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Is the ‘student city’ lost? The rhythms of Lodz as a consumption-oriented student city through the COVID-19 pandemic lens

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Keywords

Student city, Rhythmanalysis, Consumption, COVID-19, Lodz.

Abstract

The COVID-19 pandemic calls into question the hosting of students as an urban growth formula after the spread of online education. Therefore, we look at Lodz, Poland, to understand how student cities operate during the pandemic and gain insights into their futures. We unfold the pre- and intra-pandemic rhythms of students' presence and activities in Lodz's time-space and their attitudes toward the post-pandemic future. We show that the pandemic spurred many students to escape from Lodz and changed the activities of those staying in the city by limiting their frequencies and locations. However, we expect students to repopulate Lodz, although its post-pandemic existence might evolve through further rhythm changes. Moreover, it will depend not only on the students' demand for higher education *per se* but also for collective consumption opportunities. Therefore, the pandemic itself does not seem to render the idea of a 'student city' obsolete in the long term.

Introduction

The growth of higher education (HE) marked the pre-pandemic decades (Calderon, 2018). As HE enrolments increased, university cities the world over became massively populated by students. Therefore, some scholars started to employ the ‘student city’ label (van den Berg & Russo, 2004) to describe cities that host student populations. Simultaneously, cities transformed into nodes of consumption (Jayne, 2006; Miles, 2012), and some specialised in meeting students’ consumer needs and whims. Indeed, students became consumer bases for a wide range of businesses operating in cities, and attracting and hosting students thus became a ‘booster’ of neoliberal urban restructuring (França et al., 2021). The significant role that student consumption played in urban growth was expressed by Chatterton (2010), who coined the term ‘consumption-oriented student city’.

However, the COVID-19 pandemic seems to call into question the hosting of students as an urban growth formula. In brief, due to the restrictions established to fight the spread of coronavirus, face-to-face classes at universities were cancelled and substituted with online teaching (Mironowicz & Schretzenmayr, 2020). Indeed, during the pandemic time, students were given an opportunity to continue their education remotely from a wide range of locations. Consequently, the prior need for students’ physical presence in university cities diminished, so HE has been ‘delocalised’, in a way. This might have changed the economic, spatial, and temporal ways that student cities operate, at least in the short term. Nevertheless, the COVID-19 pandemic’s impacts on cities that host student populations remain neglected in the literature, although the pandemic has already generated volumes of papers regarding urban phenomena (Sharifi & Khavarian-Garmsir,

2020), and it has covered some student perspectives (e.g., Bánhidi & Lacza, 2020; Calvo et al., 2021; Morris et al., 2021; Prada-Trigo et al., 2021).

Therefore, in this work, we look at Lodz to understand how student cities operate during the COVID-19 pandemic and gain insights into their futures. In doing so, we found inspirations in rhythm analysis and time-geography, and we conducted empirical research into the rhythms of students' presence and activities in Lodz's time-space. We compare the pre- and intra-pandemic patterns and sketch the post-pandemic scenario. Therefore, we follow the suggestions of Klapka et al. (2020) and Keil (2020) to employ spatiotemporal thinking to discover potential changes initiated by the pandemic.

We begin with a literature review on student populations in cities and the phenomenon of urban rhythms. Next, we describe our methodology. We then move to a presentation of the results. More precisely, we show the changes in the cyclical (annual) rhythms of students' presence in Lodz, as well as the changes in the linear (monthly) rhythms of their activities. Additionally, we attempt to foresee the post-pandemic future for both rhythms, reflecting upon the students' declared preferences. Finally, we discuss our findings to address the issues of the student-led urban restructuring debate.

The literature

The rise and fall of the 'consumption-oriented student city'?

The decades before the COVID-19 pandemic were marked by multifaceted urban restructuring. More precisely, policymaking in cities focused on paving the way for a new, post-industrial economy. In doing so, cities were usually looking for growth opportunities other than manufacturing, mainly tertiary industries of different sorts, from

specialised producer services, through education to consumer services (Shaw, 2001; Krätke, 2015). However, a crucial issue in understanding the pre-pandemic restructuring of cities is not just the sectoral change of their economies; it is also the ‘philosophy’ of governing cities, which was practised predominantly in a neoliberal way. Different facets of neoliberal cities have been already evaluated (e.g., Rossi, 2017), but we stress two of them considering the scope of this paper. First, the pre-pandemic neoliberal approach to cities perceived them as market-centric arenas; thus, urban life in its entirety was commodified (Miles, 2012). Second, growth-oriented neoliberal urban governance paid much attention to attracting and exploiting exogenous, mobile resources (investments, visitors, etc.) to boost local economies. In this fashion, neoliberalism redirected urban policymaking priorities towards competing for capital injections from outside cities (Deas & Headlam, 2015).

Simultaneously, the concept of the knowledge economy gained attention and momentum. In short, it highlights the need for the effective production and exploitation of knowledge to gain a competitive advantage by both individual companies and entire territories, such as cities. Therefore, prior to the COVID-19 pandemic, the knowledge economy concept stimulated the HE sector to ‘produce’ high-quality human capital and led to a substantial rise in HE enrolments (Moos et al., 2019; Sokołowicz, 2019). In fact, never have so many young people been studying at university than at the beginning of the 21st century (Calderon, 2018). Since universities are rooted in particular locales (Harris & Holley, 2016), their anchoring feature changed the demographics of their host cities. More precisely, university cities experienced inflows of young people, which resulted in students becoming sizeable populations in a relatively short time (Sage et al., 2012). However, these inflows of students were also a result of changing mobility discourse.

Briefly put, neoliberal societies promoted mobility and expected the youth to be ambitious in planning their life progress by moving away to university cities for educational opportunities (Mærsk et al., 2021).

Moreover, the advent of the pre-pandemic neoliberal agenda in cities was matched by the growth of the leisure economy. The popularisation of consumer lifestyles paved the way for the mushrooming of numerous leisure and entertainment venues (Jayne, 2006). However, although cities had always been havens for pleasure-seekers, the connection between consumption and urban development was enhanced even more. In essence, local authorities started to transform their cities into exciting places to visit, live and, above all, consume (Miles, 2012). Indeed, they allocated resources to consumer amenities to boost urban growth by attracting more people, whether for a short visit or permanent residence.

The literature provides useful terms to describe new types of cities that emerge as a consequence of the processes mentioned above. Some scholars employed the ‘student city’ label (e.g., van den Berg & Russo, 2004; Sokołowicz, 2019; Author, 2020a) to describe cities that host sizeable student populations. However, because in this paper we perceive students as urban consumers, we pay closer attention to the narrower label of ‘consumption-oriented student city’ formulated by Chatterton (2010). Drawing from his perspective, we understand a consumption-oriented student city as a specific form of the neoliberal city driven by students’ consumption. Chatterton (2010, p. 511) argues that students became a ‘lucrative, sizeable, and dependable consumer population’ that constitutes a base for the ‘student urban service sector’, i.e., the entertainment, leisure, and retail venues that service the students in these cities. Therefore, the emergence of

student cities can be viewed as an expression of the neoliberal urban restructuring towards the new economy with consumption and commodification as its themes.

Before the pandemic, consumption-oriented student cities seemed to have specific spatial and temporal characteristics. Firstly, concerning spatial characteristics, student consumption was usually concentrated in particular urban areas. More precisely, they were evidenced in city centres (Chatterton 1999; Murzyn-Kupisz & Szmytkowska 2015; Calvo et al., 2017; Gant & Terry 2017), next to university facilities (Chatterton, 2010), or in the neighbourhoods massively inhabited by students (Smith, 2005; Gu & Smith, 2020). Secondly, concerning the temporal characteristics, students' consumption patterns used to change over the year due to their dependency on the temporal frameworks constituted by universities, e.g., trimesters and semesters (Chatterton, 1999). Put simply, students' consumption would shrink during holidays when university cities experienced a temporal outmigration of these populations. All this implies that before the COVID-19 pandemic, the time-space of student cities was determined by the rhythmic patterns of the presence and absence of the youth. Therefore, student cities vividly exhibited one feature of post-modern urbanisation, namely a growing dependence on a transient population, such as commuters, seasonal workers, or tourists (Martinotti, 1996).

Although some scholars have already made important comments on the 'seasonality' of student populations in cities (e.g., Ackermann & Visser, 2016; Allinson, 2006; Hubbard, 2008; Gu & Smith, 2020; Powell, 2016; Prada, 2019), it seems not to have been treated as a separate research topic yet. However, this issue should receive more scholarly attention because of the events emerging from the COVID-19 pandemic. Due to anti-COVID restrictions, face-to-face classes at universities were halted, sometimes entirely,

and online teaching spread on a vast scale as a substitute (Mironowicz & Schretzenmayr, 2020). Students thus gained the possibility to continue their education remotely from locations other than university cities. Therefore, we expect these processes to have collectively changed the spatiotemporal patterns of students' presence and consumption in these locales. However, the scale of COVID-related abandonment of student cities has not been precisely estimated yet. Together with the prior voices warning about the negative impacts of the decline of student populations on cities (Rokita-Poskart & Mach, 2019), the current pandemic raises an important question about the short- and long-term resilience of the 'student city' as an urban growth formula. Therefore, we have constructed a spatiotemporal analytical framework to address these issues.

Framing the 'consumption-oriented student city' in rhythm analysis and time-geography

In this paper, we focus on the rhythms of consumption-oriented student cities exemplified in the case of Lodz. Rhythms are employed as analytical attributes upon which cities and urban phenomena (e.g., socio-economic life, consumption, social mixing) and aspects of their change can be explored and understood (e.g., Mulíček & Osman, 2018; Tobiasz-Lis, 2016; Meij et al., 2021; Sun, 2022; Lískovec et al., 2021). However, studying urban rhythms requires perceiving a city not just as a spatial unit but also as a temporal one. In this light, different scholars have popularised such a city's time-space duality in recent decades, and these efforts seem to be channelled into two major streams, i.e., rhythm analysis and time-geography.

The first stream, rhythmanalysis, originates from the series of works by Lefebvre and Régulier, and Lefebvre alone, published in the 1980s and 1990s (Lefebvre, 2004). He notes that ‘everywhere where there is interaction between a place, a time and an expenditure of energy, there is rhythm’ (Lefebvre, 2004, p. 15). In his original view, the fundamental idea behind the rhythm is repetitions; without them, the rhythm cannot exist. In this light, Lefebvre distinguishes cyclical and linear repetitions. Put briefly, he perceives the cyclical repetitions as spanning for a longer time and then beginning anew. Although Lefebvre associates cyclical repetitions with some cosmic phenomena, he also gives clues to interpret them as repetitions of large intervals that impact social life over a long period. Indeed, he points out that ‘the cyclical is social organisation manifesting itself’ (Lefebvre, 2004, p. 30). Therefore, we interpret university terms, such as semesters or trimesters, as examples of cyclical repetitions since they organise students’ lives by attracting them to urban time-space, keeping them there for several months, and finally releasing them to restart this sequence again soon. Consequently, such social organisation also institutionalises the life of university employees, local entrepreneurs, and other members of urban society. Moreover, the beginnings of university terms are often ceremonial events, and thus significant temporal markers. On the flip side, the linear repetitions are shaped by reproducing the same phenomenon at similar but shorter intervals (Lefebvre, 2004). Thus, in our view, their examples in student life are classes, meetups, parties, or ‘going-outs’, which recur within cyclical university terms.

Despite the significance of Lefebvre’s contribution, he ‘evoked, but hardly explained’ many issues of rhythmanalysis (Crang, 2003, p. 187). Therefore, studies of urban rhythms were concretised by other scholars. Firstly, geographical research into rhythms benefited from implementing the ‘chronotope’ concept from literary studies. A chronotope is

conceptualised in the literary studies as a bundle of time and space, ‘which interlinks present people, processes and activities into a single, interpretatively convenient time-space unit’ (Mulíček & Osman, 2018, p. 4). Therefore, the ‘chronotopic’ attitude to time-space focuses on the description and analysis of cyclical change. In the words of Mulíček et al. (2015, p. 323), this change is ‘most frequently determined by alternating states of presence and absence of individuals and associated processes and activities’. In this respect, a chronotope seems an applicable unit of a student city’s rhythm analysis, considering the students’ presence and the spatiotemporal distribution of their activities.

Secondly, studies into urban rhythms implemented the concept of ‘pacemakers’. They are ‘collectively recognised, often institutionalised, and especially solid rhythms indicators’ (Mulíček et al., 2016, p. 117). Therefore, pacemakers structuralise the rhythms of individuals, social groups, or entire cities. This view is amplified by the remarks developed within the sociology of time. For instance, Lewis and Weigert (1981), addressing issues of social organisation, provided a typology of social times, distinguishing a self, an interaction, and an institutional time. In essence, they associate self time with individual activities, interaction time with informal interactions between individuals, and institutional time with the formal activities of individuals who are members of an organisation. Therefore, individual and collective activities are subordinated by the institutional sphere, i.e., schedules and rules of organisations. In this light, a university as a social organisation is a pacemaker example since it institutionalises students’ rhythms in a city by scheduling their classes and setting them in particular locations. This way, it also imposes a spatiotemporal framework for students’ individual and collective activities.

However, as Lískovec et al. (2021) stress, everyday urban life is a polyrhythmic ensemble. Indeed, different social groups in the same city might live different rhythms, harmoniously or not. In this context, there are grounds to think that the pre-pandemic spatiotemporal patterns of student life were a source of social conflicts in some cities. For instance, studentified neighbourhoods used to host noisy student activities incompatible with traditional households' lifestyles (or, speaking in spatiotemporal terms, unsynchronised with their rhythms) (Sage et al., 2012).

Time-geography, the second stream, was established by Hägerstrand and further developed by him and his colleagues, the so-called Lund School (Lenntorp, 1999). In this framework, individuals of the same kind, who stay in a particular area for a particular time, together form a 'population system' (Thrift, 1977). Students who live in a university city can be therefore perceived as such a population. In its essence, time-geography focuses on repetitive and incidental activities that individuals conduct in time-space (Ellegård, 2019). Furthermore, to perform activities, individuals must be present at the right time in the right place, so they constantly move in time-space. To deal with this phenomenon, time-geography employs 'stations' as analytical units, where the individuals stay to perform activities (Klapka et al., 2020). For example, accommodation, university, a shop, or a pub are examples of stations relevant to student life. However, individuals often encounter 'constraints' – in time-geography terminology – in performing their desired activities. This issue gains importance in the pandemic context, since numerous restrictions on socio-economic life were established to fight the spread of the coronavirus (Klapka et al., 2020).

Considered together, rhythmanalysis and time-geography highlight the need to think in a spatiotemporal way, and they are concerned about the time-space activities of individuals who form the populations. Therefore, drawing from this complementarity, we link the concepts developed in these two streams to study the rhythms of Lodz as a consumption-oriented student city. More specifically, while we follow the rhythmanalysis in constructing our analytical framework, we also implement some time-geography concepts to structuralise our empirical evidence.

Methodology

In our study, we aim to reflect upon the student city as an urban growth formula through the lens of the COVID-19 pandemic. In doing this, we try to answer two questions. First, what short-term changes did the COVID-19 pandemic bring for students' presence and consumption in their host cities? Second, to what extent will these changes impact student cities in the long term? To these ends, we look at Lodz, Poland, and employ the concepts of rhythm, chronotope, and pacemaker popularised by rhythmanalysis to frame our study. However, to fill this framework with empirical evidence, we deal with data on the activities of student populations that occur at stations, so we add concepts that originate from time-geography. More precisely, we analyse two types of urban rhythms: the cyclical (annual) rhythms of students' presence in Lodz and the linear (monthly) rhythms of their activities in the city. We consider these activities spatiotemporally by studying their distributions in Lodz's time-space and using this evidence to construct two chronotopes, i.e., the pre- and intra-pandemic. However, our focus is not on these rhythms themselves. Instead, we study them to gain an understanding of possible pandemic changes of the phenomenon that is a 'student city' and the logic behind it. Following this

rationale, we also look at students' declared preferences regarding consumption activities and education modes to gain insights into the post-pandemic future of a 'student city'.

Our data comes from two surveys, each pilot-tested, organised before and during the COVID-19 pandemic. The first survey was conducted between March 2017 and February 2018 among 1059 full-time, domestic students of all six public higher education institutions (HEIs) operating in Lodz. The surveyors at the HEI facilities asked students to fill in the anonymous, individual, paper questionnaire. Participation in the survey was strictly controlled to reflect the student population structure across the HEIs. More precisely, the surveyors were verifying two student attributes, i.e., their education level and their assignment to the HEIs' faculties (departments), before inviting them to complete the questionnaires.

Due to the pandemic restrictions and the online teaching in force, we conducted the second survey through an online questionnaire. This time we limited the survey to the students of the Lodz's largest HEI, namely the University of Lodz (UniLodz). The web survey was promoted in the UniLodz newsletter and mailings and on social media. However, to avoid multiple answers from the same individuals and answers from random Internet users, we created an authentication mechanism that required the participants to log in with their official UniLodz account. Despite this mechanism, we ensured anonymity. In total, 507 full-time domestic students participated in the second survey in January and February 2021.

As the two surveys were conducted in different ways, extra steps were necessary to make the datasets comparable. The first issue to address was the surveyed population. Because only UniLodz students participated in the second survey, we filtered the first survey

database to keep only the records provided by UniLodz students. This limited the first sample to 576 records (Table 1, Column A). The issue was the structure of the samples. The structure of the first survey sample was representative, even after filtering the records, due to the successful control by the surveyors. Because such control was not available in the online survey, the second survey resulted in under- or overrepresentation of some student groups in the sample (Table 1, Column B). Therefore, we weighted this sample to adjust its structure to the actual structure of the population (Table 1, Column C). In weighting the data, we followed the same two attributes used for sampling control in the first survey, but we employed the updated documentation on the student population structure from the UniLodz office. Collectively, these two actions provided us with the appropriate basis to compare the results of the first and the second surveys.

[Table 1 near here]

Both questionnaires covered questions on the students' presence and consumption activities in Lodz. It is important to note that the questions upon which we build our core evidence remained unchanged between the surveys to ensure comparability of the responses. However, because of the pandemic context, the second survey questionnaire included additional questions on the changes in students' activities and their preferences for the post-pandemic future.

We carried out the data analysis using two software packages. First, we analysed the closed-ended questions in SPSS. Then we explored the open-ended questions in NVivo, coding the students' responses by station categories, locations, and frequencies of use.

Local and national context of the study

Lodz as a student city

Lodz is not a traditional university town, but a former manufacturing hub that has transformed itself into a university city. Due to the leading role of the textile industry in Lodz's growth in the 19th century, the city is usually labelled the 'Polish Manchester'. And like its English counterpart, Lodz suffered deindustrialisation, but as a result of Poland's transition from a socialist to a capitalist economy in the early 1990s. At the time, the city faced the abrupt bankruptcy of its main source of income, the textile industry, and the municipality had limited resources to act against the consequences (Walker, 1993). Therefore, the first phase of Lodz's restructuring was about luring exogenous (often foreign) capital. More recently, however, the restructuring vehicle became municipal policies that promoted infrastructural mega-projects supported by EU funding (Author et al., 2020).

Although the consequences of deindustrialisation are still palpable in Lodz, the manufacturing decline also started the city's economic reinvention. As Lodz-insiders, we also think about the change our city went through in spatiotemporal categories. While we do not have empirical evidence to support this view, we perceive Lodz's recent restructuring as similar to that in Brno, Czechia, captured by Mulíček et al. (2016): after the collapse of socialism, the city was marked by a shift from manufacturing toward service-oriented industries, and the consequent diversification of its rhythm.

HE is one of the beneficiaries of Lodz's restructuring, and it is now a prominent sector of the local economy. HE in Lodz consists today of six public and 13 private HEIs (Statistics

Poland, 2021). The public HEIs started operations in Lodz quite recently, in the post-WW2 period, due to the socialist modernisation programme of the city. One of its legacies is the UniLodz campus located on the north-east edge of Lodz's core (Author et al., 2021). The HE sector in Lodz accelerated in the 1990s and early 2000s with the Polish HE boom (Sokołowicz, 2019). However, Lodz's recent transition into one of the largest university cities in Poland can be labelled a 'tacit' change, since it seems to be more a result of the entrepreneurial attitude of local HEIs taking advantage of the education boom than an intentional and strategic policy of the municipality (Author et al., 2020). After years of booming student enrolments, their number at Lodz's HEIs decreased, although they have recently stabilised.

Today, the city has a population of nearly 680,000; about 45,000 full-time students are enrolled in its public HEIs, while another 20,000 study part-time or are enrolled in private HEIs (Statistics Poland, 2021). Therefore, through scheduling the lives of so many people, for years, local HEIs have been important local pacemakers, taking over this role from the former factories. Consequently, before the COVID-19 pandemic, the sizeable population of students contributed widely to Lodz's economy since students were important consumers and employees of the local leisure scene. Venues popular among students are concentrated mostly in the centre, along Ulica Piotrkowska, the high street and historical axis of Lodz's core, where the first traces of commercial studentification were evidenced (Author, 2021).

The pandemic reality

The COVID-19 pandemic started in Poland in early March 2020, and as in many other European countries, Poland went into socioeconomic hibernation due to the lockdown

introduced by the government (Krzysztofik et al., 2020). The HEIs were immediately closed, and teaching transferred to the Internet. Most Polish HEIs, including UniLodz, continued online education as the primary mode of teaching till the end of September 2021. Indeed, the government decided to keep the majority of HEIs closed, although the original lockdown was cancelled. Some HEIs (or selected departments) then returned to face-to-face classes. During these months, other economic sectors, such as gastronomy and retail, experienced periods of loosened and re-established restrictions due to the changing infection rates (Grochowicz, 2020).

This context is of importance for our research because we ran the second survey in January and February 2021. However, we asked students to delineate their activities as conducted between October and December 2020 due to the relative stability of the anti-COVID restrictions at the time. It was also a period of the second COVID-19 ‘wave’ in Poland, with daily infection rates peaking at around 25,000 cases in mid-November. Therefore, the operations of leisure venues (e.g., clubs, pubs, cafés, cinemas, theatres, gyms, fitness clubs, swimming pools), were suspended, except for the first few days in October. Retail venues continued operating until mid-November, when only shops selling essential products remained open (Medonet, 2021). Simply put, the possibilities of pre-pandemic consumption patterns were highly limited. The restrictions were (temporarily) loosened in February 2021.

Results

The cyclical (annual) rhythms of students' presence

We begin the analysis by looking at the cyclical (annual) rhythms of students' presence in Lodz. In this paper, the students are considered 'present' in the months they declared that they lived in Lodz, whether permanently or temporarily, or commuted regularly. In this light, a very high percentage of students' presence marked the pre-pandemic time-space between October and June. By contrast, their presence shrank by half during July, August, and September (Figure 1). This pattern is explained by the organisation of the academic year: the shrinkage was correlated with the summer break when no classes took place. Therefore, our evidence indicates the pre-pandemic rhythm of students' seasonal presence in Lodz expressed by their inflows in October and their outflows in July.

[Figure 1 near here]

As in previous years, 2020 started with a similar pattern of students' presence in Lodz. However, in March, the share of students who declared that they were present in the city dropped to 85.2%. It was the first month of the COVID-19 pandemic in Poland, with the consequent closure of universities and the beginning of remote education. The following months brought an even larger decline, with just half of students present in April, May, and June. In a way, the 'summer mode' occurred three months earlier than usual and covered six months spanning from April to September. The rate of students' presence in Lodz partly recovered in October, at the beginning of the new academic year, reaching 62.2%. Despite this recovery, the rate in October, November, and December was around one-third lower than usual. A limited number of students decided to reside in Lodz or to

commute when the pandemic and online education continued. Therefore, the rhythm of students' presence in Lodz in 2020 differed greatly compared to previous years.

To better understand this change, we explore our dataset by differentiating the respondents by their geographical origin (Figure 1). More precisely, we divide them into local and non-local students. The former are students who had lived in Lodz prior to their studies, while the latter are those who had lived elsewhere. In this light, it is evident that most local students continued their presence in the city in 2020 despite the spread of the pandemic. In contrast, the presence of non-local students dropped below 30.0% shortly after the restrictions were announced and remote education started. Put simply, the change in students' presence rhythm in Lodz in 2020 was driven predominantly by the non-locals' abandonment of the city.

The linear (monthly) rhythms of students' activities

To shed more light on the changes the COVID-19 pandemic brought for Lodz, we also analyse the linear (monthly) rhythms of students' activities occurring during their cyclical presence in this city. Since our research is framed within the idea of the 'consumption-oriented student city', we focus mostly on venue-based consumption. To analyse students' activities, we gathered empirical evidence; however, we did this more straightforwardly than is practised in the field of time-geography. In short, we did not chart students' movements in Lodz's time-space in the form of the 'paths'. Instead, we asked them to render temporal and spatial dimensions of their activities in the twelve categories of 'stations' by choosing from pre-defined options. First, regarding the temporal dimension, the students assessed the frequencies of particular activities. Next, they assessed the spatial dimension by specifying the area they used for these activities.

However, only those students who declared that they undertook particular activities regularly (i.e., at least once per month) were asked to provide these details. This way, we collected spatiotemporal evidence to reconstruct the pre- and intra-pandemic patterns as two comparable chronotopes (Figure 2).

In the light of our evidence, the pre-pandemic rhythm of student life in Lodz consisted of three sets of activities of distinct spatiotemporal characteristics. First, on a regular or very regular basis, i.e., at least once per month or much more frequently, the students went shopping for food at supermarkets, hypermarkets, and corner shops, and they visited public greenery. Half of the students were also regular visitors to sports venues, such as gyms, fitness clubs, and swimming pools. All these activities took place predominantly around the students' homes/accommodation (understood in our study as parental homes, rented rooms or flats, or halls of residence). Moreover, homes/accommodation were the very frequently used stations because of serving as places for meetings with friends. Secondly, venue-based consumption, i.e., in pubs, cafés, cultural venues, or fast food outlets or restaurants, was also popular among students.

Although particular forms of venue-based consumption differed in frequency, it was concentrated in the very centre of the city. Ulica Piotrkowska, in particular, was the students' 'chain' of stations to 'go out'. As one of our respondents recalled: '[...], I used to meet up with my friends "in the city" at least once a week. At weekends, we visited clubs, pubs, and restaurants'. Another respondent looked back to the pre-pandemic reality this way: 'Every Tuesday we would eat out with friends in Manufaktura's [commercial centre] food court'. Therefore, the students' venue-based consumption was a kind of rhythmised social ritual. Thirdly, although some of the students' activities also took place

near UniLodz's education facilities, these locales hosted mainly eating habits, especially in student canteens. Additionally, an extremely popular activity among the students was doing non-daily shopping, such as clothing or electronics, but the stations hosting this activity were dispersed across Lodz's space.

[Figure 2 near here]

The pandemic transformed the rhythm of student Lodz remarkably. The changes are most explicit in the areas that host UniLodz's educational infrastructure. With the cancellation of face-to-face classes, the students lost the reason to undertake most of their activities in these areas. As UniLodz's infrastructure is organised to a great extent in the form of a mono-functional campus, the loss of the student population led to its partial abandonment. Similarly, the students' venue-based consumption, once concentrated in the city centre, also plummeted. On the one hand, it was a direct consequence of the anti-COVID restrictions on leisure and entertainment. On the other hand, before the pandemic, students also visited the centre when travelling between their homes/accommodation and UniLodz facilities. Therefore, the cancellation of face-to-face classes also contributed to the students abandoning the city centre. Nevertheless, the very few students who continued visiting stations such as pubs, cafés, cultural venues, restaurants, and shopping centres during the pandemic still chose the city centre for these activities.

At the same time, the neighbourhoods inhabited by the students maintained their relevance for shopping and even gained importance for visiting sports venues. Our evidence also shows that fast food outlets near students' homes/accommodation became more popular venues for their consumer choices. However, because of the anti-COVID restrictions in force, these venues were not usually visited in person. Rather, the local fast

food restaurants served as their primary source of meal ordering since similar venues in Lodz's centre, once popular among the students, often did not offer deliveries to remote locations or took too long to deliver. Moreover, some students claimed that ordering meals from their favourite gastronomic premises was their way of supporting local businesses during the pandemic. Finally, spending leisure time in public greenery remained popular near students' homes/accommodation and served as one of the very few substitutes for their pre-pandemic exuberant lifestyles. Indeed, when commenting on the pandemic reality, one of the respondents described the role of public greenery for intra-pandemic activities in simple terms: 'There is nowhere to go out; the only place is a park'. This evidence allows us to conclude that the pandemic deprived students of highly commodified urban environments, i.e., the privately-owned, commercial venues that they liked to visit before. However, it did leave them access to public greenery (mostly parks), i.e., a public good, which became for some a kind of 'lifeline' during the months of the severe anti-COVID restrictions.

Simultaneously, homes/accommodation served as stations used intensively by students during the pandemic. Firstly, students practised home-based leisure that did not require face-to-face contact with people not from their households. Therefore, the pandemic routine of our respondents consisted to a great extent of the self time activities. Their everydayness was thus similar to the early-pandemic patterns of student leisure reported elsewhere (Bánhidi & Lacza, 2020). Secondly, however, our evidence shows that students trapped at home/accommodation actively looked for face-to-face contact with their peers. Consequently, despite the progress of the pandemic, homes/accommodation continued to host students' meetups and functioned as stations for their interaction time. On the one hand, their meetings at homes/in accommodation were less frequent when compared to

the pre-pandemic ‘normalcy’, but on the other hand, these meetings took on new forms. For instance, our respondents claimed that they had ‘domesticated’ café talks and cinema screenings by hosting friends or visiting them. Intriguingly, those students who missed more intense meetups found ways to avoid the anti-COVID restrictions of limiting the number of people able to meet one another at home. One of our respondents described it this way: ‘[...] you need to contrive to find a proper place to organise a larger party. In my case, it was even the dentist’s office owned by my mum [...]’. Such a phenomenon is reminiscent of the ‘hidden rhythmicities of survival’ revealed recently by Preece et al. (2021) in the pandemic context.

However, some students were less optimistic about the new rhythmicity of pandemic life. For instance, one respondent expressed her perspective this way: ‘Before this mistake called “the pandemic”, I used to go out to clubs, toured across Poland and the world, enjoyed life; cinema, attractions of different sorts, some evenings eating out with friends in restaurants. Every day something was going on, and now? Each and every day, I sit in front of the computer; I meet up with friends on Fridays or Saturdays, but what else? There is nowhere to go out, just eating, sitting in cars or houses, with nothing more to live for than this. In all of that, at least I have all my friends in one place [...]’. We stop here to focus on the last issue covered in her comment. In a way, she was lucky to have all her friends ‘in one place’ despite being a non-local student. In contrast to her, many non-locals who had left Lodz and returned to their hometowns found it challenging to maintain interactions with their peers. As one of them confessed, ‘[...] I live away from Lodz, so my social life has collapsed’. Thus, the constrained pandemic opportunities for socialisation and consumption, such as home meetups, were often available only for the local youth staying in Lodz.

However, the COVID-19 impact on Lodz's rhythms was more profound than merely solidifying the division between local and non-local students by keeping the former in the city and the latter out. The pandemic also reshaped the relations between the rhythms of some social groups who continued their stay in Lodz. In the context of our research, it manifested itself mainly in the difficulties students faced doing shopping. Numerous students reported they were unable to shop as flexibly during the pandemic as they had done before due to the 'senior's hours' (godziny dla seniora). This Polish-wide anti-COVID restriction aimed to minimise the risk of infection among the elderly by creating a safe shopping environment that limited the elderly's interaction with younger populations. Therefore, when our study was being conducted, only customers over 60 were allowed to use supermarkets and hypermarkets, corner shops, pharmacies, and post offices on weekdays between 10:00 AM and 12:00 PM. Consequently, students had to adjust their shopping activities, although, for many, this time of the day was the most convenient, as expressed by one of our respondents: 'Unfortunately, I have the most time for shopping during the senior's hours, so I have to do shopping after 09:00 PM'. This issue shows that the new rules of socio-economic life introduced during the COVID-19 pandemic established a spatiotemporal segregation by age, impacting the rhythms of individuals and entire social groups (at least student groups, since the non-student perspective remains unexplored for us).

Foreseeing the post-pandemic future

One of the key issues circulating among scholars since the coronavirus outbreak is the post-pandemic future. Facing this issue, we asked our respondents to assess their preferences for the forms, frequencies and locations of their activities in the post-

pandemic reality. They could choose between going back to the pre-pandemic patterns, keeping the intra-pandemic patterns, or modifying them. In doing this, we did not determine a precise 'post-pandemic' timeframe. Instead, we referred simply to the foreseeable moment when the pandemic will end. Figure 3 presents the students' preferences distributed by the three categories of activities.

[Figure 3 near here]

If the respondents' declarations come true, the post-pandemic rhythm of Lodz will be marked by students returning to their pre-pandemic leisure activities. First, the vast majority (79.3%) wish to return to the frequencies and locations of visiting clubs, pubs, cafés, and cultural and sports venues, doing non-daily shopping, and having home meetups. Secondly, the students imagine their use of gastronomic venues in a similar way, since the majority (64.8%) are eager to return to the pre-pandemic patterns. It would mean the return of eating out with friends and fewer deliveries. Next, of the 8.9% and 7.1% of students who said they would modify their leisure and gastronomic activities, respectively, the majority intend to increase them in the post-pandemic future. As one of the respondents declared: 'I will be doing what I used to do before the pandemic, but 100 times more, for sure'. Therefore, our evidence leads us to expect the post-pandemic rebirth of the Lodz's centre due to the students' return to collective, venue-based consumption. That said, assessing the dynamics of adjusting to the post-pandemic reality remains tricky because some of our respondents would opt for a speedy intensification of social life. In contrast, others highlight their need to get used to the post-pandemic reality after the months of home isolation.

The students stated they would prefer to keep retail activities in the intra-pandemic mode for the post-pandemic future. More precisely, most students (64.9%) would prefer to keep their shopping activities at corner shops and supermarkets or hypermarkets as exercised during the pandemic. In short, the students have realised that they do not have to shop as frequently as before and that purchasing basic products next to their homes/accommodation is a convenient way of doing shopping.

[Figure 4 near here]

However, as the pandemic has already demonstrated, online education in HE has become possible and widespread. Therefore, we also asked our respondents to specify the preferred mode of education in the post-pandemic future (Figure 4). The results are ambiguous, although a marginal number (2.6%) do not have a preference. 11.6% of the students would opt to continue online teaching, i.e., the education mode in force at UniLodz since the outbreak of the pandemic. Intriguingly, almost identical shares, i.e., 43.2% and 42.6%, prefer, respectively, traditional (face-to-face) education and hybrid education (which combines traditional and online education).

Discussion

COVID-19 and the assumptions behind the ‘student city’

The experience of the COVID-19 pandemic, exemplified in our chronotopic evidence on Lodz’s changing rhythmicity, allows us to reflect on two assumptions behind the ‘student city’, namely the availability of student customers and the ‘anchorness’ of universities.

Firstly, a ‘student city’ can be viewed as a formula of urban growth grounded in the assumption that a city can attract and host mobile populations of student consumers and

capitalise on their local expenditures (França et al., 2021). However, the pandemic has already reminded us of an inherent but somewhat forgotten feature of students as an urban population: their transience. Indeed, even before the coronavirus crisis, some researchers commented on this feature by drawing attention to students' seasonal presence in cities and its consequences (e.g., Allinson, 2006; Hubbard, 2008; Gu & Smith, 2020; Powell, 2016). Yet, since the pre-pandemic student immigrations to cities and outmigrations from them were highly regular, it was possible to anticipate their recurring presence and absence in the urban time-space and adjust the local economic structures accordingly (e.g., as in the examples provided by Ackermann & Visser, 2016; and Prada, 2019). However, our evidence from Lodz demonstrates that the current pandemic has abolished such a rhythm. More precisely, with the outbreak of the pandemic and the rapid shift to online education, a large share of UniLodz students decided to leave the city and continue their education remotely. As a result, the pre-pandemic label of students as 'dependable' consumers for the commercial premises that operate in the local economy has been temporarily tarnished. This experience seems similar to that of tourist-oriented cities, which faced a downturn in the first months of the COVID-19 pandemic (Grochowicz, 2020).

Secondly, the pandemic events can also be interpreted from the perspective of universities as 'anchor' institutions (Harris & Holley, 2016), since they played a central role, whether implicit or explicit, in the pre-pandemic capitalising on students' educational mobility. In a way, universities acted not just as attractors of students, but also as one of the very few immobile and thus undeniable growth assets of cities in the neoliberal times. The constant presence of universities in cities, rooted in them for good and for ill, promised the ability to mitigate potential exogenous shocks, e.g., economic recessions (Goddard & Vallance,

2013). Such a role of UniLodz and the other Lodz-based HEIs proved itself during the city's post-socialist restructuring (Author et al., 2020). For decades prior to the pandemic, UniLodz successfully co-set the rhythm of its host city, fuelling the local economy with young customers by requiring its thousands of students be physically present in face-to-face classes in its facilities at a particular schedule. However, the COVID-19 pandemic challenged UniLodz's anchor role. Indeed, although UniLodz institutionalised its students' time during the pandemic by requiring them to participate in classes in virtual space, it did not institutionalise their location in the physical space of Lodz to the same extent as in the pre-pandemic times.

Collectively, these insights nuance the student mobility discourse in the urban context. The popular neoliberalism-saturated pre-pandemic conviction was that educational mobility benefited both young individuals and university cities. Non-local students started new social lives and gained professional perspectives while their host cities received an injection of exogenous customers. By contrast, local students who matriculated in their hometowns were perceived as 'worse-off'. Municipalities and HEIs might have seemed less interested in them since they were 'already there'. However, the recent experience of Lodz suggests this view should be reconsidered. In fact, the pandemic changed the relative positions of both the student populations and their roles in the local milieu. More precisely, although non-local students returning to their parental homes benefited from this move (e.g., their life costs decreased, parents shopped or cooked for them), they also reported the loss of social life and consumer experiences. At the same time, students remaining in Lodz proved to be 'better-off', as they had some opportunities to socialise and consume, though still highly constrained. By remaining in the city, they also sustained local consumption in Lodz, to some extent. Therefore, the

pandemic lesson to learn by municipalities is that beyond the focus on attracting non-local students, the ways local students benefit their cities should be acknowledged anew.

Is the 'student city' lost?

In the light of our evidence, the pandemic has thus firmly impacted Lodz in the short term. However, the crucial question scholars try to answer these days is what the post-pandemic city will look like (e.g., Batty, 2020; Keil, 2020; Florida et al., 2021). In the context of our study, the question arises: Are the changes spurred by the pandemic just a temporary arrhythmia, after which the rhythm of student Lodz will return to the pre-pandemic pattern, or did these changes initialise the formation of a new, post-pandemic rhythm? Although finding a basis to foresee post-pandemic scenarios is always difficult due to the dynamics of the pandemic, our evidence provides a sense of what may occur.

Firstly, although the pandemic spurred online teaching in HE, it seems that this mode will not become a widespread new 'normalcy'. We build this view based on our evidence that shows that just one in ten students would opt for online classes as their preferred mode of post-pandemic education. It is thus a reason to expect the students returning to Lodz will participate in face-to-face classes. Therefore, the permanent delocalisation of HE activities from student cities and their abandonment by youth does not seem a credible post-pandemic scenario. Put another way, HE currently seems to be one of those activities for which 'distanced interaction is not a full substitute', thus it will be 'eager to return face-to-face' (Florida et al., 2021, p.3).

Secondly, however, we must remember that education is not the sole constituent of student cities, since young people also used to flock to them to take advantage of the consumption and socialisation opportunities. In this regard, although the pandemic

experience of UniLodz students has demonstrated the value of homes/accommodation and public greenery as stations, and it changed some students' perspective on retail activities, students in general firmly declare a preference to return to the pre-pandemic rhythms of the majority of consumer activities, or even an eagerness to intensify them. These rhythms were based predominantly on venue-based consumption in pubs, cafés, cinemas, sports facilities, fast food restaurants and clubs, which served as stations of student socialisation. Therefore, these rhythms expressed a strong preference for commodified lifestyles built around collective consumption. Thus, students who are eager to return to this way of life will have to return to the time-space of Lodz. Indeed, their activities of the interaction time, intra-pandemically limited to homes/accommodation and parks, require a dedicated spatio-temporal framework of stations-venues for the post-pandemic future. Following this reasoning, we expect leisure and entertainment industries in Lodz, and mainly the venues located in the city centre, to reflourish after the students return.

Nevertheless, despite these arguments that support the post-pandemic recovery of student Lodz, its rhythms are likely to transform further since the idea of a university as a station, the use of which is inevitable to participate in HE, will be challenged to some extent. In the light of our evidence, almost half of UniLodz's students would prefer a hybrid form of education for the post-pandemic reality, i.e., a combination of traditional (face-to-face) and online modes. Such a preference might lead not only to the decreased use of the university's infrastructure but also to a general change in Lodz's rhythm. More precisely, as our intra-pandemic evidence shows, when not obliged to be physically present at university, there was no reason for the students to visit the leisure, gastronomic, or retail venues surrounding these facilities. Therefore, a post-pandemic future marked by hybrid

education ‘accustomisation’ might lead not just to the less intensive use of the educational facilities themselves, but also to the partial erosion of commercial infrastructure in and around them, such as canteens, pubs, cafés, fast food outlets, or sports venues. In other words, the role of university buildings as spatiotemporal anchors for other, commercial stations might be reduced. Therefore, this issue highlights the need to solve the common problem of university campuses’ mono-functionality, already discussed before the pandemic (e.g., Russo & Capel Tatjer, 2007). In short, Lodz’s insights should help foster the discussion among scholars and policymakers on how to reorganise university campuses for the new post-pandemic reality (Keil, 2020). On the one hand, they should make them attractive stations for students’ educational and non-educational activities. However, on the other hand, they should also transform them to host more diverse uses and users.

Conclusions

In this paper, we aimed to assess the short- and long-term consequences of the COVID-19 pandemic for student cities. In doing this, we applied the perspective of time-space duality to study the rhythm of Lodz. By comparing pre- and intra-pandemic chronotopes, we show that the COVID-19 pandemic has transformed the crucial elements that constitute this rhythm, such as the presence of students in Lodz, as well as the spatial and temporal dimensions of their activities. First, the transformation has been expressed by a substantial part of the student population escaping from the city. Second, the activities of the students who decided to stay in the city during the pandemic became less frequent and limited to a narrower range of locations. However, we expect a post-pandemic recovery

of the student population size, as well as its venue-based consumption and socialisation in Lodz's time-space.

Although Lodz is just one of many student cities across the world, the vast majority of student cities are in a similar situation, which makes this study relevant for the wider context. Therefore, transferring the Lodz experience to a broader scale, we suggest that the COVID-19 pandemic has transformed the rhythms of student cities in the short term. In doing so, it has called into question some of the taken-for-granted assumptions behind the 'student city' as an urban growth formula, such as the availability of student consumers and the anchorness of universities.

Nevertheless, we expect that in the long term, students will flock back to these cities to continue their consumer lifestyles. Indeed, we anticipate that the post-pandemic existence of student cities will depend not just on the demand for HE *per se* but also on the consumption and socialisation opportunities these cities will offer to students (perhaps even more than before). All things considered, the pandemic itself does not make the idea of a 'student city' obsolete in the long term. Therefore, it is hard to expect the end of the neoliberal approach to students as a resource for cities to capitalise on, no matter whether they have long university traditions or started to host students relatively recently. Consequently, we anticipate that student cities will prosper again after the pandemic, although their rhythms might continue to change due to the potential relevance of hybrid modes of education.

In closing, we identify four limitations of our study. Firstly, we focused solely on students, i.e., one sub-population of Lodz. Thus, to get a nuanced view of the pandemic's consequences for Lodz's rhythm in its entirety, a spatiotemporal examination also of the

other populations that inhabit this city would be beneficial. Secondly, we based our claims concerning the post-pandemic future on the students' declared preferences. As the pandemic is dynamic, so is its social perception, and the students' attitudes and preferences might change over time. Thirdly, our analysis covered just one city. Therefore, further research may re-examine our findings and anticipations at another time and in another space. Fourthly, our focus was solely on the COVID-19 pandemic's impact on student cities, while there may be other phenomena that might challenge the hosting of students as an urban growth formula in particular regions of the world (e.g., demographic trends). Since they were beyond the scope of this paper, they require closer consideration in future works. The last issue to arise is that we intentionally passed over the topic of student housing and residential studentification. Since it was hotly debated by scholars pre-COVID, it deserves a separate, in-depth analysis through the pandemic lens, as recently demonstrated by Prada-Trigo et al. (2021).

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Tables

Table 1. Samples sizes and structures

Sample		A) 2017-2018 Survey*	B) 2021 Survey	C) 2021 Survey (weighted)*
Sample size [n]		576	507	507
Students by education level [%]	Undergraduate	53.1	57.0	55.1
	Graduate	46.9	43.0	44.9
Students by UniLodz faculty (department) [%]	Faculty of Biology and Environmental Protection	4.7	12.4	5.2
	Faculty of Chemistry	1.9	6.5	2.9
	Faculty of Economics and Sociology	20.0	19.1	25.1
	Faculty of Educational Sciences	10.0	3.7	9.0
	Faculty of Geographical Sciences	6.1	2.2	5.2
	Faculty of International and Political Studies	6.3	1.4	4.7
	Faculty of Law and Administration	10.2	2.6	6.7
	Faculty of Management	15.5	8.7	13.9
	Faculty of Mathematics and Computer Science	4.7	7.1	3.8
	Faculty of Philology	16.1	35.1	18.0
	Faculty of Philosophy and History	3.5	0.8	2.8
	Faculty of Physics and Applied Informatics	1.0	0.4	2.7

* The samples used for comparative analysis.

Figures

Figure 1. The cyclical (annual) rhythms of students’ presence in Lodz / Source:
Calculated by the authors based on the survey research. Note: All values are given
in percentages.

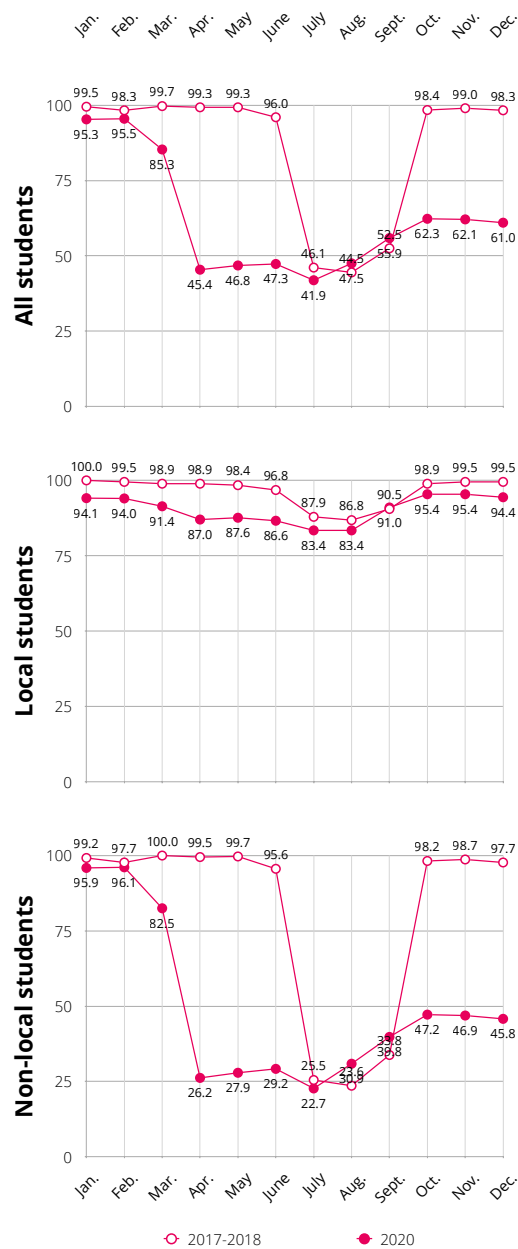


Figure 2. The chronotopes of linear (monthly) rhythms of students' activities in Lodz /

Source: Calculated by the authors based on the survey research. Note 1: As expressed in the example, the spatialities were provided by students declaring they undertook particular activities regularly (i.e., at least once per month). Note 2: All values are given in percentages. For readability, responses lower than 7.0 are not labelled.

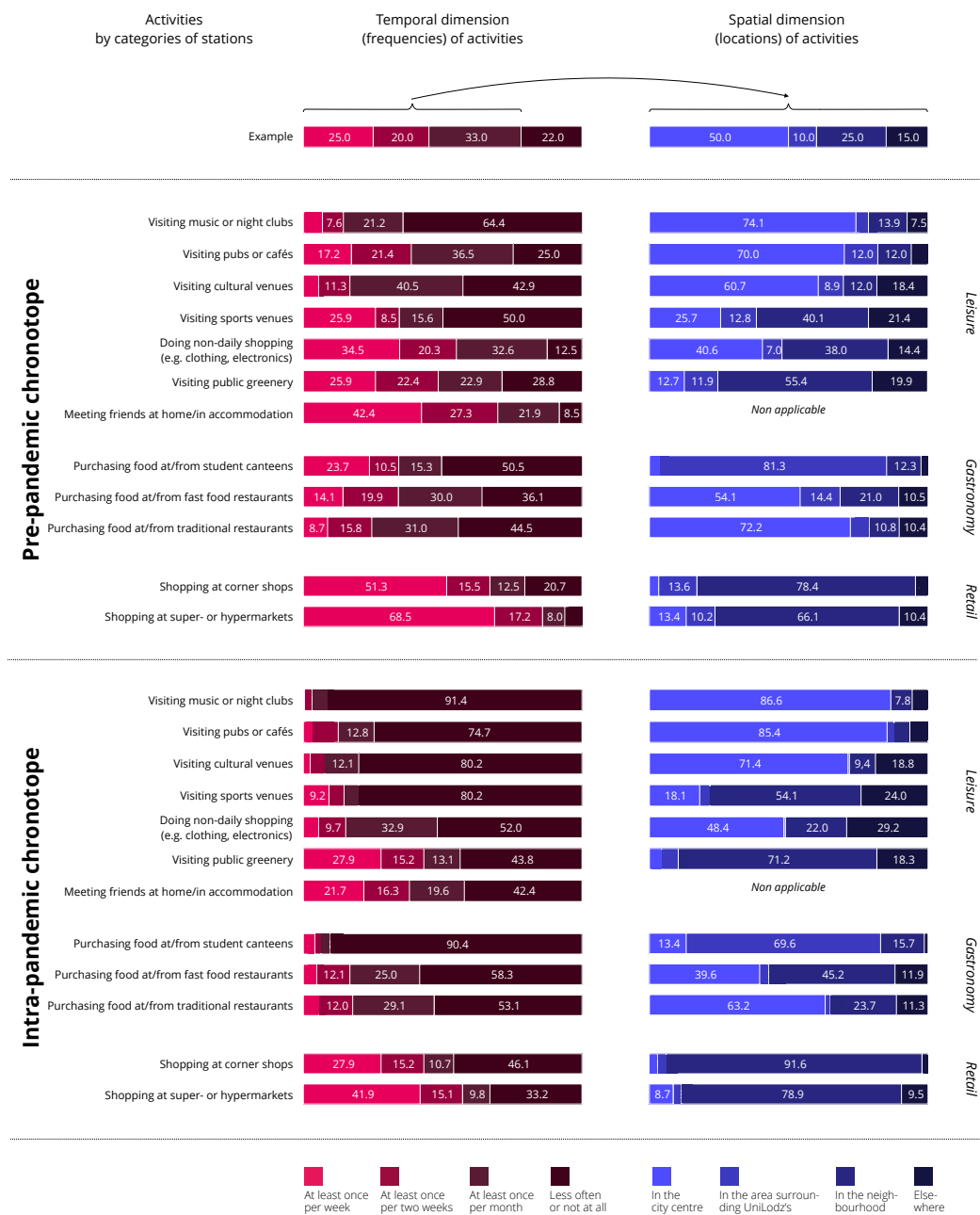


Figure 3. Students' consumption preferences in the post-pandemic future / Source:

Calculated by the authors based on the survey research. Note: All values are given in percentages.

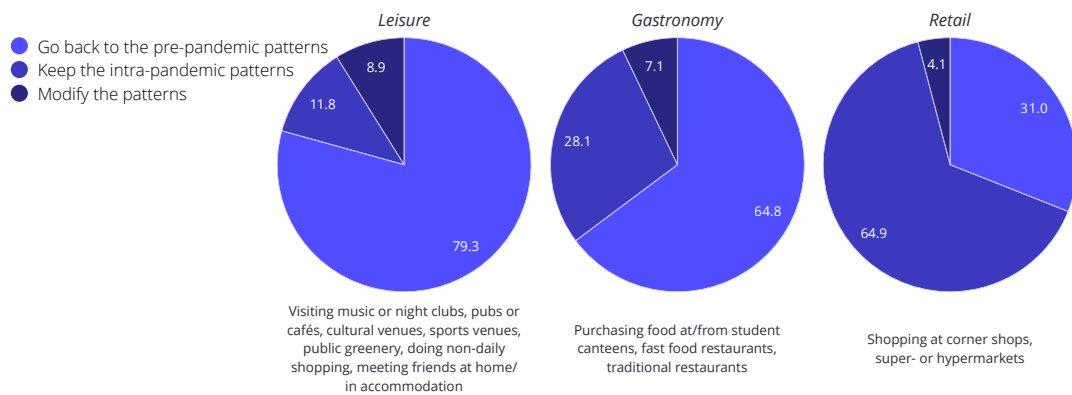


Figure 4. Students' further education preferences in the post-pandemic future / Source:

Calculated by the authors based on the survey research. Note: All values are given in percentages.

