall, 78.1 percent (189 students) of all respondents live multi-locally. Of these, 43 percent live in two accommodations and 25.6 percent in three accommodations. Officially, 53 percent of all respondents are registered at their primary accommodation and 18.9 percent at their second accommodation (see Figure 1). Overall, about 80 percent of multi-locals are officially registered and appear in the statistics. Younger multi-locals (born 1995 to 2000) usually have two accommodations, and older respondents (born 1996 to 1999) have three accommodations or only one accommodation (mono-locals). The percentage of respondents living as multi-local students at the Faculty of Architecture and Landscape Sciences at Leibniz University Hanover is significantly higher than the 11 percent statistically recorded for the city of Hanover (Schirmer, 2017).

Moreover, the survey results also exceed the findings of other studies; for example, the analysis of Austrian statistics found that 30 percent of students are registered as multi-local (Zeilinger, 2017), and the study of students at the Institute of Technology in Karlsruhe found that 25 percent of students lived multi-locally (Kramer, 2015). However, one reason for this difference may be because Kramer (2015) studied the reporting behavior in Karlsruhe and the surrounding area, while this study considers all accommodations and is not limited to Hanover and its region.

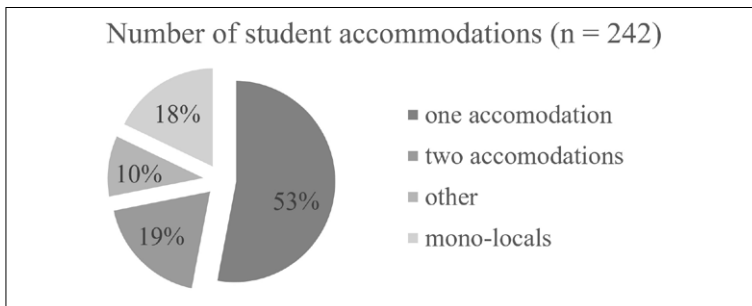


Figure 1: Number of student accommodations. Source: own illustration.

What are the reasons that students gave for using different accommodations? The primary accommodation is mainly chosen because of studies (30.7 percent of respondents), but also due to family (16 percent of respondents) or friends (10.3 percent of respondents). 7.5 percent choose their primary accommodation because of a partnership, and 7.2 percent because of emotional ties to the accommodation. The second accommodation is chosen mainly for family reasons (27.9 percent of respondents) but also because of partnership (15.3 percent of respondents), studies (12.6 percent of respondents), or friends (11.7 percent of respondents). Students still seem to be quite connected to their families and friends and don't wish to give up their primary accommodation completely – and thus live multi-locally.

Where are the accommodations located and what sort of accommodations do they live in? 95 percent of students' accommodations are located in Germany, 3 percent in Europe, and 2 percent outside Europe. 71 percent of their accommodations are located in Lower Saxony. As far as types of accommodation are concerned, 36.4 percent of the students use a shared flat as their primary accommodation, 27.3 percent their parents' accommodation, 21.9 percent live with a partner, and 9.1 percent live alone (see Figure 2). Female respondents mostly live in shared accommodations (32.4 percent) or with their parents (28.2 percent), whereas male respondents indicated that they live primarily in shared accommodations (49 percent). Data about second accommodations demonstrate that 37.2 percent of the respondents live with their parents, 10.7 percent in a shared flat, and 7.9 percent with their partner, and 3.7 percent live alone (see Figure 3). Students therefore prefer to share living space rather than live alone – in both of their residences. The reasons for this were not asked, but it is probably also for financial reasons and not necessarily directly due to the specific desire not to live alone.

Similar results were found in the study by Kramer (2015): 41 percent of surveyed students live in shared apartments while 13 percent live in student dormitories, presumably because more student dormitories are available in Karlsruhe than in Hanover. It must also be considered that students from all degree programs were surveyed in Karlsruhe while only students of the Faculty of Architecture and Landscape Sciences were surveyed in this study. Therefore it must be considered that interest in a student dormitory may be lower among students in the faculty than among students specializing in other subject areas. A study conducted by Othengrafen et al. (2021) in rural areas has likewise made it clear that students also turn to temporary forms of accommodation such as holiday homes during periods when there is a lack of suitable accommodation. This temporary renting for more extended periods of time is an opportunity for property owners to intermittently rent out vacant living space. Therefore, student dormitories or other forms of temporary accommodation and affordable housing are important for cities for they attract students as the young generation as potential newcomers that may stay longer than the course of university study as well as other target groups (e.g., people with low income). Property owners, employers, universities, and other urban actors can benefit from these target groups as new residents.

How long do students stay at their accommodations? Respondents with two accommodations often have one at their home/primary residence and one located near the university. This allows them to avoid the time commitment and potential stress of a daily train or car journey of several hours' duration. However, proximity between the two accommodations may encourage students to switch between the accommodations regularly and at shorter intervals – for example, every week or every 14 days during weekends. These patterns of multi-local living stem from a desire to see family or friends regularly; respondents most often state that they shift between their accommodations

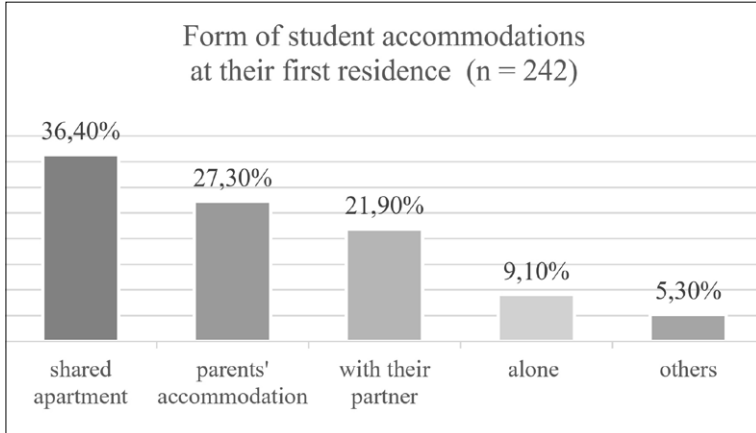


Figure 2: Accommodation of students at their primary residence. Source: own illustration.

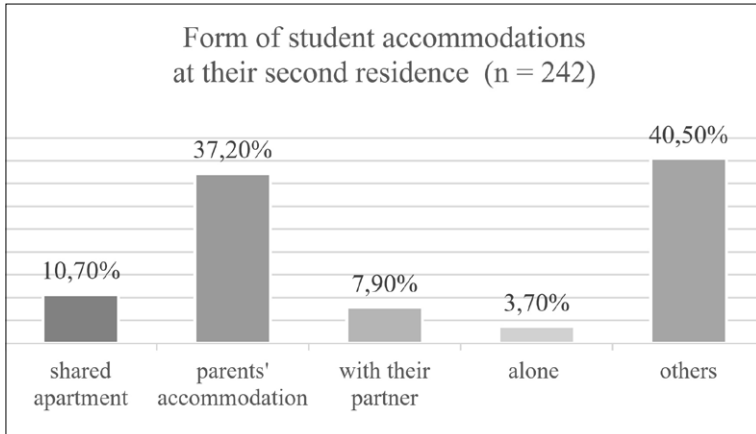


Figure 3: Accommodation of students at their second residence. Source: own illustration.

due to their family or friends. Another study also confirmed that multi-local living in two accommodations, at the university site and in the hometown, is students' most common form of multi-local practice (Kramer, 2020: 284).

During the lecture period, 75.7 percent of the multi-local respondents (n = 143 multi-locals) stated that they would stay at their primary accommodation at least once a week, 9 percent do so at least once a fortnight, and 6.9 percent at least once a month. 38.1 percent of the surveyed students stay at their second accommodation at least once a week, 16.9 percent at least once every 14 days, and another 22.2 percent at least once a month. More than half of the respondents (64.4 percent) visit their primary accommodation at least once a week during the lecture-free period. Another 15.9 percent visit their primary accommodation at least once every fortnight, and 14.3

percent at least once a month. More than a quarter of the participants (31.2 percent) visit their second accommodation at least once a week during the lecture-free period, 27 percent at least once a fortnight, and 23.8 percent once a month. When comparing the frequency of visits and lengths of stay at accommodations during the lecture periods and the lecture-free periods, it is noticeable that there is a slight change in leisure time behavior regarding visiting family members. Some respondents, for example, no longer switch to weekly visits to their parents during the lecture-free period but instead to fortnightly visits – and then staying with the family for more extended periods of time. Kramer (2015), Zeilinger (2017), and Fischer (2020) also came to a similar conclusion in their studies. They also observed that students detach themselves from their parental home as they progress in their studies (Kramer, 2015; Fischer, 2020) and move into a shared apartment, for example (Kramer, 2015). Although the data does not provide clear results on this topic, this trend can also be seen in the survey data of this paper. For example, students from the 5th and 6th semesters onwards more often live alone or with their partners. One reason for this could be that they have found new friends and leisure activities at their accommodation near their place of study. Furthermore, it can be assumed that students are more interested in breaking away from their parental home as they grow older to build a more independent life.

Leisure behavior

The surveyed students were asked which means of transport they use to travel to the university and how long it takes them to travel between accommodations. They mostly travel to the university from their primary accommodation and not, for example, their second or third accommodation. They mostly use a bicycle (28 percent) or public transport such as urban railways, trams, subways (27.5 percent), and trains (13.8 percent) (see Figure 4). Their answers depict that they really live in Hanover – they spend a lot of time there and are not just temporary guests. Their use of the city infrastructure consequently renders them a target group for local transport at university sites.

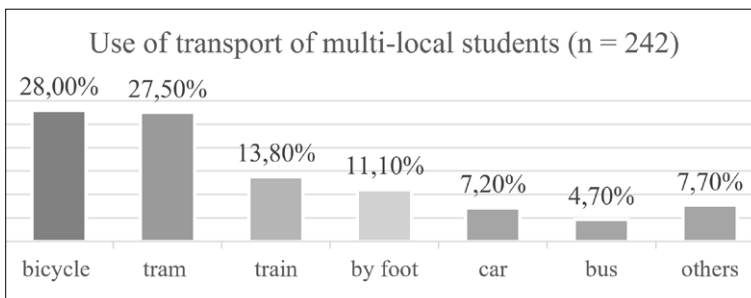


Figure 4: Use of transport of multi-local-students at their primary accommodation. Source: own illustration.

How often do respondents use existing services in the vicinity of their places of accommodation? Although students usually have their primary accommodation at the place of study and spend much of their time there, they rarely use services there such as hairdressers. They also only sometimes (33.5 percent) or rarely (35.1 percent) visit doctors near their primary place of accommodation. However, this can also be attributed to the overall low demand for doctors; only 3.3 percent of the students visit doctors very often. The responses on the use of pharmacies also provide similar results. However, it is noticeable that demand for these services falls in the case of the second accommodation. Only 18.6 percent of students sometimes visit pharmacies near their second residence, and 15.3 percent never do. Larger purchases are made very often near their primary residence by 33.9 percent of students and often by 26.4 percent. They thus make such purchases significantly less often near their second place of residence. In a similar vein, food, drinks, and small daily necessities are also bought by 55 percent of the students at the primary accommodation, and less often at the secondary one. Other items like books, CDs, and DVDs are rarely purchased at any location. On the other hand, clothes are mostly bought at the accommodation located near the university and less often at the secondary accommodation. Students at their primary accommodation mostly visit their family or friends in their free time. Less time is dedicated to available cultural events: for example, 22.3 percent of those surveyed seldom attend cultural events, and 40.1 percent sometimes do so. However, 16.5 percent use sports facilities very often, and 18.6 percent often. 30.2 percent of the students frequently visit gastronomic establishments near the university residence, and 16.9 visit very often. Thus, respondents still use services close to their primary accommodation that they have known for a long time – from their life before being a student. Many students thus continue to visit a familiar doctor or hairdresser and do not immediately switch to others at their second accommodation. However, it can be assumed that this will change over time because some students (particularly in their later semesters of study) shift their focus in greater part to their lives near their university, which is primarily frequented for daily needs and other purchases as well as use of corresponding infrastructure and services.

Engagement

How engaged are the surveyed students in various clubs and organizations? The survey showed that 39.2 percent of students are not engaged at all in the places where they live (see Figure 5). The more accommodations they have, the lower their level of engagement. If students are engaged, they mostly do so in sports clubs (23.6 percent in their primary accommodation and 12.5 percent in their second accommodation). Kramer (2015) was also able to confirm this in her study: students prefer to be engaged in sports clubs, followed by cultural, music, theatre, and dance clubs. Interest in local politics and citizens' initiatives is also very low among the respondents. Kramer (2019: 286) explains that the accommodation at the university site is a "biographical transit station"

because the students only stay there for a short time. For this reason, they participate less in their district’s social and political life than families or pensioners who have their permanent center of life there. Political processes or the concerns of citizens’ initiatives, for example, may go on for several years, sometimes lasting longer than the students’ accommodation on-site. Hence, students’ motivations to participate are very low. Kramer (2019) emphasizes that student participation in projects is more likely to succeed if they extend over shorter periods of time and can be implemented as promptly as possible. In summary, students become less engaged the more accommodations they have and clearly focus on their interests during their engagement.

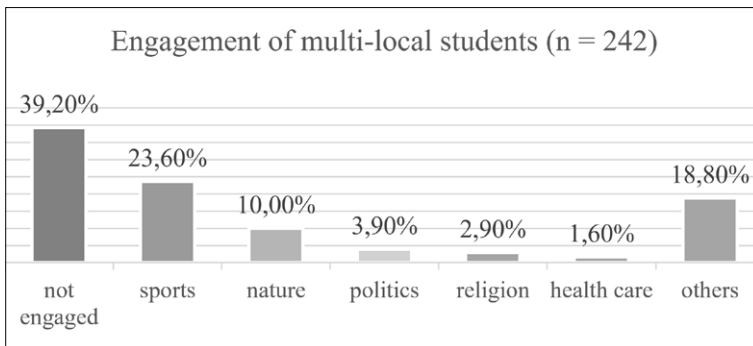


Figure 5: Engagement of multi-local-students at their primary accommodation. Source: own illustration.

Impact of the COVID-19 pandemic

How did the COVID-19 pandemic affect student multi-locality? Survey questions addressed the housing behavior of students during the COVID-19 pandemic, focusing on student accommodations, frequency of use, and whether students gave up their multi-local lifestyle during the pandemic. Furthermore, questions focused on ascertaining why their behavior changed during the pandemic. Survey results show that compared to the situation before the onset of the pandemic, 32.6 percent of surveyed students stayed at individual accommodations longer, 11.3 percent reported shorter stays at individual accommodations, and 12.1 percent of the respondents stayed at only one accommodation during the pandemic. For 25.3 percent of the students, travel between accommodations was also less frequent due to the pandemic. 3.6 percent of the respondents had even given up one of their accommodations due to the pandemic. Only 7.9 percent of the students were not affected by pandemic-related changes (see Figure 6). The study by Neises (2021) confirms these trends, showing that many students reduced the frequency of commuting between their places due to the pandemic, staying more often instead at their primary place of residence (near their place of study). However, the duration of their stay at their residences hardly changed (Neises, 2021).

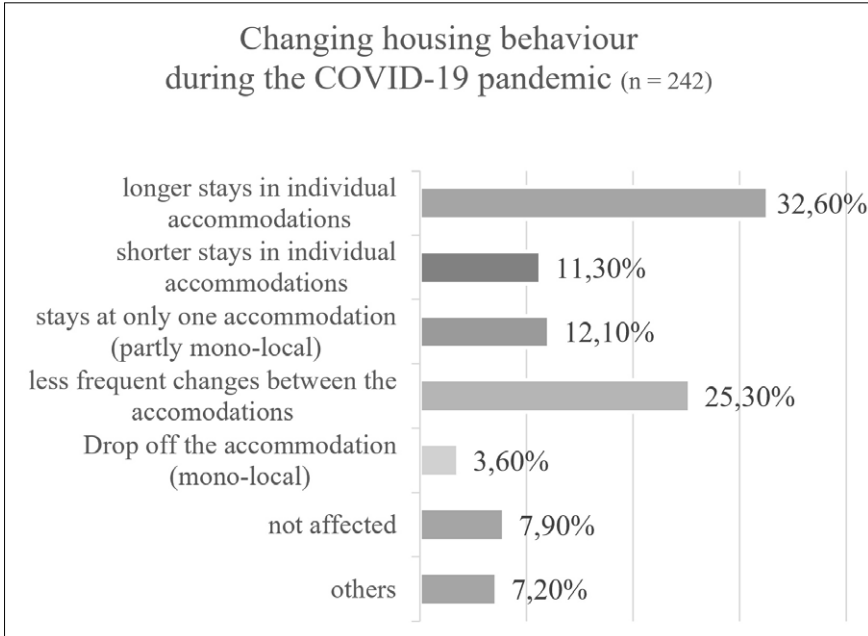


Figure 6: Changing housing behavior during the COVID-19 pandemic. Source: own illustration.

How long did students stay at their accommodations? During the COVID-19 pandemic, more than half (68.3 percent, n = 143 multi-locals) stayed at their primary accommodation at least once a week, 9.5 percent stayed at their primary accommodation at least once a fortnight, and 10.1 percent at least once a month. 36.5 percent of respondents visited their second accommodation at least once a week during the COVID-19 pandemic, 16.4 percent went at least once every fortnight, and 19.6 percent stayed at their second accommodation at least once per month. Therefore, students tended to stay longer at their primary residence and less often at their secondary one during the COVID-19 pandemic. They left Hanover more often and did not stay that long at their place near the university. In addition, comparable research (Neises, 2021) demonstrated that compared to before the pandemic, the number of people living in student dormitories increased from 6.2 percent to 8.1 percent of respondents. Furthermore, more people lived in shared accommodations (from 41.0 percent before the pandemic to 42.9 percent during the pandemic), and fewer people lived with their parents or grandparents (31.1 percent before the pandemic and 26.7 percent during the pandemic). According to respondents, the main reasons for the changes during the pandemic were time-consuming travel, quarantine regulations, and border controls (Neises, 2021). As a result, university cities temporarily lost a number of inhabitants during the COVID-19 pandemic, as these stayed at their accommodations longer, which means alternative accommodations were vacant for brief, but not extensive amounts of time.

Why did the behavior of students change due to the COVID-19 pandemic? The main reason for the shifts in (housing and living) behavior given by 19.1 percent of the students was the closure of the university buildings and the obligation to study at a distance. In addition, 17.1 percent preferred to live in an accommodation with a garden during the pandemic, and 14.1 percent cited the possibility of working independently of the workplace during the pandemic. Another 14.1 percent wanted to spend time with their relatives during the pandemic, and 13.6 percent wished to avoid using public transport, which is why they changed their (housing and living) behavior (see Figure 7). In particular, respondents who only stayed in one accommodation because of the pandemic cited avoiding public transport as the main reason for their change in housing behavior (54.4 percent). The reasons for changing behavior make it clear that the surroundings and circumstances at the places of residence can influence students' housing decisions since many students left the city when the university buildings were closed. Most students came back once university buildings were re-opened and on-site lectures resumed. Furthermore, good living conditions such as green surroundings or possibilities for healthy travel are important for students. However, Neises (2021) also concluded that for most students, it is an independent lifestyle or the availability of leisure activities that led to respondents' changed housing and living behavior – and not primarily the difficulties in commuting caused by COVID-19.

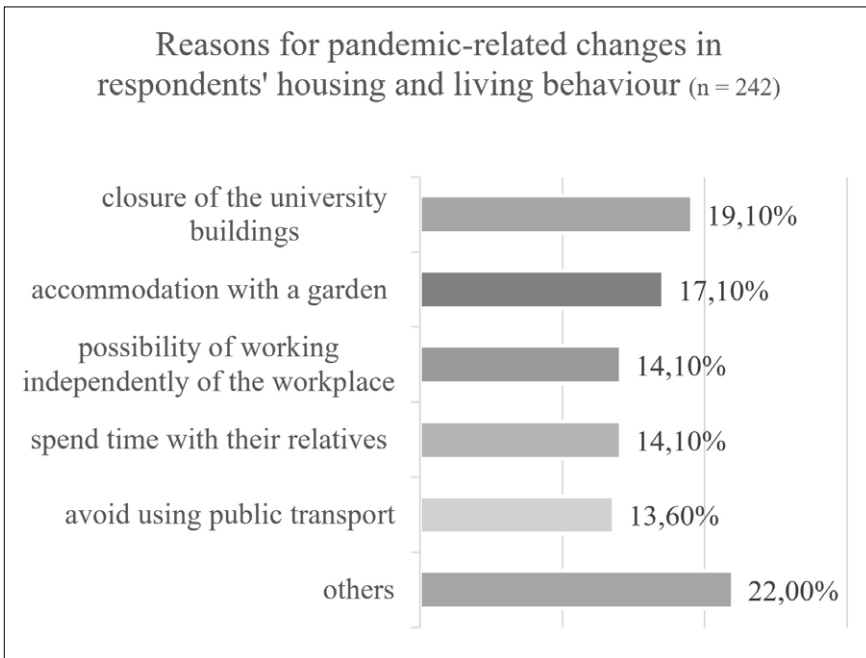


Figure 7: Reasons for pandemic-related changes in respondents' housing and living behavior. Source: own illustration.

Multi-local students and spatial development

In Germany, it can be assumed that at least 10 percent of all students live multi-locally (Middendorff et al., 2017). The number is far greater in the case study of the Faculty of Architecture and Landscape Sciences (78.1 percent, or 189 students). Even though students usually only live at their residence near the university for the duration of their studies (or mostly during the lecture period) and are thus “temporary residents of a city” (Kramer, 2019: 285), they are an attractive target group for spatial development and municipalities. They can represent both a challenge and an opportunity for cities and municipalities. For example, the migration of students can lead to brain drain (Fischer, 2020). At the same time, multi-locals can represent potentially committed people and provide impulses for urban life (Kramer, 2021).

Approximately 71 percent of student accommodations are in Lower Saxony. The majority of the accommodations located near the university in Hanover are shared flats or accommodations shared with a partner. According to students, their accommodations should be as centrally located as possible – in or close to the city center (Weichhart, 2009; Zeilinger, 2017). They should also be comparatively small (1-2 rooms) and, if possible, furnished (Zeilinger 2017; Othengrafen et al., 2021). In Germany, most of the cities hosting a university already have student dormitories; however, some municipalities leave students to the housing market, which makes it difficult to find a place to stay. In Hanover, places in student dormitories are highly competitive and the supply of small flats is also limited. Students, therefore, need help to find suitable and affordable housing. Some cities in Germany have already responded to the demand for small apartments for young professionals (ARL, 2016) by constructing student dormitories. However, housing capacities in the city of Hanover must be increased to meet the demand. In addition, student residences already convert into flats and hotels during the lecture-free period to avoid flat vacancies (Zeilinger, 2017). For example, the youth hostel in Hanover offers long-stay rentals for students (Youth Hostel, 2023). Due to the financial situation of students, most of whom have low budgets, it will also be necessary for municipalities and (in cooperation with) investors to create affordable housing in the future (Reuschke, 2020). Suitable measures for students include the conversion or construction of small flats and different available housing options consisting of shared rooms, single-room apartments and flats in boarding houses – such as those offered by the city of Hamburg for multi-locals in HafenCity (Greinke, Lange, Othengrafen, 2020; Menzl, 2020). In addition, investments by municipalities or private investors in boarding houses with small residential units and additional services (such as laundry services etc.) could be an option (Greinke, Lange, Othengrafen, 2020). Another example are the so-called boarding houses that were developed to cover the needs of multi-local persons (employees and students) in rural areas in lower Saxony (e.g., <https://diepholzer-boardinghouse.de/>). Finally, cooperative initiatives can also be

a possible solution: for example, the housing society can cooperate with universities and private investors to create suitable and affordable housing for students.

Students are a target group for local transport near universities because they mostly travel by tram or bus, thus increasing the need for transport services and contributing to additional traffic burdens (Weichhart, 2020). However, the city of Hanover and the Hanover region already offers a good network of local and long-distance transport that provides multi-local students with suitable options for their mobility needs. The existing semester ticket enables students to use local transport at affordable prices. From May 2023 onwards, it is possible to extend this ticket with a comparatively low-priced *Deutschland ticket* for local transport throughout Germany. For 49€ per month, people can travel the entire local and regional train and bus network across the country. Furthermore, students spend their free time with family, friends, and acquaintances that they also invite to visit them at their university location, and the increased demand could even contribute to the city's revitalization (cf. Leubert, 2013). Students' guests can bring additional purchasing power to municipalities, helping revitalize ('abandoned') city centers.

Overall, students tend to be less engaged in their localities and are also less interested in local politics and citizens' initiatives (Dittrich-Wesbuer, 2016; Kramer, 2019). However, some respondents are engaged in sports clubs or other activities. Due to their fluid lifestyles, students usually have limited free time at any given location. This raises numerous questions, including which new formats of participation and communication suit multi-local lifestyles and how temporary presences and absences can be sufficiently considered in urban governance (cf. Dittrich-Wesbuer, Plöger, 2013; Dittrich-Wesbuer, 2016; Danielzyk, Dittrich-Wesbuer, 2020). Multi-local students are residents of municipalities, and therefore the number of people who are potentially available for voluntary participation in the city also increases (cf. Leubert, 2013). Kramer (2019) emphasizes that the participation of students in projects is more likely to succeed if these extend over a shorter period of time and can be implemented as promptly as possible. For example, some good practices exist with dual memberships in football clubs or dual memberships in the fire brigade. This allows multi-locals to be active in two associations and thus be engaged in two places. In addition, the exchange between multi-local and mono-local people, suggested by Menzl (2020), could be important for good neighborly arrangements in the city of Hanover. A combination of the two ways of life could even cross-stimulate each other. Small-scale approaches can be beneficial, because individual neighborhoods represent an important (social) unit for consideration (Dittrich-Wesbuer, Plöger, 2013).

The COVID-19 pandemic influenced the (housing and living) behavior of the students, who stayed for longer periods at their different accommodations. These longer periods have positive potential impacts for cities and places. For example, students can become more deeply engaged and they use infrastructures more often. This can help clubs and

organizations fulfill their citizens' involvement and can stabilize a system where fewer people are available. At the same time, longer stays at certain accommodations mean longer absences at the other ones, creating the opposite effect at other sites. If such durations extend in scope, they can create problems for cities as accommodations are rented but not used frequently, resulting in 'ghost accommodations' that are inhabited 'on paper' but used only for limited periods. Therefore, it is necessary that university cities build healthy environments with enough green spaces and healthy travel options for all inhabitants. This will ensure that students come back after a pandemic or stay longer during other crises by providing an attractive setting for them.

Multi-local students mostly reside at their residences near their place of study in phases: however, their travel between their accommodations decreases during the study period. In addition, students in later years of study are less likely to switch between accommodations and are more likely to stay at their place of study. This may result in them – together with their guests – generating a stronger demand for services and helping revitalize urban settings and, indirectly, promoting the city (cf. Leubert, 2013) – even if they only live there for limited periods. Furthermore, students living for longer periods near their place of study may even decide to shift to a mono-local lifestyle. Therefore, multi-local students represent a potential for municipalities that should not be underestimated. However, it is necessary to offer students diverse forms of support (e.g., central and small accommodation, good public transport, project based engagement) so that for they may become more engaged in local life.

Conclusion and outlook

Almost all age groups and social classes exhibit multi-locality or multi-local living. Students in particular are among those populations that live multi-locally. The COVID-19 pandemic affected (and still affects) students by abruptly establishing new forms of work (e.g., home office, virtual and distance learning, closing of university buildings). This paper presents an analysis of the impact of COVID on the multi-locality of the students of Leibniz University Hanover and identifies its effects on spatial development. The case study focuses on housing, leisure behavior, infrastructure, and the COVID-19 pandemic.

“University sites are places of multi-locality” (Zeilinger, 2017: 116), with students being “temporary residents of a city” (Kramer, 2019: 285). At least 10 percent of all students in Germany live multi-locally (Middendorff et al., 2017). 78 percent of the respondents studying at the Faculty of Architecture and Landscape Sciences at Leibniz University Hanover identified as multi-local, which is a significantly higher number than the 11 percent statistically recorded for the city of Hanover (Schirmer, 2017). Moreover, the percentage also exceeds those recorded in other studies, including the

30 percent of multi-local students registered in Austrian statistics (Zeilinger, 2017) and 25 percent of survey respondents that are multi-local at the Institute of Technology in Karlsruhe (Kramer, 2015).

Given the significant percentage of students that live multi-locally, students represent both a challenge and an opportunity for spatial development and municipalities – and should thus be included as a target group in spatial planning (Kramer, 2019, 2021). The creative potential of students can help them become impulse generators and (future) residents of a city (Kramer, 2021). As students, they get to know a place during the course of their study that they can learn to appreciate in the future; thus, students can be seen as an opportunity for municipalities that are interested in attracting new residents (Greinke, 2020). This makes them a relevant target group for the housing market in particular (Dittrich-Wesbuer, 2016; Danielzyk, Dittrich-Wesbuer, 2020) as well as for other areas and topics related to spatial planning.

In the future, more studies will be necessary to better assess the development of multi-local lifestyles and gain detailed data. Including students from other study programs into research on this topic is essential to determine possible similarities or differences. Furthermore, surveys could be conducted with other social groups to understand the range of multi-locality, which in turn could serve as the basis for further recommendations for the future spatial development of Hanover that can be adapted to multi-local lifestyles. Research and case studies in other cities would also be useful, especially because multi-locals reside in several cities, creating possible synergies and impacts in the different locations.

The COVID-19 pandemic has changed the housing and living behavior of students. In addition, commuting between locations was reduced in some cases due to numerous reasons, including the closure of university buildings and the introduction of distance learning. The survey respondents seemed to be predominantly ‘weekend multi-locals’, staying at university residences during the week and with their families on weekends. The university area in Hanover is primarily frequented for daily needs, with also other purchases and the corresponding infrastructure and services being used accordingly. Students tend to be less engaged in organized social activities with the exception of sports clubs. The COVID-19 pandemic strongly influenced the survey respondents. The survey demonstrated that there were changes in the frequency and duration of visits to the various accommodations, the abandonment of a few accommodation facilities, and weaker use of public transport. These changes had (in)direct effects on multi-local lifestyles.

In regard to the spatial development of the city of Hanover, it became clear that multi-local lifestyles are a significant issue that should be addressed in spatial planning and development to balance out the gap between demand and supply. It should be mentioned that the administrative bodies of Germany have hitherto not paid much attention to the subject. However, the survey shows a need for action, especially in

the case of housing issues. There needs to be a greater number of small and affordable apartments in the city of Hanover and other cities in Germany. Promoting the integration and participation of multi-locals in spatial policy and planning is also important. Spatial planners can utilize existing information about multi-local lifestyles to prepare and adapt to their expected positive and negative effects. Therefore, it is necessary to address multi-locality in spatial planning practice in more detail and collect data in comprehensive sets.

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Multilokalnost študentov med pandemijo covid-19 in njeni učinki na prostorski razvoj: kvantitativna študija primera na Univerzi Leibniz v Hannoveru

Multilokalnost ali multilokalno življenje pomeni življenje na dveh ali več krajih hkrati. Številne študije ugotavljajo, da je multilokalni način življenja razširjen skoraj v vseh starostnih skupinah in družbenih okoljih (Hilti, 2013; ARL, 2016; Oberösterreichische Akademie, 2019), vse pogostejši pa je pri študentih (Kramer, 2020). Ta analiza se osredinja na študente, stare od 18 do 29 let, saj ta starostna skupina predstavlja velik delež tistih, ki v Nemčiji živijo multilokalno (Dittrich-Wesbuer, Sturm, 2020).

Pandemija covid-19 je opazno vplivala na študente, saj je nenadoma uvedla nove oblike (po)uče(va)nja (npr. Bartik idr., 2020; Bick idr., 2020), vključno s prehodom z neposrednega poučevanja na virtualno učenje oz. učenje na daljavo, ter omejila stike in dostop do univerzitetnih stavb, kar je močno vplivalo na življenje študentov (Neises, 2021). Avtorica analizira vpliv covid-19 na multilokalnost študentov Univerze Leibniz v Hannoveru in prepoznava njegove učinke na prostorski razvoj.

Predstavlja analizo kvantitativne raziskave študentov Fakultete za arhitekturo in krajinske vede. V raziskavo je vključila nereprezentativni vzorec vseh študentov na lokaciji univerze v Hannoveru (Flechtner, 2020). Na podlagi prejšnjih raziskav o multilokalnih študentih (Kramer, 2015, 2020) se je spletna anketa, ki so jo reševali študenti, osredinila na štiri glavne teme: nastanitev, infrastruktura, vedenje v prostem času in pandemija covid-19.

Obraunavani rezultati temeljijo na 242 vprašalnikih. Na splošno 78,1 % (189 študentov) vseh anketirancev živi multilokalno. Od tega jih 43 % živi v dveh nastanitvah, 25,6 % pa v treh. Uradno je 53 % anketirancev prijavljenih v svoji primarni nastanitvi, 18,9 % pa v drugi.

Rezultati ankete so pokazali, da je pandemija covid-19 spremenila stanovanjsko in bivalno vedenje študentov. Poleg tega se je v nekaterih primerih zmanjšala pogostost potovanj med lokacijami, predvsem zaradi zaprtja univerzitetnih stavb in prevlade študija na daljavo. Študenti so za svoje vsakdanje potrebe uporabljali univerzitetno bivališče v Hannoveru, vključno z nakupi in uporabo dane infrastrukture in storitev. Anketa je pokazala, da so multilokalni študenti praviloma manj angažirani, če pa so, so večinoma dejavni v športnih klubih.

Avtorica na primer multilokalnih študentov obravnava izzive in priložnosti za prostorski razvoj občin. Študenti lahko s svojim ustvarjalnim potencialom kot (bodoči) prebivalci mesta dajejo pobude za urbano življenje (Kramer, 2021). Pri razvoju prostorske politike je pomembno upoštevati multilokalne posameznike, saj lahko prostorski načrtovalci na podlagi razpoložljivih informacij pripravijo in prilagodijo ustrezne razvojne strategije.