ISSN 2500-0608

# A HOLISTIC MODEL FOR STUDENT-CENTERED ON- AND OFF-CAMPUS HOUSING — A COMPARATIVE CROSS-COUNTRY EVALUATION. ILLUMINATING PATHS TO SUSTAINABILITY

*M.A. Gaete Sepúlveda, A. Murach*

Contemporary analytics of education
№ 4 (87)
2025

HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

INSTITUTE OF EDUCATION

# A HOLISTIC MODEL FOR STUDENT-CENTERED ON- AND OFF-CAMPUS HOUSING — A COMPARATIVE CROSS-COUNTRY EVALUATION. ILLUMINATING PATHS TO SUSTAINABILITY

*Series*
*Contemporary analytics of education*

№ 4 (87)
2025

UDC 728.45
BBC 72.641
A 27



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A 27 **A Holistic** Model for Student-Centered On- and Off-Campus Housing — A Comparative Cross-Country Evaluation. Illuminating Paths to Sustainability / M. A. Gaete Sepúlveda, A. Murach ; HSE University, Institute of Education. — M.: HSE, 2025. — 112 p. — 100 copies. — (Contemporary analytics of education. № 4 (87)).

This study presents a comprehensive framework for evaluating university-managed student housing, assessing its capacity to meet diverse student needs across personal, social, and intellectual dimensions. Drawing on data from 167 student halls in 13 cities across eight European countries, the analysis uses a revised 7-tier needs model based on Maslow's theory.

Unlike traditional hierarchical approaches, the model treats all aspects of student housing — facilities, services, social spaces, academic support, and personal development — as equally important to student well-being and academic success.

The methodology applies quantitative content analysis to website data and introduces a novel, multi-criteria, non-hierarchical assessment tool. By identifying deficiencies and proposing improvements, this work supports the development of more supportive living-learning environments that foster holistic student development.

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# Introduction

On a global scale, the experiences of the pandemic revealed that a university's most valuable assets include its sustainable built educational environment [Agasisti, Soncin, 2021; de Boer, 2021; Du Preez et al., 2022]. The university campus is regarded as a pivotal space that influences students' educational experiences [Mackean, 2011; Stanton et al., 2016]. Student well-being and success are both shaped by the educational environment of a university campus [Mackean, 2011; Stanton et al., 2016; Mayhew et al., 2016]. The concept of "educational success of students" is an umbrella term that encompasses several key components, including the completion of the educational program within the prescribed time, high academic achievements, the development of skills relevant to contemporary society, and a will for autonomy (agency) [Kinsella et al., 2023; Marginson, 2023]. The physical environment and live interaction play a crucial role in students' development and the formation of positive educational experiences [Kaplan, 2021; Shcheglova et al., 2022].

A thorough examination of the evolution of the Russian higher education system over the past decades reveals significant transformations, including university mergers, the launch of excellence initiatives such as "Project 5-100", the transition to a three-level education system, and the introduction of project-based education. These changes have gradually led to improvements in campus and student housing infrastructure as well as the external appearance of universities. Historically, the majority of Russian universities were constructed during the Soviet era, with their architectural styles and academic foundations reflecting the educational priorities of that time, which were more focused on the acquisition of knowledge rather than holistic educational experiences [Ershova, Sungurova, 2021].

Recent scholarly work underscores a critical concern: the prevailing infrastructure in numerous Russian higher education institutions is antiquated. This has given rise to a pervasive sense of discontent among students with regard to academic and social dimensions, as well as their general well-being [CSR, 2021; Vinogradova, Ivanova, 2017]. This dearth of modern infrastructure poses a substantial challenge in providing quality education, attracting talented students both nationally and internationally, and enhancing the global standing of Russian universities.

In this regard, the quality and availability of on-campus and off-campus housing become a critical component of university life, exerting a substantial influence on student development. The impact of these living conditions on students' well-being and academic success is a pivotal factor in understanding the significance of adequate student housing. The quality and availability of certain student accommodation options, therefore, assume a pivotal role in shaping students' daily experiences and educational outcomes. Consequently, it is crucial that student accommodations are well-maintained and strategically situated to ensure optimal functionality and student satisfaction. This emphasis on student housing is consistent with broader educational objectives, aiming to enhance the individual student experience and foster a conducive educational environment characterized by stability and support.

According to Maslow's theory of human needs, the provision of student housing fulfills the fundamental layers of physiological and safety needs by offering a secure and comfortable living space. Furthermore, the strategic design of student housing can foster a sense of belonging and community, thereby addressing students' social needs. The integration of sustainability principles into the design and operational aspects of student housing emerges as a pivotal element for achieving enduring environmental, economic, and social sustainability.

A thorough analysis reveals that student housing contributes to broader sustainability efforts by focusing on Sustainable Development Goals (SDGs). The SDGs are part of the Global Agenda 2030, which was formulated by the United Nations General Assembly in 2015. The realization of 17 SDGs, including 169 targets, is directed at calling for action by businesses, governments, higher institutions, and society to change the world [United Nations, 2015]. This contribution extends beyond environmental stewardship to include the creation of living conditions that promote student well-being and development within student housing. Specifically, student accommodations play a direct role in supporting Good Health and Well-being (SDG 3), ensuring Quality Education (SDG 4), affordable and clean energy (Goal 7), promoting Decent Work and Economic Growth (SDG 8), contributing to Sustainable Cities and Communities (SDG 11), and fostering Partnerships for the Goals (SDG 17). This targeted approach underscores the pivotal contribution of student housing to sustainability, demonstrating its integral role in achieving the key objectives outlined in the SDGs.

In the Russian Federation, a Decree on national development goals of Russia until 2030 has been issued, aiming to foster the level of living, fulfill

the potential, and create comfortable living conditions. The primary five trajectories of this program are focused on the preservation of the population, the health and well-being of the population, the creation of opportunities for self-realization and talent development, the cultivation of a comfortable and safe living environment, and the achievement of decent, efficient labor and successful entrepreneurship. The Russian Federation government also creates federal programs and allocates subsidies to support society and development level.

This book proposes an expansion of the focus from the traditional role of universities in imparting sustainability practices to a more integrated approach. In this approach, the living conditions in on- and off-campus student accommodations embody sustainable development principles. Consequently, they exert a direct influence on the well-being and holistic development of students.

Consequently, the primary objective is to enhance the living conditions within student housing in a manner that is inherently sustainable, thereby addressing comprehensive economic, social, and environmental objectives. This objective is facilitated by the infrastructure and services provided, which not only satisfy the immediate needs of students but also cultivate a sense of responsibility and awareness regarding sustainability. Moreover, these services indirectly contribute to students' education on sustainability through the medium of "lived experiences". This approach underscores the importance of the quality, design, and sustainability of student housing as a cornerstone for a comprehensive educational environment, fostering the all-around development of students and enhancing the institution's service quality and educational outcomes.

The book is divided into six chapters. Chapter 1 examines the diversity of student housing across different countries and its primary functions for its various stakeholders. Chapter 2 provides an overview of global student housing trends and their current market conditions. Chapter 3 proposes a model of Maslow's "wheels" theory, which serves as an instrument for evaluating student housing. This chapter delineates the various types of wheels, including personal, social, and intellectual wheels, and proposes strategies for aligning student housing with the diverse needs of students. Chapter 4 presents the findings of a cross-country analysis of 167 student housing units. Chapter 5 offers a discussion of the analysis' implications and puts forth recommendations for enhancing student housing based on the analysis.

# Chapter 1. Student housing On- and Off-Campus

A considerable body of research has been conducted on the correlation between the quality of university infrastructure, including student housing, and the overall student experience. This correlation has been found to have a subsequent impact on student success metrics [Hajrasouliha, 2016]. A significant portion of the extant literature on the effects of student housing has focused on infrastructure elements that enhance students' educational outcomes. For instance, the presence of green spaces on campus has been positively associated with improved student well-being and quality of life [Kaplan, 1992; Baur, 2020]. Additionally, studies have shown that the availability of accessible learning environments, collaborative workspaces, and natural outdoor environments on campus contributes positively to student satisfaction and educational achievements [Triguero et al., 2015]. Furthermore, the integration of students into residential learning communities has been demonstrated to facilitate the transition for first-year students and enhance their satisfaction with educational quality [Shcheglova et al., 2020].

A considerable number of universities employ their campuses to achieve their institutional objectives, including the attraction of students, both domestic and international, the enhancement of the quality of life for students and faculty, the establishment of conditions conducive not only to learning but also to research and innovation, the cultivation of an environment that is both sustainable and supportive, and the provision of assistance to local communities [Coulson et al., 2014, 2015; Delbanco, 2014]. Contemporary perceptions of the university have evolved to encompass not only a space for instruction but also a nexus for interaction between faculty and students, fostering collaborative creation of educational materials [Blyth, 2018].

According to Gwosc et al. (2021, p. 229–235), the average proportion of students residing with their parents in Europe is approximately 34%, with notable deviations observed in certain countries. For instance, the percentage exceeds 60% in Italy, Malta, and Georgia, while it drops below 15% in three Nordic European countries (Finland, Sweden, and Norway) due to the higher average age of students in these regions. Conversely,

the average proportion of students residing in student accommodations is 17%, a figure that exceeds 30% in Turkey, the Netherlands, and Sweden. As students progress through their academic careers, the proportion of students residing with their parents or in student accommodations experiences a decline in all countries. Gwosc et al. (2021) further observed that in 80% of countries, the majority of residents in student residences are under 24 years of age and predominantly bachelor's students, in contrast to master's students. International students also frequently utilize student halls, constituting 32% of the total number of students residing in such facilities.

## 1.1. Definitions of Student housing or students' accommodations

A broad array of student accommodations has been observed to exist around the world, each offering a unique set of benefits to those who utilize them. This study will undertake an examination of the various living arrangements detailed below:

On-Campus dormitories: Student apartment buildings are frequently referred to as "dorms" in the United States. Located on or adjacent to university campuses, these facilities offer students the convenience of proximity to their academic buildings. Dormitories may feature both communal and private amenities and are designed to house either single or multiple students in a single room.

Residence Halls: The system of residence halls in the UK operates in a manner analogous to that of dormitories in the United States. These residence halls are situated on or in close proximity to the campus grounds, thereby ensuring convenient access for students. These buildings generally offer single rooms, with the option of shared or individual amenities, though rooms that are configured as twins are comparatively infrequent.

*Colegio Mayor*: Colegios Mayores represent a distinctive institution in Spain, offering residential colleges that provide more than mere accommodation. These institutions facilitate a multifaceted array of academic and cultural activities, fostering a dynamic community environment that fosters both personal and academic growth.

Student Residences or Halls of Residence: The term "student accommodation" is employed in Germany to denote residential facilities designed specifically for students (Studentenwohnheime or Wohnheime). These ac-

commodations typically take the form of large housing complexes, often referred to as halls of residence, which house hundreds of students. The individual bedrooms within these complexes are typically furnished and organized around corridors or shared kitchens.

*WG*: The German term "Wohngemeinschaft" (WG) denotes a living arrangement in which multiple students share an apartment. Each tenant is allotted their own private room, while communal areas, including bathrooms, kitchens, and living rooms (if applicable) are shared among residents. On occasion, dormitories offer WG accommodations.

Private Apartments/Houses: These residencies offer students the opportunity to share living spaces, thereby providing a more traditional living experience that is distinct from the conventional institutional settings.

*Kot*: The term "kot" is specific to Belgium and refers to converted study rooms that serve as private student apartments. These "kots" often contain shared amenities, such as kitchens and bathrooms, and are available for private rent.

Room in a Private House/Shared House: These accommodations, referred to as "room in a private house" on a global scale and "shared house" in Australia, involve the rental of rooms by homeowners, providing students with a distinctive living experience within a private residence.

Studio Apartments: A comparison of the living space provided by studios and traditional dorm rooms reveals that the former is of a larger dimension, with dimensions suitable for one or two occupants. These apartments are self-contained, with private kitchens and bathrooms.

Russian Student hostel ("*Общежитие*"): The concept of communal living, wherein students from diverse backgrounds reside together, is a salient one. It refers to a specific type of residential accommodation designed to offer affordable housing options. These student hostels are buildings or complexes located in close proximity to educational campuses, where students rent shared rooms for less than 100 euros. Facilities often include basic services such as communal kitchens, shared bathrooms, and laundry services.

## 1.2. Student housing stakeholders

A notable aspect of a location's influence pertains to its perception by stakeholders, defined as individuals who are shaped by their immediate environment. The quality of student housing is contingent upon the nature and strength of its relationship with each stakeholder [Mora and Gaete, 2021].

The term “stakeholders in student accommodations” refers to a diverse group of individuals and organizations with vested interests in the field, ranging from those within the educational institution to external entities in the wider community [Den Heider, 2012]. The term “internal stakeholders” refers to a diverse group of individuals, including students from both domestic and international backgrounds, as well as those participating in exchange programs. This group’s diverse needs are highlighted by the inclusion of these students. Current and prospective students, along with their families, who are considered key external stakeholders, place significant reliance on these accommodations. Professors and staff involved in guidance and mentoring, in conjunction with the administration, play pivotal roles in ensuring that the accommodations meet the educational and welfare needs of the students. Universities themselves, in their capacity as both providers and beneficiaries of student success, are considered central stakeholders. The external stakeholders include investors and donors who finance the accommodations, local governments that regulate them, and industrial and business partners that may offer opportunities for students.

The involvement of the broader community and non-governmental organizations (NGOs) as stakeholders in the domain of student housing is of considerable significance. This involvement is predicated on the understanding that these accommodations may wield a profound impact on local economies and societal welfare. Moreover, it is posited that universities could cultivate robust social engagement around dormitories, thereby rendering the university space more open and appealing to the community. This includes encouraging student tenants to participate in the volunteering initiatives of local NGOs, fostering a vibrant and collaborative environment. This symbiotic relationship underscores the potential for student housing to serve as a catalyst for positive community engagement and development, emphasizing the importance of inclusive planning and collaboration among educational institutions, NGOs, and local communities.

This network of stakeholders exemplifies the intricate interdependencies and diverse interests that influence the provision and management of student accommodations (Fig. 1).

Universities frequently engage in collaborative efforts with municipal authorities to enhance the external environment, thereby safeguarding their assets from devaluation and enhancing the campuses’ appeal to prospective students through the improvement of infrastructure and the assurance of order and safety in the surrounding areas. However, such

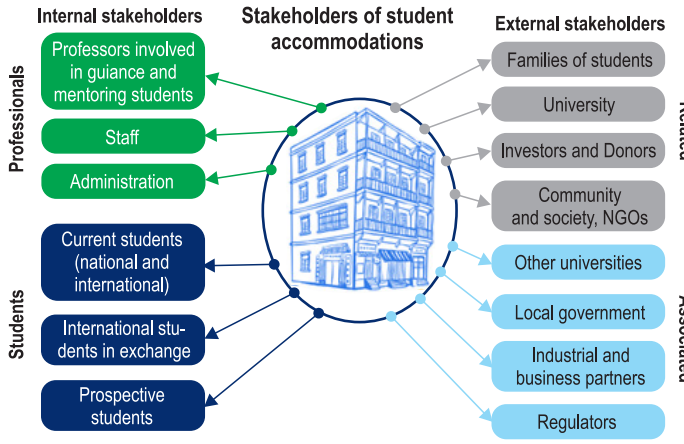


**Figure 1.** The stakeholders of university student accommodations (Own elaboration)

collaboration does not occur automatically but rather is the result of close cooperation between universities and authorities [Revington, 2022; Revington et al., 2023]. It is also important to acknowledge that, in the absence of other variables, students often express a preference for universities located in close proximity to the city center. This preference can often be a decisive factor in the selection of a university for enrollment [Magni et al., 2019; Verhetsel et al., 2017].

By emphasizing the significance of students as a primary stakeholder group, whose perspectives on housing have a substantial impact on their well-being, academic performance, and overall satisfaction, the necessity of aligning the design and management of accommodations with students' needs becomes evident. This approach is crucial for fostering a supportive living environment. Furthermore, the modernization of student campuses and accommodations, driven by generational, social, and economic factors, as explored in our book, serves as a reflection of the evolving trends and developments that are enhancing higher education institutions (HEIs). The international trends in student living accommodations are indicative of the adaptation to modern needs or habits of the intangible assets for universities, such as reputation, social responsibility, and internationalization, enhancing the student experience.

There is evidence of reciprocal effects between university campuses and urban districts, with the development of both providing mutual positive externalities [Revington et al., 2023]. International research indicates a direct correlation between university expansion and urban economic revitalization, underscoring a prospective role for universities in such integration [Mallach, 2018; Garboden, Jang-Trettien, 2020; Goddard et al., 2014; Zwick, 2018].The pivotal factor determining the significance of universities in the city is the static nature of their location. In contrast to the more mobile commercial sector, which can adjust its location based on market conditions, universities tend to maintain a fixed presence in a given city or region. This stability fosters a conducive environment for economic development through various channels. Universities generate new knowledge, nurture skilled workforces, and facilitate the emergence of innovative industries and products, contributing to a vibrant and dynamic urban ecosystem [Drucker, 2016].

According to Gwosc et al. [2021, p. 237], students residing in student accommodation across all countries have the shortest commuting time to the Higher Education Institution (HEI) of 15 minutes one way, compared. This is in contrast to students residing with their parents, who have a median commuting time of 40 minutes (with the shortest times in Ireland, Iceland, and Portugal equaling 10 minutes, and the longest in the Netherlands).

# Chapter 2. Global trends of student housing

Historically, in countries such as Spain, the UK, China, and others, student housing options were primarily limited to on-campus accommodations. This traditional approach provided students with convenient living spaces close to their educational institutions, fostering a close-knit academic community. However, this model also restricted the diversity and flexibility of housing options available to students, reflecting a more uniform approach to student living. However, as the demand for higher education grew and student populations became more diverse, the need for varied housing solutions became evident. This prompted a shift towards more inclusive and flexible accommodation strategies.

Off-campus student housing has undergone a global transformation in response to shifting student needs and preferences, significantly impacting the landscape of student living worldwide. A prominent global trend is the emergence of purpose-built student accommodation (PBSA), reflecting a transition towards more sophisticated and amenity-rich environments. This shift is driven in significant part by the recognition of stable returns on investment in student housing by private investors. This trend is particularly evident in countries with robust higher education sectors, such as the UK, USA, China, and Australia, where there has been a notable surge in PBSA projects.

A distinguishing feature of modern PBSAs is their emphasis on amenities designed to enhance student life. High-speed internet, study rooms, fitness centers, and communal kitchens are standard, with some facilities offering luxury features such as rooftop terraces and swimming pools. Alongside physical amenities, sustainability and eco-friendly designs have become crucial in new PBSA developments. Efforts to achieve green building certifications and incorporate energy-efficient designs are increasingly common, catering to environmentally conscious students.

Technological integration is a distinguishing feature of contemporary PBSAs. These developments are characterized by the incorporation of smart technology, including keyless entry systems, smart lighting, and heating systems. Additionally, applications that enable residents to manage various aspects of their living experience from their smartphones have become a standard feature.

The global demand for higher education is prompting the expansion of PBSA beyond traditional markets to emerging education hubs in Asia,

Europe, and Latin America. This growth is accompanied by an increased focus on community and well-being. PBSAs are being designed to foster a sense of community and support the mental health and well-being of students through social spaces and access to community engagement programs.

Despite the trend towards luxury, there is a growing recognition of the need for affordable student housing options. Developers and institutions are exploring ways to balance luxury with accessibility, with the aim of catering to a broader student population. Concurrently, there is a trend towards partnerships and collaborations between universities and private developers. These partnerships help institutions meet housing needs without bearing the financial and managerial burdens of residence construction and operation themselves.

The aforementioned trends highlight the dynamism of the sector as it rapidly adapts to the shifting demographics and preferences of the global student population. The persistent increase in demand for quality higher education signifies a favorable outlook for the PBSA market, which is expected to undergo further growth. This growth presents novel opportunities for investors, developers, and educational institutions worldwide.

## 2.1. Student housing market

The COVID-19 pandemic had a profound impact on all aspects of human life, particularly affecting the student population. Notably, there was a significant decrease in student mobility, as evidenced by the substantial decrease in issued student permits in 2020 compared to 2019. The United States and the United Kingdom, two of the most sought-after destinations for international students, experienced declines of 69% and 40%, respectively. This decline can be attributed to the transition from in-person to remote learning, followed by a shift to a hybrid instructional model [Ninnemann, 2020].

Contrary to predictions, the impact of the COVID-19 on the occupancy rates of various student residences was relatively mild, with most countries reporting a decline of less than 10%. Specifically, student housing in the United Kingdom, Netherlands, Germany, and Central and Eastern European countries maintained an occupancy rate of approximately 90%, while those in France, Italy, and Spain registered rates of around 80%. This resilience underscores a marked preference among students for student

housing over alternatives like apartments or family homes, highlighting the strong potential for further student housing development. Surveys further corroborate this trend, revealing that students favor student housing accommodations over other housing options and choose to remain in dormitories even amidst the predominance of distance learning [Bonard, 2021].

The strong commitment of students to residence halls carries inherently positive economic implications, primarily leading to increased competition among accommodation programs and consequently elevating the quality of both the investments and the student housing sector itself. To date, Purpose-Built Student Accommodation (PBSA) has garnered interest from over 700 companies globally. Of particular note is the anticipation of the European launch of 961 new PBSAs, which is expected to generate an additional 269,942 student accommodation units within the market [Bonard, 2023]. This growth is indicative of the significant demand for quality student housing and underscores the sector's substantial potential for further development and investment.

As early as 2021, experts observed a marked increase in the demand for student housing, driven by a resurgence in demand for domestic education and academic mobility [Bonard, 2022]. This uptick was further amplified by students who had postponed their education due to the pandemic. By the end of 2021, the capacity of the private student housing market was fully utilized by students, highlighting the sector's robust demand. Investors also recognized the low investment risk in this sector, attributed to adherence to sanitary standards, which became a pivotal consideration in the context of the pandemic [Bonard, 2022]. This trend underscores the resilience and growing attractiveness of the student housing market as an investment opportunity.

In 2022, European countries that experienced temporary dips in occupancy rates saw their levels surge to an average of up to 98%, according to Bonard (2023). This increase coincided with a continued rise in the number of international students seeking higher education in Europe, as evidenced by a comparison of the 2021/2022 academic year with the 2020/2021 period. Croatia, Ireland, and Portugal experienced notable increases in international student enrollment, with 26%, 20%, and 19% growth, respectively [Bonard, 2023]. Despite these encouraging trends, the global capacity of the student housing market remains uneven, with disparities in investment attractiveness observed across different regions, including Eastern Europe and Russia. Brissy et al. (2022) emphasize a substantial surge in

PBSA investment volumes in 2022, which escalated by 130% compared to 2021. According to Bonard (2023), half of the cities under consideration have augmented their market capacities, defined as the percentage of total beds to total students. Rome and Madrid have emerged as particularly attractive investment destinations, with total investment volumes of 0.6% and 7.7%, respectively, in 2022. These cities are viewed as promising markets for student housing investments, primarily because their student housing markets are expanding and have yet to reach full capacity (See Table 3).

In 2022, the demand for rented residential assets, including PBSA, remained stable or continued to increase. According to Bonard (2023), PBSA assets yielded higher returns compared to Residential Tenancy Scheme (RTS) and multifamily residential types. Additionally, there is a growing trend towards integrating student housing into the urban fabric, often in combination with facilities such as hotels and apartments. This approach of hybridization has been shown to mitigate profitability risks while enhancing the integration of students and academia within the urban environment, suggesting a strategic move towards more versatile and community-oriented student living spaces [Bonard, 2022].

From 2015 to 2022, there was a marked increase in the population aged 15–19 across European cities, with Prague experiencing the most significant annual five-year growth rate at 5.7%. Projections indicate an expected annual growth rate of 5.8% for European cities by 2027. Concurrent with this demographic shift, a favorable trend has been observed in student enrollment. On average, European countries experienced an increase of 1% in student enrollment between the 2020/2021 and 2021/2022 academic years [Brissy et al., 2022; OECD, a, b]. The Savills Report [Brissy et al., 2022] indicates that in 2022, the ratio of total beds to the total number of students averaged 12.5% across Europe. Additionally, the market for Purpose-Built Student Accommodations (PBSAs) has expanded, with private student housing accounting for a 37% share of the student housing market. Given the observed trends in student populations across Europe, there is a projected increase in demand for PBSAs, though to varying extents depending on the region.In the UK, for instance, there has been a slight decline in the availability of PBSA in certain cities, as demand has outpaced the supply [Murphy, 2023]. Additionally, there has been a notable increase in the number of international students, as evidenced by various sources [Brissy et al., 2022; Bonard, 2023]. As indicated in Table 3, the

UK and the Czech Republic have the highest proportions of international students among the sampled European countries.

Moreover, a notable finding from the Class Conference in November 2023, a pivotal event in the industry that convened leading experts and stakeholders in the Purpose-Built Student Accommodation (PBSA) sector, revealed that "The PBSA sector has witnessed sustained demand, with a substantial 2.3 trillion euros anticipated for investment in the market. This heightened interest is further supported by an emphasis on sustainability and Environmental, Social, and Governance (ESG) factors, indicating a shift towards responsible investment" [The Class Foundation, 2023].

## 2.2. Affordability of student housing and cost of living

The affordability of student housing is a critical consideration, as many students rely on their parents' income for support. Brissy et al. (2022) report that he average rent for Purpose-Built Student Accommodation (PBSA) across Europe constitutes 27% of the average household income, a percentage that has seen an increase from 2021. According to Bonard (2023), cities with over 100,000 students exhibit higher rental costs compared to cities with fewer students, at 42.5 euros per square meter and 32 euros per square meter, respectively. This discrepancy is further accentuated when comparing recently established PBSAs (2019–2022) to their older counterparts, with the former exhibiting a 3.5-euro increase in rental costs. Moreover, the global average rental cost for studios, the most prevalent housing option among students, experienced a 4.9% increase in major cities from 2021 to 2022.

Statistical evidence indicates that 24% of students residing in student accommodation and 25% of those living alone express dissatisfaction with the cost of living, with the highest rates of discontent reported in Ireland, Iceland, Lithuania, and Sweden. In contrast, among students who do not live alone, the dissatisfaction rate stands at 20–21%. This discontent is understandable, given that approximately 32%–38% of students' monthly expenses are allocated to housing services [Gwosc et al., 2021]. The lack of affordable housing options poses a significant risk, potentially leading to the emigration of young, qualified scientists, both foreign and local, in search of better opportunities.

Affordability has emerged as a persistent theme in discussions concerning student well-being. This phenomenon is evidenced by the findings

of the Student Living Monitor, which revealed that concerns over financial matters significantly affect well-being. To assist the most vulnerable students, initiatives such as scholarships and inclusive rental agreements have been proposed [The Class Foundation, 2023].

In order to mitigate potential biases arising from regional differences in consumer price levels, a comparative analysis was conducted of the average rent price per square meter [Bonard, 2023] against the average wages in the countries from the sample (Federal State Statistics Service; OECD, 2024). As illustrated in Figure 2, there appears to be no clear correlation between annual salaries and the price per square meter in Purpose-Built Student Accommodation (PBSA). The most expensive living units are found in the UK, Ireland, and Spain, while rent prices in other countries exhibit a more uniform level. Notably, the UK leads in PBSA investment volumes, accounting for 73% in 2022 and 60% in 2021, while Spain captures a 7–8% share of total PBSA investments. Furthermore, an increase in student populations has been observed to lead to heightened interest in the Private

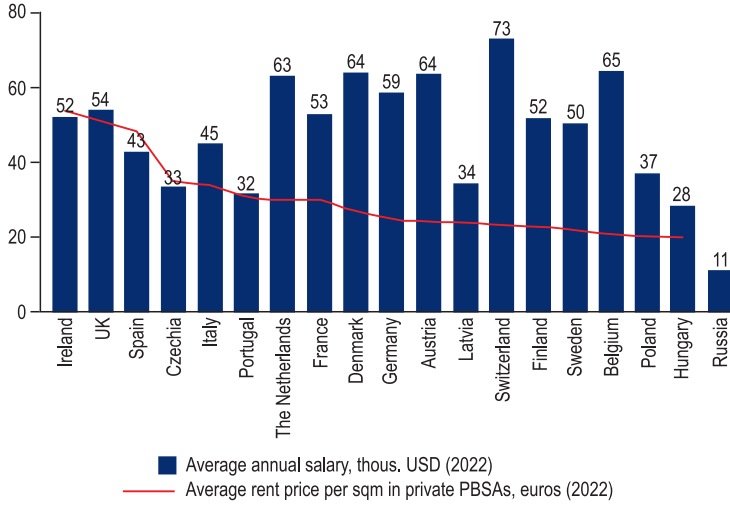


**Figure 2.** The annual salary and average rent per sqm in private PBSA across European countries, thous. USD

*Sources:* OECD (2024), Bonard (2023), Federal State Statistics Service of Russia (average exchange rate for 2022 according to the Central Bank of Russia).

Rented Sector as well as Houses of Multiple Occupation, thereby contributing to escalating rental prices. This phenomenon was particularly evident in the UK during the 2020/2021 academic year, when student enrollments reached 2.9 million (See Table 3), underscoring the dynamic interplay between student populations and housing market trends.

Furthermore, there is evidence that the number of room neighbors directly affects their comfort. For this reason, the presented graphs group student housing by the number of residents per room, distinguishing between single occupancy and double occupancy (i.e., rooms shared by three or more students) (Fig. 3).

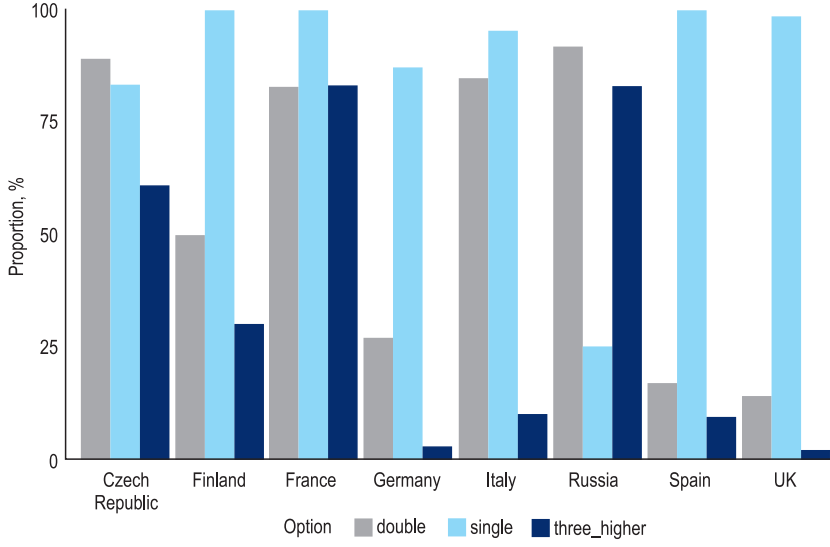


**Figure 3.** The availability of rooms with different options of residents per room in student housing, as proportion of total number of accommodations in the sample across countries, %

In over 75% of the nation's sample of accommodations, single-occupancy options are presented, despite the presence of a Russian campus. This phenomenon is associated with Russia's relatively low average salary compared to other countries. However, Russian universities offer the most affordable student accommodation with roommates, which may enhance

the appeal of Russian universities for foreign applicants and indirectly suggest a greater affordability of higher education for local students compared to European students. In contrast, in countries such as Germany, France, the United Kingdom, and Spain, the single occupancy option is available in all of the sampled accommodations. This variation may be attributed to the country's income level compared to others as well as its national culture. For instance, in France, double occupancy and three or more occupants per room are also popular. In contrast, in Italy and the Czech Republic, the proportion of double and single occupancy options is almost equal.

## 2.3. Quality of university residences living

Despite the significance of the cost of living, students may opt for more expensive options. According to Fielding (2019), students in the UK currently spend approximately 500–800 pounts (or 570920 euros, converted using the average 2019 exchange rate based on the European Central Bank). This suggests that students are willing to allocate a greater portion of their budget toward high-quality services, as indicated by an increase in the variety of living options available to them.

It can be argued that modern private purpose-built student accommodation (PBSA) offers significant competition to traditional university halls. The annual Global Student Living Index survey indicates that private housing is more satisfying to students than university dormitories. Specifically, the survey found that 7% more students felt that the staff in private housing were more concerned with student well-being than those in university halls of residence. In terms of social connections, only a marginal increase of five percent was observed in the belief that university halls facilitate the formation of closer friendships compared to private residences [Lindblom, 2023].The advent of the Coronavirus pandemic has led to a paradigm shift in the expectations and experiences of students concerning their living arrangements. According to Harris Evolution (2021), students have expressed satisfaction with certain on-campus amenities, including high-speed and readily accessible Wi-Fi, additional bedroom space, comfortable beds, access to athletic facilities, the availability of laundry services, ample daylight in residential areas, and well-maintained communal areas such as dining halls.

Research findings indicate that, under certain conditions, students demonstrate a preference for educational institutions that offer superior

facilities and more comfortable accommodations [Trunova et al., 2021; VEB.RF and KB Strelka, 2021]. Student satisfaction with the The quality of housing conditions has been found to have a direct impact on student satisfaction [Reynolds, 2007; Vidalakis et al., 2013; Kobue et al., 2017; McDonald, 2019]. Additionally, a positive correlation has been observed between the quality of PBSA and students' academic performance and research experience [Devlin et al., 2008]. However, students residing in student housing are more likely to report dissatisfaction with their living conditions (19%) compared to those living with their parents or in other accommodations. Nonetheless, these students exhibit minimal dissatisfaction with the location of their housing and their commuting times [Gwosc et al., 2021].

In the context of PBSA amenities offered to students, there is a tendency for variation across different regions, with similarities observed within specific regions [Bonard, 2022, 2023]. For instance, the majority of student residences in Germany (74%) are equipped with bicycle storage facilities, 94% of Lithuanian dormitories feature a communal kitchen, and 63% of Austrian student housing includes terraces or equipped courtyards. Notably, Portugal stands out with the highest number of study rooms (42%) among the countries examined. The Bonard report (2023) highlights the evolution of amenities offered by private PBSA options over time. Specifically, there has been a twofold increase in the number of student residences offering gyms, study rooms, and game rooms over the past three years.

A thriving student campus integrates physical and digital infrastructures in a manner that optimizes the utilization of space and technology by students while simultaneously enhancing the urban environment (Table 1). While the selection criteria for accommodations may vary based on demographic characteristics, affordability remains paramount for all students, underscoring the importance of public-private partnerships in providing affordable housing options for university students and highlighting the need for governmental regulation of this rental market. A notable finding is that over 67% of applicants consider the campus to be a pivotal factor in their college decision-making process. Key considerations include the availability of classrooms, the state of libraries, the convenience of living quarters, dining facilities, and the quality of meals, as well as access to Wi-Fi [McDonald, 2019].

In considering their housing options, students prioritize a number of factors, listed in order of importance. These include the dormitory's loca-

**Table 1.** Results of research aimed to identify key characteristics of student housing

| Research | Results |
|---|---|
| *Duan H. et. al.* Metaverse for Social Good: A University Campus Prototype (2021) | A successful student campus must integrate both physical and digital infrastructure, balancing them to optimize space and technology utilization by students and to enhance the urban environment. |
| *Ike N., Baldwin Cl., Lathouras A.* Tertiary students' housing priorities: Finding home away from home (2020) | The selection of accommodations for students is influenced by their demographic characteristics; however, the predominant factor in the selection of accommodations for all students is its affordability. The authors emphasize the necessity of establishing public-private partnerships to provide affordable housing for university students and the importance of state regulation of this rental category. |
| *McDonald L.S.* The Impact of Campus Facilities on the Recruitment of Students in Higher Education (2019) | A substantial proportion of applicants — more than 67% — cite campus as a pivotal factor in their decision to apply to college.<br>The pivotal aspects that applicants consider when choosing a campus are as follows:<br>• availability of classrooms<br>• availability and condition of libraries<br>• convenience of living quarters<br>• availability of dining facilities and quality of meals provided<br>• access to Wi-Fi. |
| *Kobue T., Oke A., Aigbavboa C.* Understanding the determinants of students' choice of occupancy for creative construction (2017) | Determining factors in students' housing choices are (ranked by importance): the location of the dormitory; security level; proximity to the study buildings; the number of residents per room; availability of laundry facilities; availability and speed of Internet; availability of parking; design and architectural solutions; availability of classrooms and gym; recommendations from contacts. |
| *Vidalakis C., Sun M., Papa A.* The quality and value of higher education facilities: a comparative study (2013) | Students represent a particularly undemanding group of stakeholders on university campuses. They do not demonstrate a preference for high-tech, bright solutions; rather, they express a preference for comfortable, tidy, and focused environments that address their needs. |

tion, the security measures in place, the proximity to academic buildings, the number of roommates, the availability of laundry facilities, internet speed and accessibility, parking availability, and the design and architectural features of the living spaces. This includes the availability of classrooms and gym facilities. Recommendations from peers also play a crucial role in these decisions [Kobue et al, 2017]. Notably, students exhibit a propensity to demand minimal modifications to campus facilities, eschewing technologically sophisticated or ostentatious solutions. Instead, they prioritize amenities that ensure comfort, cleanliness, and alignment with their needs, reflecting a pronounced predilection for pragmatism and convenience in their living and learning environments.

# Chapter 3. The Model "Student Housing On- and Off-Campus"

The conceptualization of future student housing must commence with the formulation of a model that not only aligns with contemporary market demands but also exhibits adaptability to the evolving needs of all stakeholders (See Fig. 1). The model for European campuses functioned as a foundational reference point, and Dutch scholar den Heijer (2011) is among the researchers contributing to this field. The model's appeal lies in its grounding in fundamental human needs, as depicted in Maslow's hierarchy of needs from the mid-20th century [Blyth and Worthington, 2010]. Abbas (2020) employed Maslow's hierarchy as a theoretical framework to identify students' service quality needs at universities, pinpointing the essential aspects of service based on student expectations and requirements.

In the context of the aforementioned paradigm, a model was developed, encompassing three layers inspired by Maslow's hierarchy: personal, social, and intellectual (Fig. 4). However, it is argued that in this century, a hierarchical structure does not accurately reflect the evolution of society towards a more human-centered approach, as exemplified by Society 5.0 [Keidaren, 2018]. Consequently, we have reinterpreted the model not as a rigid hierarchy but as a dynamic framework that responds to the diverse needs of student housing facilities and services. The model is constructed as three interconnected wheels that may move at different speeds but remain perpetually related. This implies that students may prioritize their needs in different ways, suggesting that if certain needs are not met by student housing, students will seek to fulfill them independently outside their accommodation. In addition, as posited by Maslow and Lewis (1987), the hierarchy of needs varies from person to person, and human behavior can be influenced by numerous motivations. Consequently, student housing should regard these needs as equally crucial for students and endeavor to address them concurrently.

It is important to acknowledge the limitations of Maslow's hierarchy theory. Contrary to a rigid interpretation that demands the complete fulfillment of fundamental needs before higher-level needs can be addressed, Maslow himself acknowledged that an individual might find their physio-

logical needs met at 80%, their safety needs met at 70%, while their need for self-actualization is only approximately 10% satisfied. It is noteworthy that Maslow and his proponents acknowledged the non-universality of this sequence, recognizing instances where individuals may prioritize contributing to society and self-actualization over their basic needs [Maslow, 1987, p. 26–27]. Additionally, the relevance of Maslow's hierarchy to communities and societies is a subject of debate. For instance, if the fundamental and social needs of a community are met, its members (regardless of whether they constitute a specific group or the entirety of a nation) may be more inclined toward self-actualization, irrespective of the satisfaction of their individual needs [Compton, 2018].

In Maslow's psychological theory, the base of the personal layer, entitled "Security", encompasses the necessity for safe student housing environments. Ascending the hierarchy, the "Physiological" layer addresses aspects such as nutrition and rest, underscoring the significance of adequate dining facilities and comfortable living quarters. The "Social" layer emphasizes the aspects of "Acceptance and Respect" and "Sense of Belonging and Friendship", highlighting the importance of inclusive spaces that foster community and peer connections. This layer underscores the role of communal areas and organized social activities in enhancing students' sense of belonging. The intellectual layer, symbolized by the concepts of "cognitive" and "aesthetics", underscores the importance of stimulating learning environments and pleasing surroundings. Thus, well-equipped, aesthetically appealing spaces are essential. At the pinnacle of personal development is the self-actualization layer, which symbolizes the final stage of personal growth facilitated by opportunities for creativity, research, and innovation.

The "wheel" model depicted (Fig. 4) illustrates a student housing quality framework that originates from Maslow's seven-stage pyramid of needs, as interpreted by Rodulfo (2018). However, it undergoes a shift towards a higher level of interconnection, conceptualized as catering to an intersecting spectrum of student needs that span across three core "wheels" instead of "layers": social, intellectual, and personal. The paradigm under consideration is one that is holistic and intricately interconnected, mapping out the multifaceted nature of student housing life, capturing the intertwining dimensions in a single, cohesive moving structure. At the core of this ecosystem is a student-centered perspective that posits the diverse needs of students as not being isolated, pyramidal, or linear; rather, they

are deeply interconnected, echoing the essence of holistic well-being. In the new model, all wheels (before layers) are seen as intersecting, reflecting the capacity of student housing facilities to cater to a range of needs covered by these wheels. The importance of each wheel, alongside how student housing facilities fulfill these needs, will be elaborated upon further. There is evidence indicating that certain elements within these wheels have a significant impact on students' well-being and academic success. Consequently, we regard these "wheels" as indispensable components of a comprehensive ecosystem designed to fortify the student experience. Embracing an ecosystemic perspective enables a more profound comprehension and fulfillment of students' needs, thereby nurturing their holistic development throughout their academic pursuits.

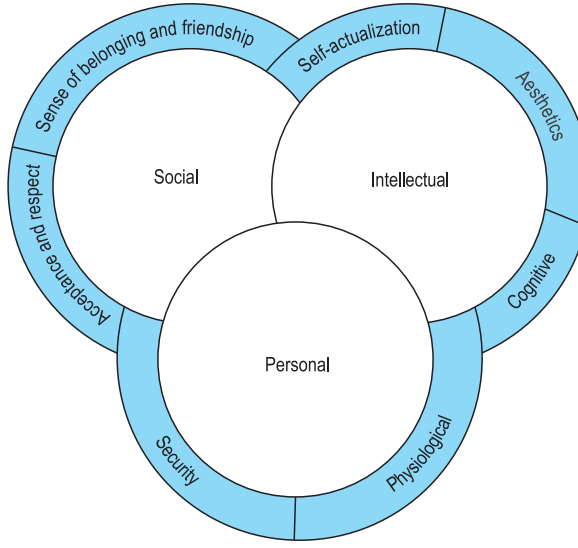


**Figure 4.** Our 'wheel' model of holistic and sustainable student housing based on Maslow's needs [Rodulfo, 2018], transforms into 'moving wheels' according to the needs of the students. Created by authors

The findings of the study demonstrated that each class of indicators analyzed correlates with one or more of the aforementioned "wheels" (Appendix 1). For instance, indicators of "Security" may include the presence

of student housing security personnel and emergency services, while "Physiological" indicators may assess the availability and quality of food services and gym facilities. To support the "Social" aspect, indicators such as the number and quality of communal spaces and student organizations are evaluated. The 'Intellectual' aspect encompasses indicators such as access to and the state of libraries, in addition to the availability of Wi-Fi and technology-equipped study areas. Lastly, the 'Self-actualization' component is measured through the presence of creative spaces, research opportunities, and platforms for student entrepreneurship.

The model promotes a student housing design that acknowledges the diverse and intersecting needs of students, ensuring that facilities and services are not only comprehensive but also conducive to cultivating a healthy and productive academic community.

### 3.1. The Personal 'wheel'

An examination of the first wheel reveals that it addresses physiological needs, such as sleep, food, water, warmth, and security needs. These needs are fulfilled in student housing through the provision of cafes, dining rooms, vending machines, adequate living conditions, and the availability of bathrooms. The issue of providing proper nutrition for students should not be underestimated. Studies indicate that approximately three-quarters of university students adhere to irregular meal schedules, and their diets frequently lack proteins and fibers [Shuvalova and Popov, 2021]. More than a third of students neither purchase complex lunches nor prepare them themselves, with about half of the survey participants regularly visiting fast-food restaurants. This dietary pattern has been shown to have adverse effects on both objective health indicators and students' well-being. A significant proportion of the student population reports a decline in well-being due to insufficient and unbalanced diets. Moreover, a study by Romashov and Kashparova (2020) found that 100% of Russian students residing in student hostels expressed dissatisfaction with the quality of their meals. Consequently, the provision of a daily, comprehensive meal has the potential to significantly contribute to the promotion of a healthy lifestyle, enhancement of well-being, and improvement of educational outcomes.

The second facet of personal needs pertains to a sense of security, encompassing physiological and emotional safety, financial stability, health, and well-being. This need can be addressed by the presence of dedicated

security services and by maintaining a level of oversight regarding student consumption, such as alcohol and tobacco use. Research indicates that students residing with their families tend to consume less alcohol compared to their counterparts living in dormitories [Gordeeva and Petukhov, 2014; Lorant et al. 2013]. Consequently, the regulation of alcohol and tobacco use in student housing is considered an integral component of the security aspect.

A further consideration of the aspect of security involves the remoteness of the student housing from university academic buildings, as well as the transportation infrastructure features of the studied universities. It is noteworthy that this factor affects not only the students' comfort but also their health. According to the results of studies on students' physical activity at the University of Tübingen in Germany, walking or cycling to campus has a beneficial effect on the physical and mental health of students compared to traveling by public transport or private car [Teuber and Sudeck, 2021]. Therefore, the importance of providing walking and biking paths both on and off campus is evident. Furthermore, the extended travel time to campus has been shown to have a detrimental impact on students' academic performance and future career prospects [Sotomayor et al., 2022]. This underscores the necessity for effective student transportation options or close access from residential facilities to academic buildings.

A discussion of student housing as a space with creative potential necessitates, firstly, ensuring that the environment offers all essential conditions for decent and comfortable living. Additionally, it is important to highlight that, despite the evident social functions of campuses, they should also offer often-overlooked opportunities for privacy and seclusion [Bochis et al., 2022; Muntean, Bochis, 2023].

According to Self-Determination Theory and its sub-theory of Basic Psychological Needs, autonomy is identified as a significant factor influencing the motivation, well-being, and effectiveness of individuals, including students. The dissatisfaction of Basic Psychological Needs is identified as a prevalent cause of emotional exhaustion and the decline in academic success [Zupančič et al., 2024, p. 289]. Autonomy, in this context, is defined as the capacity to manifest independence and self-reliance, in the absence of external control and surveillance. Research has demonstrated that autonomy, in conjunction with other psychological needs such as competence and relatedness, has a positive impact on academic achievement and fosters intrinsic motivation in students (Ibid.). The

satisfaction of the need for autonomy has been demonstrated to have a significant impact on reducing the level of emotional burnout, and the link between autonomy and motivation, overall student well-being, has been substantiated [Zupančič et al., 2024, p. 293–294].

### 3.2. The Social 'wheel'

The subsequent wheel comprises two components: a sense of belonging and friendship, as well as acceptance and respect, which are realized through interactions among individuals. The initial component is manifested through the establishment of close relationships with roommates and classmates, particularly in shared spaces for work and leisure. The secondary component is realized through the demonstration of competence and the attainment of success in diverse activities offered by campuses, notably student housing for students. To further enhance students' socialization, it is important to cultivate a social environment within the student housing that embraces students from diverse academic backgrounds, fostering their engagement in cultural organizations and events.

Research indicates that student housing cultural organizations play a substantial role in fostering friendships, thereby enhancing students' social equity and evoking a sense of belonging to the university community [Glass et al., 2018). Engagement in university life is a pivotal factor in students' academic performance and success [Kinzie, Kuh, 2004], and it has been demonstrated to increase motivation and persistence [Garza et al., 2021]. It is particularly salient to incorporate students from the so-called 'risk group' into leisure activities, with the objective of cultivating their self-regulation skills, academic autonomy, and social integration, thereby averting the onset of social deprivation [King et al., 2021].The satisfaction of fundamental social needs has been instrumental in the genesis and evolution of public spaces: well-appointed venues for individuals to convene, communicate, and interact with one another. The fundamental function of student housing at this stage is to foster social interaction, to establish a conducive environment for meeting, and, naturally, to cultivate a sense of community [Dremova, Sheglova, 2020].

A substantial corpus of research on the refurbishment of student housing has demonstrated that these spaces can be adapted to meet the diverse needs of students [Elnagar et al., 2021; Cascone, Sciuto, 2018; Khajehzadeh, Vale, 2016]. To promote socialization and cultivate a sense

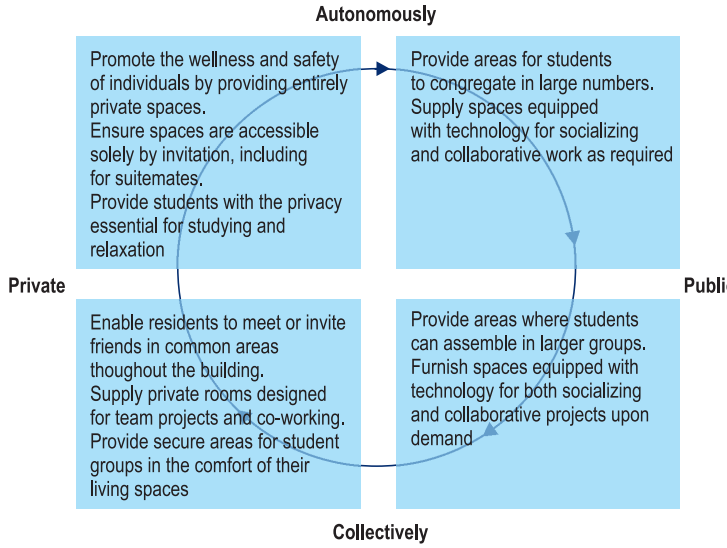


**Figure 5.** Characteristics of student housing Infrastructure (based on [Niemi, 2021])

of community, these spaces should be designed to offer designated areas for both work and leisure activities, thereby facilitating interaction and collaboration in a group context.

This understanding is further supported by the findings that student success rates are closely associated with the quality of support services available on campus [Baugus, 2020]. International students frequently seek co-curricular services that promote academic enhancement, such as computer and skill labs [Lau et al., 2018]. In the complex social environment of student housing, fostering a sense of belonging becomes critical (Wang, Mallinckrodt, 2006). Research indicates that socio-academic integration, defined as engaging in career planning with instructors or advisors and collaborating with peers, enhances students' sense of belonging [Garza et al., 2021]. Furthermore, the provision of supportive campus environments, offering resources for academic success, non-academic coping mechanisms, social support, and promoting diversity, has been shown to bolster the sense of belonging, alongside perceptions of relationships with staff and fellow students [Ibid.].

### 3.3. The Intellectual 'wheel'

The intellectual 'wheel' encompasses three aspects of human need: cognitive, aesthetic, and self-actualization. The first aspect, the possibility and comfort conditions for the acquisition of new knowledge, can be realized through the facilitation of learning in domestic settings, dedicated workspaces, and libraries.

The aesthetics, defined as the perception of harmony and beauty, play a pivotal role in the environment where students reside, work, and interact with others. This environment encompasses not only the aesthetic qualities but also the beauty of a sustainable environment, underscoring the significance of integrating ecological considerations into aesthetic evaluations [Stieldorf et al., 2020].

The sensory dimension of their surroundings plays a pivotal role in shaping their daily experiences and interactions, thereby underscoring the critical need for thoughtfully designed spaces that not only meet functional requirements but also enhance the overall quality of student life through their visual and experiential appeal.In this regard, the design, colors, and interior are equally important.To make intellectual activity accessible and achievable for the individual, it is essential to take care to provide an environment that is comfortable for the individual. While the primary objective of the university is the transfer of knowledge, the creation of favorable conditions for work and life is also of significant importance. The European experience demonstrates that the development of a favorable environment for academic work and creativity necessitates the allocation of substantial resources. However, some universities aspire to transform public space into works of art while maintaining its functionality [den Heijer, Tzovlas, 2014].

Another central thesis proposes a shift in focus to the conception of a Fifth Generation University (5GU), centered around the concept of human-sustainable development [Gaete, 2023]. This innovative model reimagines the university as an ecosystem where individuals, engaged in the pursuit of knowledge and innovation, do so within a framework that emphasizes sustainability, inclusivity, and well-being. Contrary to Humboldt's emphasis on "seclusion and freedom" as fundamental principles, the 5GU model adopts a more integrated and holistic approach to the educational environment. In the contemporary discourse on university development, the emphasis on freedom (in learning processes, research activities, political

expressions, and self-governance) remains paramount. However, the integration of sustainable and human-centric principles offers a novel perspective on the coexistence of privacy and communal living.

In the 5GU context, it is important to grant students the autonomy to select their learning and leisure methodologies. This is in conjunction with recognizing the significant role that timely solitude plays — not only for relaxation and recuperation but also as a catalyst for academic and research productivity. This approach acknowledges the necessity of solitude for personal and academic growth, while also fostering a community that supports sustainable living practices and social well-being.

The 5GU model, which is employed in the design and management of student accommodations, prioritizes more than just the logistical aspect of providing roommate choices. It aims to cultivate an environment that promotes student socialization and well-being in ways that align with sustainability and inclusivity goals. It is necessary to note that this approach addresses concerns such as anxiety and the perception of student housing as unwelcoming, as evidenced by contemporary research [Fosnacht et al., 2020]. By creating living spaces that support both individual and collective needs, this model embodies the principles of a human-sustainable-centered university.

In the context of promoting privacy and self-directed learning, it is essential to provide students with private study spaces (See Fig. 5). In this regard, four distinct types of learning environments are identified, each characterized by its specific functional attributes. These spaces effectively integrate social interaction and intellectual pursuit, addressing the diverse needs of the student population. By strategically designing these areas, educational institutions can create an environment that supports a harmonious balance between collaborative engagement and solitary reflection, nurturing the holistic development of each student.

A further component of the intellectual “wheel” is self-actualization, which signifies the cultivation of students’ personalities, novel competencies, and latent potential through educational and extracurricular endeavors. A multitude of studies have demonstrated a direct correlation between student satisfaction with leisure activities and their academic performance, autonomy, and self-efficacy [Jordan et al., 2018; Yasartürk, 2019; Jdaitawi et al., 2020]. Concurrently, the efficacy of individual and group leisure activities in fostering independence is equivalent, exhibiting variability depending on the personal attributes of the student.

The aforementioned regularity is attributable to the fact that, in contrast to learning activities, during leisure time activities, an individual's internal motivation (satisfaction, interest, etc.) predominates over external motivators (e.g., grades, ratings). This phenomenon fosters the development of internal motivation in other types of activities as well. A student who predominantly exhibits intrinsic motivation has been shown to demonstrate greater autonomy in the mastery of knowledge and skills, as well as a propensity towards proactivity and creativity when compared with a student who predominantly exhibits extrinsic motivation. Furthermore, such students have been observed to possess a moral attitude towards education, evidenced by a reduced tendency to engage in academic dishonesty (i.e., cheating and other forms of falsification of academic results) [Miller et al., 2011].

The necessity of developing a diverse campus infrastructure is further justified by arguments derived from C. Jennings' "70:20:10" model of learning [Clardy, 2018; Blackman et al., 2016]. Methodological researchers contend that learning transcends mere engagement with presented information; it also involves undertaking practical tasks related to the studied problem. Consequently, a student may acquire a mere 10% of the curriculum through passive learning methods such as attending lectures and reading literature. Another 20% is absorbed through social learning that occurs during interactions with instructors and peers. The majority, or 70%, of learning happens through experiential or problem-based learning. This suggests that 90% of the educational process occurs outside the traditional classroom setting, underscoring the significant role that experiential interaction plays in developing students' social capital and in realizing the educational process to its fullest. On average, 21% of students with high study intensity and 19% with medium study intensity reside in dormitories. A further analysis of age groups according to study intensity reveals that the youngest students exhibit a high level of study intensity [Gwosć et al., 2021, p. 235]. This finding underscores the imperative to tailor the student housing infrastructure to facilitate social interaction and collaborative practical work. Therefore, it must be ergonomic and user-friendly, integrating solutions that seamlessly blend the digital university environment with student housing infrastructure.

It is crucial to allocate particular attention to the establishment of environments conducive to collaborative student initiatives, such as co-working areas and conference rooms. The significance of academic cooperation

among students is underscored, as collaboration within universities frequently paves the way for expanded career prospects and enhanced student academic achievements. Moreover, it contributes to the generation of positive economic externalities on a broader scale. A substantial body of research has underscored the pivotal role of university-student collaborations in propelling the sustainable growth of the global economy, particularly in dynamic and uncertain environments [Caniglia et al., 2018; Zulkifli et al., 2019; Singh et al., 2023].

As delineated in the aforementioned model, it is evident that to fulfill and stimulate cognitive needs within the context of student housing, the infrastructure must be designed to address the requirements of more foundational levels (Fig. 6).

### 3.4. Sustainability at student housing

A significant focus of The Class Conference 2023 was the considerable obstacles encountered in incorporating Environmental, Social, and Governance (ESG) principles into the student housing sector. As in all markets, decision-makers encounter difficulties in creating uniform metrics, implementing technical solutions, and clarifying responsibilities. Nevertheless, there is an increasing demand for ESG reporting from students, investors, and developers. This growing demand has led to a pressing need for immediate action, comprehensive reporting, and a coordinated industry effort to navigate the intricacies of integrating ESG principles into student housing strategies.

There is a consensus among scholars that the efficient use of student housing resources hinges on the judicious design and equipping of such facilities, in addition to the effective management of resources. This assertion is twofold: first, it is incumbent upon the state and society, as the primary investors in public higher education, to ensure the efficient and appropriate management of assets; second, it is equally crucial for the well-being of students. Research indicates that the condition and serviceability of a university's physical resources, including student housing, is a factor in the decision to apply to a particular university [Vidalakis et al., 2013].

The essential attributes of student housing infrastructure must encapsulate a range of features to support an enriching living and learning environment [Poutanen et al., 2015]. Firstly, there should be a pronounced openness to the external environment and the region, making the area

appealing to residents. The design must emphasize multifunctionality and transformability, allowing spaces and equipment within the student housing environment to adapt to various needs and activities. Furthermore, the presence of a robust entrepreneurial ecosystem, coupled with comprehensive consumer services, is instrumental in cultivating a dynamic and nurturing community environment. The infrastructure should foster social networking by incorporating open spaces conducive to work and study, thereby facilitating collaboration and interaction among students. Lastly, the responsible use of resources is paramount. This encompasses the implementation of environmentally friendly spatial solutions, the promotion of judicious consumption, and the assurance of environmentally sound disposal practices. The synergy of these characteristics is instrumental in creating a student housing infrastructure that not only fulfills the practical requirements of its inhabitants but also contributes to their academic, social, and environmental well-being.

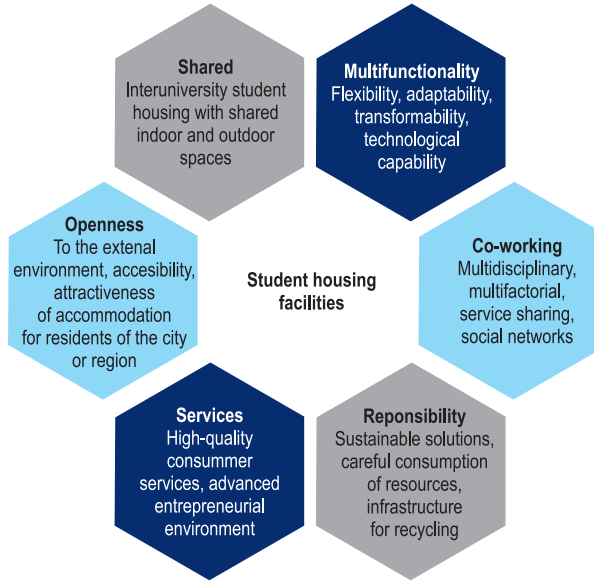


**Figure 6.** Characteristics of Student Housing Infrastructure (based on [Poutanen et al., 2015])

Therefore, contemporary university student housing should satisfy multiple sustainable criteria. By addressing the fundamental needs of students, such housing can facilitate social adaptation and promote the development of research and entrepreneurial activities among its residents. To achieve this, the design should integrate spaces that promote privacy and public events, areas conducive to both living and learning, and be ergonomically and environmentally friendly, technologically advanced, and seamlessly integrated into the urban infrastructure.

Therefore, the integration of sustainable architecture and the environmental behaviors of students underscores the holistic approach necessary to align student accommodations with the cities or region's advancement towards a sustainable and ecologically responsible future. Within the broader spectrum of behaviors aimed at minimizing the environmental impact of production and consumption, recycling emerges as a pivotal practice.

# Chapter 4. Blueprints for Sustainability: Crafting the Assessment of Student Living

The objective of this chapter is to delineate the methodological framework underlying our study and its findings. Our analysis employs a quantitative content analysis approach grounded in documentary data, encompassing open university and student statistics, university reports, and university websites. We have meticulously collected all available information pertaining to student housing options of a particular university from our sample. We have implemented a multi-criteria approach to evaluate the quality and sustainability of student housing. The selection of thirteen cities and universities in seven European countries was based on a set of parameters, with the first criterion being the location of the universities in seven different sub-regions of Europe. The second criterion was the inclusion of two universities per country, one central and one regional, based on their appearance in the QS World University Rankings 2022.

In light of the prevailing circumstances, it is necessary to acknowledge the mounting concern among young people, particularly students, regarding sustainability issues [Berglund et al., 2020; Leal Filho et al., 2023]. This heightened awareness and commitment to environmental stewardship are evident in their decisions, including those pertaining to student housing. Accommodations that prioritize sustainability not only align with the values of environmentally conscious students but also become increasingly appealing options for them. Consequently, it is essential to integrate sustainable practices and features into student housing to attract young individuals who prioritize such values in their living environments.

The map delineates the geographical features relevant to this study (Fig. 7). The analysis encompassed 13 universities and 167 student housing facilities located in various European cities, including Navarra (Spain), Manchester and Glasgow (UK), Paris and Strasbourg (France), Rome and Milan (Italy), Helsinki (Finland), Berlin and Munich (Germany), Prague and Brno (Czech Republic), and St. Petersburg (Russia).

The data was collected during the 2021–2022 through a comprehensive analysis of media materials obtained from the official websites of university student housing.The analysis revealed that the majority of the sample consisted of university halls (40%) and student residences (34%).

**Figure 7.** Territorial coverage of the study

The commute time to these off-campus residences can vary significantly. The data indicates that 40% of student accommodations are operated by universities, 31% by private commercial enterprises, 13% by state entities, and 11% by non-profit organizations or NGOs. In Italy, Spain, and France, a significant proportion of student accommodations are off-campus student residences and Colegio Mayors (Spain). In Finland, the majority of student accommodations are self-catering flats. The remainder of the sample, including the Czech Republic, the United Kingdom, Germany, and Russia, are on-campus student accommodations, such as university halls.

The present model was inspired by Maslow's theory, but it advances beyond his work by integrating his hierarchical layers into a more holis-

tic framework. This model led to the creation of categories for analysis, which were built from content analysis of documentary data. A matrix was created, consisting of all student housing information provided by open sources about living conditions, fees, services offered, number of neighbors, activities provided for students, and so on. This list of features represents the different criteria in the present study. Typically, student housing contains similar information, as students must select their place of residence and be informed. However, some parts of the sample provide less information, and the criteria for the high number of missing values were not included in the analysis. All the criteria determined for the analysis were classified into categories, enabling us to underscore the primary benefits of student accommodations and further incorporate best practices into the development of student housing.

The categories that were determined are as follows: domestic, economic, service, organizational, social, and leisure. A prototype of this template, in conjunction with specific indicators (Table 2), was utilized to gather the necessary data for the study.

**Table 2.** Model Clustered indicators for analyzing student housing

| **Categories** | **Economic (domestic)** | **Additional services** | **Accommodation arrangements** | **Social (community)** | **Leisure / Learning offers** |
|---|---|---|---|---|---|
| Indicators | Cost of living | Vending machines | Dormitory type | Student self-government | Creative space |
| | Payment procedure | Cleaning, support services | Park and sports areas (outside) | Mentoring and seniors ship systems | Entertainment from the university |
| | Utility services (Wi-Fi) | Medical station, hospital | Access for guests | Social volunteering | Student adaptation trainings |
| | Installment/ Credit options | Cost of emergency calls | Concierge service | Academic and research activities | |
| | Special offers and discounts | Possibility to independently enhance the room | Form of accommodation for specific categories of students | Engagement of teachers in the students' social life | Availability of spaces for coworking, study areas, libraries |

| Categories | Economic (domestic) | Additional services | Accommodation arrangements | Social (community) | Leisure / Learning offers |
|---|---|---|---|---|---|
| | Optional services | Laundries, ironing rooms | Alcohol and tobacco sales | Leisure activities availability | |
| | Food service options | On-campus stores and pharmacies | Distance from classrooms | Availability of sports events | Organization of campus graduation/special events for graduates |
| | Technical equipment | Supplying storage rooms | Relation to the city center | Presence of creative activities | |
| | Furnishing | Baths, saunas, and swimming pools | Format of common room cleaning | Political Expression Opportunity | |
| | | Driving School | Control forms | | |
| | | Parking | Availability of security guards | | |
| | | Gyms and sports clubs | | | |

The analysis of student housing facilities employed a model that categorizes facilities according to the "wheels" of needs they address. The model's objective is twofold: first, to demonstrate how these facilities can directly address student needs, and second, to show how they can indirectly meet other student needs (See Appendix 1).

## 4.1. Unveiling Foundations

The model was constructed following an extensive analysis of a diverse sample comprising 167 student housing units across various paradigms in Europe. The initial step involved a thorough examination of international statistics on student populations and occupancy rates throughout European nations, including Russia, with a specific focus on Saint Petersburg. Across these countries, the dataset also reveals the share of international students in tertiary education, emphasizing the importance of accommodating the diverse needs of domestic and international students alike. This comprehensive statistical analysis offers a glimpse into the state of student

housing in several European countries, emphasizing the ongoing efforts to provide sustainable and quality accommodations that meet the evolving demands of the student population.

The figures delineate exhaustive statistics concerning student enrollments, occupancy rates, and the provision of Purpose-Built Student Accommodation (PBSA) across a range of European countries, encompassing the United Kingdom (UK), Germany, France, Spain, the Czech Republic, Italy, Finland, and Russia. The figures encompass the aggregate number of enrollments in tertiary education for the years 2021 and 2020, accentuating percentage differences that offer insights into trends in higher education. Furthermore, the document provides data on the percentage of students in tertiary education as a proportion of the population aged 20–24, drawing from Eurostat (2023) and the OECD (a).

From 2020 to 2021, the United Kingdom witnessed an uptick in higher education enrollment, with the figure surpassing 2.99 million in 2021. This period of growth also revealed a commendable ratio of Purpose-Built Student Accommodation (PBSA) beds to the total number of students, with cities such as London, Brighton, Canterbury, and Glasgow exhibiting a substantial supply of student housing. A similar trend was observed in Germany, where higher education enrollments increased to over 3.35 million in 2021. However, the availability of PBSA beds varied across cities such as Munich, Berlin, and Hamburg, highlighting a commitment to providing adequate student housing.

France and Spain have also reported increases in tertiary education enrollments, with France having approximately 2.8 million and Spain over 2.26 million in 2021. However, both countries presented different levels of PBSA bed availability across various cities, indicating regional disparities in student housing provisions. The Czech Republic, Italy, and Finland, with smaller student populations, likewise showed increases in enrollments and provided data on PBSA beds, highlighting efforts to accommodate the housing needs of students. Russia's data, while distinct in structure, revealed a substantial student population of over 1.18 million in 2021, with a significant portion of students aged 17–24. The country has a notable number of PBSA beds, reflecting a considerable effort to support student housing.

**Table 3.** Statistics about the number of students and occupancy rates across European countries including Russia

| **Country** | **Total number of enrollments in tertiary education 2021 (2020), % difference** *Source:* [OECD (a)] | **Students in tertiary education — as % of 20–24 years old in the population, 2021/2022** *Source:* [Eurostat, 2023] | **Number of beds in PBSA assets, 2021 (2022)** *Source:* [Bonard, 2023] | **Ratio of PBSA beds to the total number of students, Q3, 2021–2022** *Source:* [Savills Report, 2023] | **Share of international students on tertiary education, 2021** *Source:* [OECD (b)] |
|---|---|---|---|---|---|
| UK | 2,993,903<br>(2,734,157)<br>1.1% | *Source:* [HESA, 2023], Figure 5<br>2021/22<br>20 and under — 37%<br>21–24 — 28% | 516,604<br>(542,121) | London (31–31%)<br>*Source:* [Ward, 2021]<br>National (UK) (40–39%)<br>Brighton (36–40%)<br>Canterbury (40–37%)<br>Glasgow (33–31%) | 20% |
| Germany | 3,351,573<br>(3,280,032)<br>1.02% | 32.6% | 204,298<br>(222,755) | Munich (15–16%)<br>Berlin (11–12%)<br>Frankfurt (11–12%)<br>Hamburg (11–11%)<br>Cologne (7–8%) | 11% |
| France | 2,809,289<br>(2,748,317)<br>1.02% | 35.9% | 189,193<br>(215,186) | Aix-Marseille (21–21%)<br>Lyon (19–15%)<br>Ile de France (11–11%)<br>Lille (11–9%) | 9% |
| Spain | 2,261,063<br>(2,145,333)<br>1.05% | 40.5% | 62,706<br>(68,551) | Malaga (10–10%)<br>Barcelona (7–7%)<br>Sevilla (7–7%)<br>Madrid (7–7%)<br>Valencia (5–5%) | 4% |

| **Country** | **Total number of enrollments in tertiary education 2021 (2020), % difference**<br>*Source:* [OECD (a)] | **Students in tertiary education — as % of 20–24 years old in the population, 2021/2022**<br>*Source:* [Eurostat, 2023] | **Number of beds in PBSA assets, 2021 (2022)**<br>*Source:* [Bonard, 2023] | **Ratio of PBSA beds to the total number of students, Q3, 2021–2022**<br>*Source:* [Savills Report, 2023] | **Share of international students on tertiary education, 2021**<br>*Source:* [OECD (b)] |
|---|---|---|---|---|---|
| Czechia | 328,830 (318,679)<br>1.03% | 39.7% | 48,861<br>(55,619) | Prague (24–24%) | 16% |
| Italy | 2,096,778<br>(2,030,768)<br>1.03% | 35.4% | 38,641<br>(44,586) | Milan (6–6%)<br>Rome (2–2%) | 3% |
| Finland | 305,370 (295,924)<br>1.03% | 36.7% | 19,242<br>(38,667) | *Source:* [Kourris, 2022, p. 6]<br>Helsinki (23%)<br>Jyväskylä (24%)<br>Lund ( 22%)<br>Uppsala (22%)<br>Oulu (20%)<br>**Reference year for demand data — 2019/2020 and 2020/2021. Reference year for supply data — 2021 and 2022.* | 8% |
| Russia | *Source:* [Government of the Russian Federation, 2023]<br>1,183,822<br>(1,148,712)<br>2.97% | *Source:* The population by age [Russian Federal State Statistics Service, 2022]<br>Number of students by age on the start of 2021/2022 academic year: [Bondarenko et al.. 2023, p. 230]<br>17–19 — 23.32%<br>20–24 — 31.9% | *Source:* [Tass, 2023]<br>705,200 | *Source:* [Modern student life: how everything is arranged, 2023]<br>23% | *Source:* [Bondarenko et al., 2023, p. 231]<br>7.9% |

## 4.2. Enhancing well-being: Personal 'wheel'

The preliminary stage of our nationwide investigation into the student housing landscape concentrated on the evaluation of student housing's potential to promote student well-being. This exhaustive analysis aspired to provide a comprehensive viewpoint on the extent to which student accommodations tackle the multifaceted needs of students, thereby influencing their academic success and overall quality of life.

In this evaluative category, an in-depth analysis was conducted into the fundamental needs of students residing in the accommodations featured in the study. Key aspects under scrutiny included the dining options available within university student housing, encompassing the spectrum of food service offerings, the provision of kitchens, the presence of food vending machines, and the accessibility of food stores. Additionally, we examined the logistical aspects of student life, focusing on the distribution of commute times to classes, whether by public transportation or on foot, across the various campuses in our sample.

A comprehensive investigation was conducted into the security features of the university student accommodations. In this investigation, various aspects were assessed, including security and access control measures, the availability of medical support, and the ease of contacting emergency services. Additionally, policies surrounding alcohol and tobacco purchases were examined. Lastly, the household characteristics inherent to the studied university student housing were scrutinized. These characteristics included room amenities, parking availability, and the possibilities for utilizing various services.

### 4.2.1. Financial requirements

The available options for students' housing include living in dormitories or PBSAs, either independently or with one or more roommates in a shared room. Alternatively, students can opt for accommodation through an aggregation service, which can provide studios or apartments ranging from one to four rooms. The financial analysis encompasses all available options (Fig. 8). Consequently, the cost of housing for each category is not the primary focus; rather, the analysis examines the range of housing options available to students at each university, considering factors such as the city and country selected.

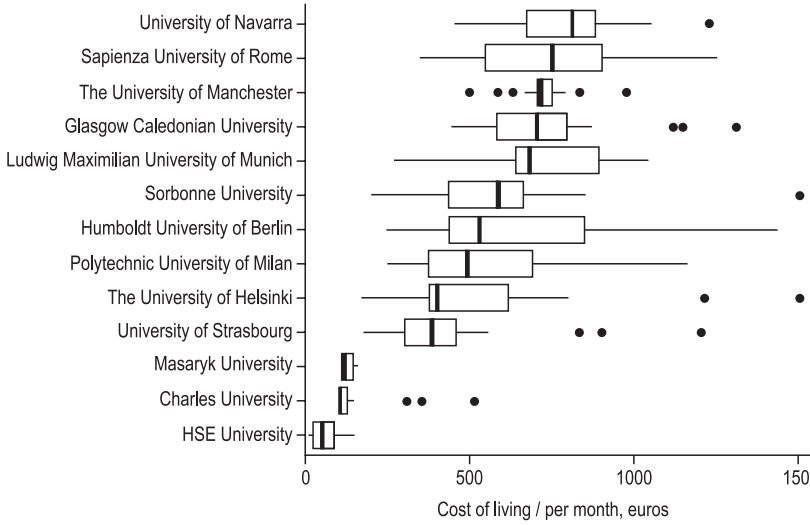


**Figure 8.** The distribution of cost of living per month across university's student housing, euros

The cost of living in Russia, the Czech Republic, and the UK has been converted into euros using the average European Central Bank exchange rate for the period of January 1, 2021 — January 1, 2023, which falls during the period of data collection for this book. The highest median for cost of living per month is for students at the University of Navarra and Sapienza University of Rome. Conversely, the cost of living in Russia and the Czech Republic is the lowest. These figures are anticipated to be accurate, particularly for Russia, given that students in Russia also predominantly reside with one or more roommates.

### 4.2.2. Exploring the Spectrum of Food Options in Student Housing

A survey of student housing options reveals that less than half of the options offer full meals to their residents, a service that is often included in the cost of housing. The availability of this service is advantageous for students, as it can facilitate balanced and regular meal consumption, which in turn can positively impact educational outcomes (Table 4). The content

**Table 4.** Student dining options on university student housing

| University | Food service options | | | Kitchen availability | | Food vending machines | Food store accessibility | |
|---|---|---|---|---|---|---|---|---|
| | Complex meals | Cafeteria / bistro | Nearby cafes | Personal | Common | | On PBSA | < 15 min |
| *Germany* | | | | | | | | |
| Ludwig Maximilian University of Munich | + | + | + | + | + | + | – | + |
| Humboldt University of Berlin | – | + | + | + | + | – | + | + |
| *Finland* | | | | | | | | |
| The University of Helsinki | + | + | + | + | + | * | * | + |
| *France* | | | | | | | | |
| Sorbonne University | + | + | + | + | + | + | – | + |
| Université de Strasbourg | – | + | + | + | + | * | – | + |
| *UK* | | | | | | | | |
| The University of Manchester | – | + | + | – | + | + | – | + |

| University | Food service options | | | Kitchen availability | | Food vending machines | Food store accessibility | |
|---|---|---|---|---|---|---|---|---|
| | Complex meals | Cafeteria / bistro | Nearby cafes | Personal | Common | | On PBSA | < 15 min |
| Glasgow Caledonian University | + | – | + | + | + | + | – | + |
| *Italy* | | | | | | | | |
| Politecnico di Milano | + | + | + | + | – | + | – | + |
| Sapienza Università di Roma | + | + | + | + | * | + | – | + |
| *Spain* | | | | | | | | |
| Universidad de Navarra | + | – | + | + | + | + | – | + |
| *Czech Republic* | | | | | | | | |
| Masaryk University (Brno) | + | + | + | + | + | + | – | + |
| Charles University (Prague) | + | + | + | + | + | + | + | + |
| *Russia* | | | | | | | | |
| HSE University (St. Petersburg) | + | – | + | – | + | + | – | + |

(+) available, (–) not available, * data is not found

analysis revealed that a canteen is present in 26% of residences, 8% offer a special order option, and 14% include the cost of meals in the accommodation fees. The analysis also identified the practice of providing special coupons for preferential meals to students in Spain, France, Italy, and Finland.

Consequently, all student housing options provide students with the opportunity to purchase groceries in a store within a 15-minute walking radius and subsequently utilize a kitchen for independent cooking, either individually or in shared settings, depending on the type of accommodation. Moreover, all student housing options from the sample provide access to nearby cafes, and in the majority of cases, there is a dedicated student cafeteria or bistro on the residence premises (28% of student housing). Vending machines, which offer students the option to purchase both snacks and water, have also gained popularity.

### 4.2.3. Commute Time to Classes

In considering the characteristics of student housing, it is possible to identify infrastructure features such as transport accessibility, the availability of specialized transport for students, the existence of medical stations or student clinics, emergency services, security services, and pass control. In addition, the option or restriction of purchasing alcohol/tobacco products within the student housing may be considered.

As illustrated in Figure 9, a comparative analysis of average commute times for students between their place of residence and the university across various European countries is presented, with a distinction made between travel by public transport and on foot. For each country listed — Germany, Finland, France, the UK, Italy, Spain, the Czech Republic, and Russia — the graphic displays two bars representing the average commute time in minutes.

In European countries, the majority of students report the duration of their commute to university. Commute times on foot are similar across all countries, with Spain and Italy displaying some of the shortest walking durations. However, Russia, particularly in St. Petersburg, stands out with the longest commute time by public transport, significantly exceeding those of other countries. In this city, most student housing residents rely on public transport, notably the subway, resulting in significantly longer commute times compared to their counterparts in other European cities.

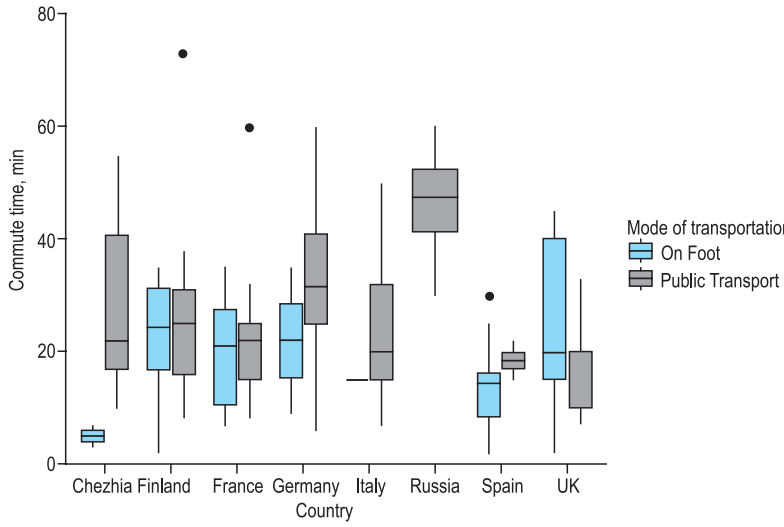


**Figure 9**. The distribution of commute time to classes using public transport (metro, bus, train) and on foot, minutes (among campuses from sample)

This phenomenon is further compounded by the geographical distribution of HSE educational buildings across different city districts, creating additional challenges for students. Addressing this issue necessitates strategic planning to allocate dormitory placements in closer proximity to academic buildings or the provision of dedicated shuttle services between student housing and academic facilities.

### 4.2.4. Student Safety Services and Regulations

A review of the data reveals (Table 5) that student safety services and regulations vary across different countries and types of student housing. However, there are notable similarities. For instance, the sale and consumption of alcoholic beverages are prohibited in most student accommodations, and the majority of rooms are designated as non-smoking areas. Finland represents an exception to this pattern, as the student housing included in our sample consists primarily of residence buildings offering apartment rentals. Consequently, the living conditions in these Finnish residences closely resemble those of ordinary city apartments. Further-

**Table 5.** Security characteristics of the studied university student housing

| University | Security and access control | | | Medical support | | Ability to call emergency services | Alcohol and tobacco purchases |
|---|---|---|---|---|---|---|---|
| | Conci-erge | Specialized security service | Passing rules | Medical station | Student hospital | | |
| *Germany* | | | | | | | |
| Ludwig Maximilian University of Munich | 1/5 | 1/5 | 1/5 | 2/5 | 0/5 | * | 1/5 |
| Humboldt University of Berlin | 2/6 | * | 0/6 | 2/6 | 0/6 | 2/6 | * |
| *Finland* | | | | | | | |
| The University of Helsinki | 11/15 | 10/15 | 0/15 | 0/15 | 0/15 | 8/15 | 15/15 |
| *France* | | | | | | | |
| Sorbonne University | * | 1/6 | 1/6 | 1/6 | 0/6 | 6/6 | 0/6 |
| Université de Stras-bourg | 1/18 | 17/18 | 16/18 | 0/18 | 0/18 | 18/18 | 2/18 |
| *UK* | | | | | | | |
| The University of Manchester | 20/20 | 20/20 | 0/20 | 1/20 | 0/20 | * | 9/20 |
| Glasgow Caledonian University | 20/24 | 22/24 | * | 12/24 | 11/24 | 13/24 | 0/24 |

| University | Security and access control | | | Medical support | | Ability to call emergency services | Alcohol and tobacco purchases |
|---|---|---|---|---|---|---|---|
| | Conci-erge | Specialized security service | Passing rules | Medical station | Student hospital | | |
| *Italy* | | | | | | | |
| Politecnico di Milano | 12/12 | 10/12 | 12/12 | 0/12 | 0/12 | 2/12 | 0/12 |
| Sapienza Università di Roma | 8/8 | 4/8 | 8/8 | 0/8 | 0/8 | 8/8 | 0/8 |
| *Spain* | | | | | | | |
| Universidad de Navarra | 1/23 | * | 9/23 | 3/23 | 1/23 | 2/23 | 0/23 |
| *Czech Republic* | | | | | | | |
| Masaryk University (Brno) | 3/5 | * | 3/5 | * | * | 5/5 | * |
| Charles University (Prague) | 13/13 | 2/13 | * | 2/13 | 0/13 | 13/13 | * |
| *Russia* | | | | | | | |
| HSE National Re-search University (St. Petersburg) | 3/12 | 6/12 | 6/12 | 0/12 | 2/12 | 12/12 | 0/12 |

* *data is not found*

more, smoking and the consumption of alcoholic beverages are permitted in the bars of 9 out of 20 student housing facilities at the University of Manchester. This practice can be largely attributed to the national culture surrounding British bars.

The implementation of 24-hour video surveillance and dedicated security measures for student housing has become a prevalent practice. According to the findings of our survey, 59% of these residences are under the protection of specialized security organizations. However, a review of security protocols reveals that certain housing providers do not make this information readily available on their websites.

Emergency services encompass the remediation of pressing utility-related issues, such as plumbing and electrical work. In 70% of student housing, an emergency call for technical assistance is included in the cost of living, while some student housing incorporates separate insurance for emergency services. In Finland, for instance, only approximately half of all student apartments are insured against fire. In certain instances, tenants are obligated to install smoke detectors and can opt to purchase insurance for their apartments. In the absence of such provisions, the responsibility for ensuring the safety of the apartment rests entirely with the tenant. In Spain, residents are required to pay a fee for emergency services. Consequently, some student housing initially included such insurance in the rental agreement. In Russia, the financial support for emergency services is provided from the federal budget, and consequently, it is free of charge for students regardless of their country of residence. This is a significant support for students in need of urgent assistance [Federal Law “On emergency services and the status of rescuers”, 22.08.1995]. Considering medical support, the biggest attention to it was paid by Glasgow Caledonian University — in a half of residences there is first aider on the territory of the student housing as well as medical center in the university.

### 4.2.5. Household characteristics of the student accommodations

The household characteristics of the sample student housing provide a comprehensive overview of the living conditions and amenities available to students. These features play a crucial role in ensuring comfort, convenience, and a supportive living environment conducive to academic success and personal well-being. Among the key household characteristics

observed are the availability and quality of room amenities, which include furnishings, storage solutions, and study spaces designed to meet the needs of student residents.

Furthermore, the configuration of living spaces, whether individual or shared, exerts a substantial influence on the social dynamics and privacy levels within student housing. Shared spaces, such as kitchens and lounges, have been shown to facilitate community building and social interaction, while private rooms offer solitude and quiet necessary for study and relaxation. These household characteristics collectively shape the student housing experience, underscoring the importance of thoughtful design and management in creating a nurturing and efficient living environment for students (Table 6).

A critical component of university life is the availability of parking facilities, which play a pivotal role in facilitating the transportation of students between their residences and the campus or nearby locations. The provision of ancillary services, such as laundry, cleaning, and maintenance within the housing complex, enhances the overall convenience for students. This contributes to an environment where students can prioritize their academic pursuits and personal growth without being encumbered by household responsibilities.

As indicated by the data presented in Table 6, the characteristics of housing facilities and the availability of support services vary across different countries and universities. For instance, the Finnish student housing system is distinctive in that universities do not generally provide accommodations; rather, students procure apartments through specialized private and public organizations. These apartments frequently include private bathrooms and kitchens, thereby offering students a degree of autonomy. However, this arrangement also entails the responsibility of furnishing their spaces, as only 8 out of 15 housing options are fully or partly furnished, with just one providing bedding and crockery to students. In contrast, student accommodations in other countries usually come fully furnished. In the Czech Republic, the United Kingdom, and Germany, for instance, dormitories are typically equipped with all necessary home appliances.

While not all dormitories provide information about linens and tableware, HSE student housing is distinguished by its lofty standards in providing these items. The majority of universities are equipped with self-service laundry facilities, with a third also offering full-service laundry options. Parking availability is particularly notable in Finland, the UK and Germany.

**Table 6.** Household characteristics of the sample student housing

| University | Room amenities | | | | | Parking | Possibilities to use services | | |
|---|---|---|---|---|---|---|---|---|---|
| | Full furnishing | Home appliance | Linens, tableware | Individual bathroom | Self-service laundry | | Cleaning | Laundry | Housing and communal services |
| *Germany* | | | | | | | | | |
| Ludwig Maximilian University of Munich | 5/5 | 5/5 | 1/5 | 5/5 | 5/5 | 4/5 | 3/5 | 5/5 | 3/5 |
| Humboldt University of Berlin | 6/6 | 5/6 | 1/6 | 6/6 | 3/6 | 5/6 | 3/6 | 2/6 | 3/6 |
| *Finland* | | | | | | | | | |
| The University of Helsinki | 8/15 | 15/15 | 1/15 | 15/15 | 15/15 | 15/15 | 3/15 | * | 4/15 |
| *France* | | | | | | | | | |
| Sorbonne University | 6/6 | 2/6 | 1/6 | 3/6 | 4/6 | 3/6 | 5/6 | 3/6 | 5/6 |
| Université de Strasbourg | 18/18 | 18/18 | * | 17/18 | 13/18 | 11/18 | * | 3/18 | * |
| *UK* | | | | | | | | | |
| The University of Manchester | 20/20 | 20/20 | * | 10/20 | 20/20 | 19/20 | 1/20 | * | * |
| Glasgow Caledonian University | 24/24 | 24/24 | * | 14/24 | 24/24 | 18/24 | 19/24 | 0/24 | 19/24 |

| University | Room amenities | | | | | Parking | Possibilities to use services | | |
|---|---|---|---|---|---|---|---|---|---|
| | Full furnishing | Home appliance | Linens, tableware | Individual bathroom | Self-service laundry | | Cleaning | Laundry | Housing and communal services |
| *Italy* | | | | | | | | | |
| Politecnico di Milano | 12/12 | 10/12 | 7/12 | 8/12 | 12/12 | 8/12 | 11/12 | 0/12 | 11/12 |
| Sapienza Università di Roma | 8/8 | 7/8 | * | 6/8 | 8/8 | 4/8 | 8/8 | 8/8 | 8/8 |
| *Spain* | | | | | | | | | |
| Universidad de Navarra | 23/23 | * | 11/23 | 13/23 | 21/23 | 4/23 | 14/23 | 7/23 | 18/23 |
| *Czech Republic* | | | | | | | | | |
| Masaryk University (Brno) | 5/5 | 5/5 | * | 2/5 | 4/5 | 2/5 | 3/5 | 0/5 | 5/5 |
| Charles University (Prague) | 13/13 | 13/13 | 5/13 | * | 13/13 | 3/13 | 13/13 | 0/13 | 13/13 |
| *Russia* | | | | | | | | | |
| HSE National Research University (St. Petersburg) | 12/12 | 5/12 | 11/12 | 6/12 | 11/12 | 1/11 | 3/12 | 1/12 | 12/12 |

* *data is not found*

In terms of room amenities, students of Ludwig Maximilian University of Munich, The University of Helsinki, The University of Manchester, Glasgow Caledonian University and Charles University (Prague) have the highest proportion of amenities. Housing and communal services are mostly represented in Italian, Czech Republic and Russian student housing. Cleaning services, on the other hand, tend to be less available in Russian and Finnish student housing.

### 4.2.6. The Integration of student housing into the urban landscape

Therefore, it is useful to consider the student housing clustering from the sample in terms of distance from the city center (Fig. 10). Thus, one might conclude that student housing is overwhelmingly located within the city limits (95%). About a third of the residences are located close to the central part of the city. Despite students preferring housing in the city center, the resources of universities can be very limited due to the high cost of land and real estate in prestigious areas. Consequently, the majority of the student dormitories in the city center are affiliated with the oldest universities or are reconstructed buildings that were not originally designed for student housing.

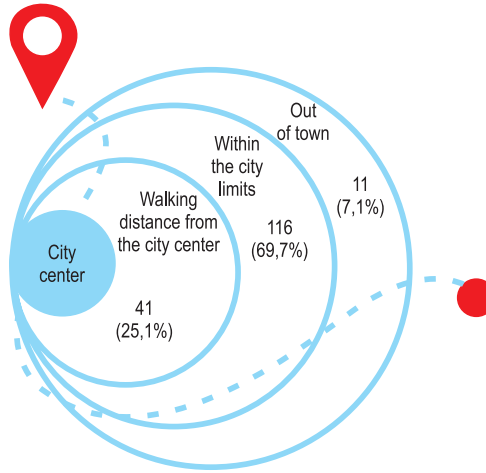


**Figure 10.** Distribution of the sample by distance from the city center

In considering the context of our model of student housing, it is evident that Figure 11 presents a vision that emphasizes the creation of a sustainable environment within student housing. This vision is predicated on the notion that ecological consciousness and student living can coexist harmoniously. The concept of a sustainable environment is not confined to green building practices or energy efficiency; rather, it is intended to be embedded into the very fabric of the student living experience. This vision for student housing encompasses more than mere physical spaces; rather, it is conceptualized as vibrant ecosystems that foster sustainable lifestyles

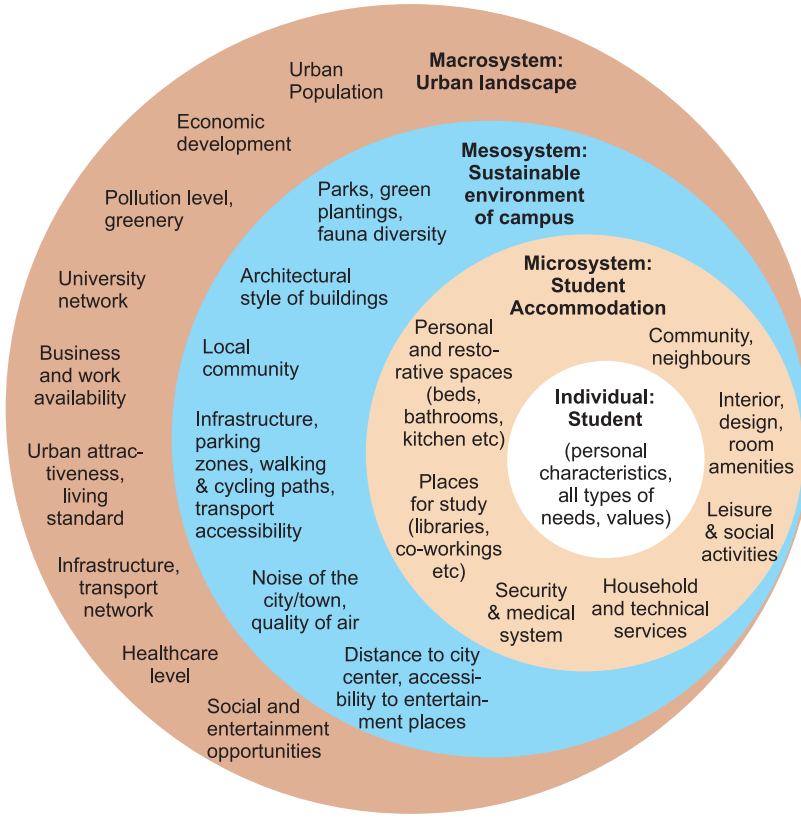


**Figure 11.** Ecosystem of the model of holistic and sustainable student housing (Own elaboration)

[Chiang et al., 2014]. Key components of this ecosystem include the utilization of renewable energy sources, the implementation of waste reduction programs, and the integration of green spaces that promote biodiversity and mental well-being. This multifaceted approach is designed to educate and encourage students to adopt sustainable practices in their daily lives, thereby cultivating a culture of environmental stewardship (2020).

The model posits an integration with the urban landscape, thereby suggesting that student housing should not exist in isolation but rather interact dynamically with the surrounding community and natural environment. This integration emphasizes the role of student housing in the broader urban ecosystem, potentially including features such as community gardens, shared public spaces, and pathways that encourage walking or cycling. The model's advocacy for a living-learning environment that benefits both students and the local community is predicated on the integration of student housing within a well-considered urban landscape, thereby creating a seamless blend of academic, social, and environmental objectives. This holistic approach enhances the student experience and contributes to the sustainable development of the urban area [Dolley et al., 2022].

### 4.3. Student housing Social 'wheel'

The present study investigates the opportunities that student housing offers for meeting the social needs of its residents, as indicated by the model that has been developed. These opportunities are said to include a variety of activities/choices that activate social contact — time spent together, guest invitations into the residence, participation in leisure/recreational activities, as well as room assignment options, access to urban centers, parks, and outdoor sports facilities [Windhorst and Williams, 2015]. The subsequent analysis will categorize these features into three distinct subgroups: students' social comfort within their housing, entertainment possibilities provided for students, and the inclusion of student housing in the general urban context.This approach will allow for a comprehensive discussion of how student accommodation can enrich community life and promote social integration among students both inside and outside their hostel or dormitory.

The distribution of student dormitories on the St. Petersburg student housing of the HSE exhibits a city distribution that corresponds to the general trend of the sample. Specifically, four of the twelve buildings

(33.3%) are located in the historical center or near the city center, while eight buildings (66.7%) are situated in different areas of the city. It should be noted that housing options outside of the city center are not provided.

In the context of environmental psychology, the consideration of housing options that accommodate pets is of particular relevance, given the potential stress that the separation from a pet can induce in students, potentially impeding their socialization. As housing conditions are not universally designed to accommodate animals, it is important to identify housing options that are conducive to pet ownership, particularly for students. The findings of the analysis, as outlined by this indicator, are as follows: students at only three universities in the sample (Politecnico di Milano, The University of Helsinki, University of Navarra) have the opportunity to reside in student housing with pets; the websites of four universities do not provide any information on this matter; and the residences of the remaining six universities do not offer accommodations for pets.

### 4.3.1. Comfortable social environment within student housing

According to the findings of the Student Living Monitor, a comprehensive survey conducted across Europe to assess the impact of students' living environments on their well-being and happiness, there is evidence of a correlation between relationships, social impacts, and mental health scores [The Class Foundation, 2023]. The promotion of supportive communities and good neighborliness among students has the potential to contribute positively to their well-being. Furthermore, even minimal engagement with in-house facilities and services is linked to improved well-being outcomes. This observation carries two implications. First, it underscores the importance of providing top-tier facilities and services while motivating student participation. Second, it emphasizes the necessity of addressing isolation and loneliness by enhancing access to specialized support services.

The distribution of student housing options across the universities under study is illustrated in the accompanying visual (Fig. 12). The categories for student housing are divided into three groups. Firstly, accommodations offering only single rooms, without the option for students to choose a roommate, are identified. The remaining offerings for rooms or apartments designed for two or more students are found in the majority of universities, which offer an option to live without roommates. However, at HSE Saint Pe-

tersburg, the majority of options are double occupancy or shared with three or more roommates, a practice that is less common in other universities. Notably, student housing at the University of Navarra in Spain and the University of Manchester in the UK predominantly involves single occupancy.

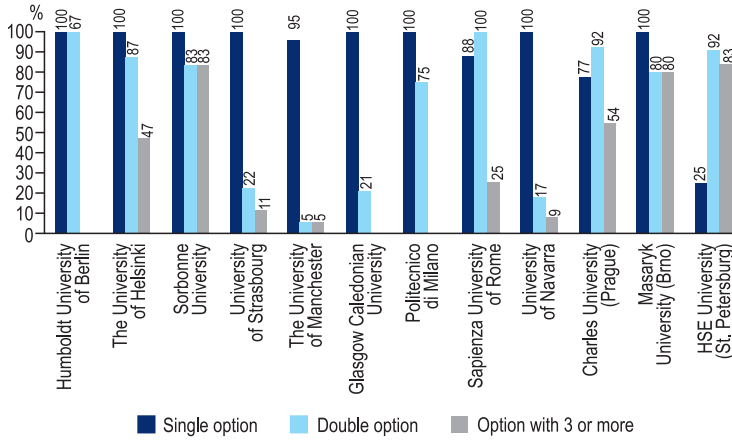


**Figure 12.** Options for roommate choice in student residences, %

A comparative analysis of student housing policies reveals a notable degree of flexibility in accommodating roommate preferences at institutions such as Glasgow Caledonian University in Scotland, the University of Strasbourg in France, Italy's Technical University of Milan, and the University of Rome La Sapienza, where students' choices are met in 75% or more of the cases. In contrast, the HSE student housing in St. Petersburg exhibits a moderate degree of flexibility in this regard. Conversely, students at Humboldt University Berlin, the University of Manchester, and Charles University exhibit the least autonomy in selecting their roommates.

The observed variability in roommate selection policies is of interest, as it appears to reflect both national and institutional tendencies. For instance, Italian student accommodations consistently offer a higher level of autonomy in choosing a roommate, while British universities display a more restrictive approach. This suggests that the freedom to select roommates may be influenced by regional housing market conditions and the distinct corporate culture of the universities themselves.

The trend towards single occupancy in student housing presents a multifaceted challenge for Purpose-Built Student Accommodations (PBSAs), offering both opportunities and difficulties. The Student Living Monitor (SLM) survey underscores a salient link between social connections and mental well-being, identifying loneliness as a pervasive concern that adversely impacts student well-being. This phenomenon is particularly salient in France, where half of the respondents reported feelings of loneliness, and remains significant in Portugal (48%), Denmark, and the United Kingdom (46% each). In contrast, Italy and Spain (38% each), along with Belgium (39%), report lower instances of loneliness, indicating diverse experiences with social isolation across various European contexts [The Class Foundation, 2023].

### 4.3.2. Cultural, leisure opportunities, and social-responsible engagement

The optimal student housing should offer a wide range of social and infrastructural features. These features should be designed to enhance the residential experience with various leisure activities. These elements, when considered together, should forge a holistic living environment. This environment should enable students to flourish both socially and academically (See Table 7).

The opportunity for residents to host guests in designated spaces has been demonstrated to enhance the sense of community and personal connections within the housing environment. The availability of external infrastructure has been shown to extend the scope of activities beyond the confines of student accommodation. Contemporary student housing includes a vibrant calendar of social events, creative gatherings, and sports activities, all aimed at fostering a dynamic community spirit. Many of these activities are organized by the student housing itself, offering structured opportunities for engagement and participation. Hobby clubs provide a platform for students to pursue personal interests in a group setting, promoting social interaction and skill development. The surrounding area's parks and sports facilities offer valuable recreational spaces, while amenities such as baths, saunas, and pools add a touch of leisure and relaxation to the student housing experience.

With regard to the opportunities available for engagement in leisure activities, the distribution within the sample population appears to be bal-

**Table 7.** Social and Infrastructural Options on student housing

| Student Housing | Social and leisure activities | | | | | Ability to receive guests | Outside infrastructure | | |
|---|---|---|---|---|---|---|---|---|---|
| | Social events | Creative events | Sports activities | University — organized activities | Hobby clubs | | Parks | Sports facilities | Baths / saunas / pools |
| *Germany* | | | | | | | | | |
| Ludwig Maximilian University of Munich | 2/5 | 2/5 | 1/5 | 5/5 | 1/5 | 3/5 | 5/5 | 5/5 | 1/5 |
| Humboldt University of Berlin | 3/6 | 4/6 | 4/6 | 6/6 | 2/6 | * | 4/6 | 4/6 | 0/6 |
| *Finland* | | | | | | | | | |
| The University of Helsinki | 12/15 | 11/15 | 11/15 | 2/15 | 7/15 | 15/15 | 10/15 | 4/15 | 13/15 |
| *France* | | | | | | | | | |
| Sorbonne University | 2/6 | 0/6 | 1/6 | 6/6 | 1/6 | 2/6 | 2/6 | 3/6 | * |
| Université de Strasbourg | 13/18 | 2/18 | 4/18 | 18/18 | 8/18 | 2/18 | 6/18 | 3/18 | 3/18 |
| *UK* | | | | | | | | | |
| The University of Manchester | 20/20 | 20/20 | 20/20 | 3/20 | 2/20 | 20/20 | 13/20 | 11/20 | 2/20 |
| Glasgow Caledonian University | 18/24 | 18/24 | 18/24 | 16/24 | * | 14/24 | 20/24 | 18/24 | 0/24 |

| Student Housing | Social and leisure activities | | | | | Ability to receive guests | Outside infrastructure | | |
|---|---|---|---|---|---|---|---|---|---|
| | Social events | Creative events | Sports activities | University — organized activities | Hobby clubs | | Parks | Sports facilities | Baths / saunas / pools |
| *Italy* | | | | | | | | | |
| Politecnico di Milano | 8/12 | 9/12 | 7/12 | 12/12 | 8/12 | 12/12 | 8/12 | 10/12 | 0/12 |
| Sapienza Università di Roma | 5/8 | 5/8 | 6/8 | 8/8 | 5/8 | 8/8 | 7/8 | 3/8 | 0/8 |
| *Spain* | | | | | | | | | |
| Universidad de Navarra | 23/23 | 20/23 | 8/23 | 21/23 | 2/23 | 14/23 | * | 14/23 | 4/23 |
| *Czech Republic* | | | | | | | | | |
| Masaryk University (Brno) | * | * | * | * | * | * | 3/5 | 3/5 | 1/5 |
| Charles University (Prague) | * | * | * | * | * | * | 3/13 | 11/13 | * |
| *Russia* | | | | | | | | | |
| HSE National Research University (St. Petersburg) | 2/12 | 2/12 | 6/12 | 12/12 | 1/12 | 12/12 | 3/12 | 12/12 | 1/12 |

* *data is not found*

anced. The highest number of cultural and leisure activities was observed in the student housing at the University of Manchester (UK), Glasgow Caledonian University (Scotland, UK), and the Italian student housing. In Italy, a significant proportion of social events are closely associated with Catholicism and coincide with religious holidays, which may not be universally appealing to all visiting students. Conversely, 73% of Finnish student housing units offer a diverse array of social, creative, and sports events, though university-organized activities constitute a smaller proportion of these offerings, as they are predominantly managed by private business entities (PBSA). Notably, certain universities, such as those in Germany, France, Italy, and HSE in Saint Petersburg, have a track record of offering university-organized activities within their student housing. However, it is noteworthy that Czech university student residences do not provide information on recreational activities for students on their official websites. HSE student housing in St. Petersburg offers average leisure opportunities based solely on the accommodations available, though the university itself provides a variety of activities accessible to all its students, irrespective of their living arrangements. Furthermore, all students have access to sports halls located within HSE buildings.

The analysis of the provided data indicates that, irrespective of the country of residence, the majority of university student housing offers active recreational opportunities for its residents. Specifically, 63% of student housing provides access to free or discounted gym and sports facilities, 59% offers proximity to nearby parks, and 72% allows guests at the resident's place of residence. The sample also included a few pools and saunas, with 16% of the student housing having these amenities. Notably, student housing in Helsinki, Finland (87%), stands out for its incorporation of saunas, a feature attributable to the local culture and climate specificities [Heinonen, Laukkanen, 2018].

In nations such as Spain, Italy, and Finland, for instance, there is a more pervasive understanding of the importance of integrating social service initiatives into the educational curriculum to foster the development of future civic-minded citizens. In this regard, student residents in Spain are permitted to engage in a variety of volunteer activities with underprivileged populations, immigrants, and disadvantaged groups. This encompasses external stakeholders such as NGOs and other foundations that have been sanctioned by local authorities (SDG 17).

## 4.4. More than studying — Intellectual 'wheel'

The final tier of the university student housing model is of particular significance in the context of promoting academic success, self-efficacy, and student autonomy. Intellectual needs and the highest need for self-actualization will be considered here. To satisfy the intellectual needs of the student housing's inhabitants, there should be appropriate infrastructure, including co-working rooms, self-study rooms, and libraries. The availability of research activities within the student housing context was also considered during the evaluation process (Fig. 13).

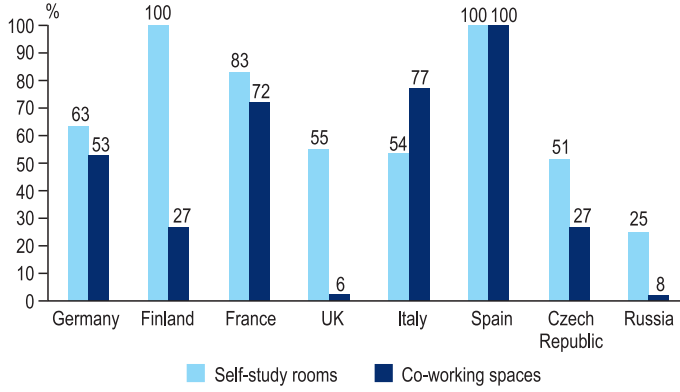


**Figure 13.** The availability of self-study rooms and co-working spaces in student residence, % of sample across countries

The analysis revealed that the most prevalent rooms in the studied student housing were those designated for self-study. Consequently, students at the University of Helsinki (Finland) have the option to rent special apartments designed to accommodate students, with the potential to allocate a specific room or individual area for self-study in each apartment. It was observed that all student housing available to students from the University of Strasbourg and University of Navarra is equipped with designated study rooms. The least represented in this category were HSE and University of Manchester with an indicator of 25% and 35%, correspondingly. Meanwhile, other student housing is about 40–75% equipped with study rooms.

However, the university website does contain information about the possibility of using common lounges in student residences. The data presented indicate that student housing is better equipped with self-study rooms than with classrooms for co-working in the majority of student housing. The exceptions in this case are Spain and Italy, where the rate of availability of study rooms is higher or equal to the rate of self-study rooms. The visual representation further elucidates that Czech and Finnish student housing exhibit a comparable rate of co-working spaces, with an observed figure of 27%. In contrast, the United Kingdom and Russia demonstrate a lower prevalence of co-working spaces within student housing, with a range of 6 to 8%.

### 4.4.1. Libraries and research activities in student residences

The presence of libraries and the facilitation of research activities within student residences represent critical facets of academic support that extend beyond the traditional classroom environment. As integral components of the holistic educational experience, libraries within student housing offer a unique convergence of convenience and resource accessibility, allowing residents easy access to a wealth of knowledge essential for their studies. Similarly, the availability of research activities directly within student residences underscores the commitment to fostering a vibrant scholarly community, encouraging student involvement in academic inquiry and innovation. A comprehensive examination of the distribution and impact of libraries and research activities across diverse student residences, encompassing a range of geographic contexts, offers invaluable insights into the evolution of student support services. This analysis not only documents the current state of these facilities in our sample but also illuminates the potential for enhancing the academic and personal growth of students through targeted amenities within their living spaces.

Spain and Italy have the highest number of libraries in student housing, with residential libraries present in 70% and 56% of the local student housing, respectively (Fig. 14). In contrast, other student housing options feature libraries in less than 20% of cases. In Russia and the Czech Republic, student residences lack libraries entirely. However, it is important to note that students have access to the library collections of their respective universities, which are either located nearby or directly within the academic buildings.

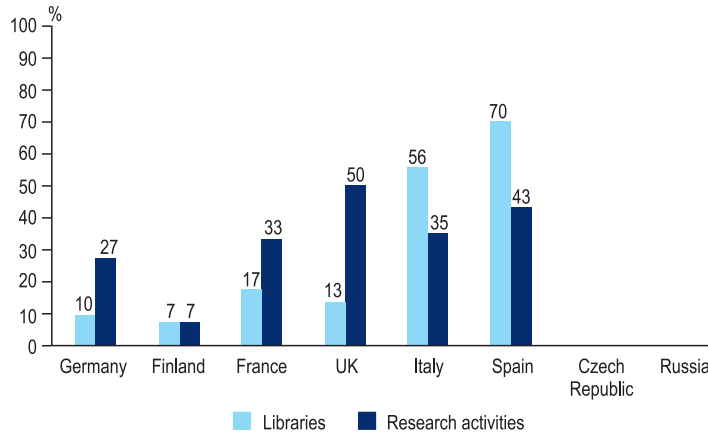


**Figure 14.** The availability of libraries and research activities in student residences, % of sample across countries

A paucity of research activities was observed among the amenities offered by student residences. A survey of websites from Russian and Czech universities revealed an absence of information regarding research activities. In contrast, the United Kingdom and Spain exhibited a notable prevalence of student residences offering research activities, with percentages of 50% and 43%, respectively. This trend is likely indicative of the broader applicability of research activities for the entire student body at a university, rather than being confined to individual student residences. However, in Spain, Colegios Mayores promote student involvement in clubs or circles focused on disciplines such as science, humanities, poetry, and social volunteering, enhancing the academic experience and skill development of participating students. Some student residences allocate spaces within the premises for collaborative interdisciplinary projects, while others foster integration with local industries through partnerships that allow students to engage with real-world problems, thereby augmenting their research experience and employability. Some of these activities are connected with research and territorial enhancement.

### 4.4.2. Self-actualization opportunities

The concept of self-actualization signifies the zenith of personal development, wherein individuals attain their fullest potential. In the context of student housing, the provision of self-actualization opportunities is paramount in supporting students' holistic growth beyond academic achievements. This section explores the array of avenues within student residences that cater to this highest tier of needs, encompassing leadership roles, volunteer work, creative expression, and meaningful interactions with faculty. By examining how student housing can facilitate these enriching experiences, we can better understand the integral role that living environments play in fostering an atmosphere conducive to personal and intellectual fulfillment.

In order to assess the ability of student housing to meet self-actualization needs, an examination of the various opportunities available to students was conducted. These opportunities include participation in self-governance and volunteer organizations, free communication with faculty, availability of mentoring and student councils, and spaces for creative self-actualization (Table 8). Specifically, "student government" signifies scenarios where students assume leadership roles within the accommodation settings; "student councils" denote groups responsible for various interest clubs (e.g., painting, volunteering, literature, well-being centers); "mentoring" involves professors advising students on academic and university life; and "faculty involvement in student life" encompasses professors and university staff participating in extracurricular activities, student organizations, and events outside the classroom (e.g., serving as tutors in student clubs, attending campus events, or generally supporting students in non-academic areas); "creative spaces" describe designated areas for creativity, music, and art.

**Table 8.** Opportunities for Self-Actualization in Student Housing

| In the cities of universities | Student government | Mentoring institution | Student councils | Faculty involvement in student life | Volunteering | Creative spaces |
|---|---|---|---|---|---|---|
| *Germany* | | | | | | |
| Ludwig Maximilian University of Munich | 1/5 | * | 2/5 | 2/5 | 1/5 | 3/5 |

| In the cities of universities | Student government | Mentoring institution | Student councils | Faculty involvement in student life | Volunteering | Creative spaces |
|---|---|---|---|---|---|---|
| Humboldt University of Berlin | 3/6 | 4/6 | 2/6 | * | * | 4/6 |
| *Finland* | | | | | | |
| The University of Helsinki | 5/15 | 5/15 | 4/15 | 2/15 | 6/15 | 8/15 |
| *France* | | | | | | |
| Sorbonne University | 1/6 | 1/6 | * | 1/6 | 1/6 | 1/6 |
| Université de Strasbourg | * | * | 1/18 | * | * | 8/18 |
| *UK* | | | | | | |
| The University of Manchester | 19/20 | 20/20 | 18/20 | 1/20 | 20/20 | 3/20 |
| Glasgow Caledonian University | 14/24 | 16/24 | 14/24 | 0/24 | 13/24 | 21/24 |
| *Italy* | | | | | | |
| Politecnico di Milano | 3/12 | 8/12 | 4/12 | 2/12 | 6/12 | 10/12 |
| Sapienza Università di Roma | 5/8 | 4/8 | 4/8 | 4/8 | 5/8 | 6/8 |
| *Spain* | | | | | | |
| Universidad de Navarra | 3/23 | 4/23 | 2/23 | 11/23 | 13/23 | 6/23 |
| *Czech Republic* | | | | | | |
| Masaryk University (Brno) | * | * | * | * | * | 3/5 |
| Charles University (Prague) | * | * | * | * | * | 10/12 |
| *Russia* | | | | | | |
| HSE National Research University (St. Petersburg) | 1/12 | 2/12 | 1/12 | * | * | 1/12 |

** data is not found*

As indicated by the data presented in Table 8, the United Kingdom (UK) demonstrated a notable prevalence of student councils, student government entities, institutions offering mentoring programs, and opportunities for volunteering among its student housing sectors. Notably, the UK and Italy exhibited a significant presence of institutions engaged in mentoring practices. Conversely, approximately half of the student residences at Germany's Humboldt University in Berlin feature a student government, a phenomenon attributed to the university's academic traditions rather than to public policy or general academic norms, as these traditions are less integrated in the country than in the UK, for example. In contrast, Czech student housing websites generally lack detailed information about students' daily lives and activities, focusing instead on physical infrastructure. For instance, these websites primarily offer information regarding the creative spaces available within their facilities and on campus.

A close examination of relevant websites reveals that mentoring and student councils are particularly salient features of German and British student housing. This phenomenon can be attributed, at least in part, to the distinct organizational structures of student unions. In Russian universities, for instance, student councils and senior students are organized by faculties, and members of these organizations are permitted to reside in any student housing or to rent accommodations on the private market. It is also noteworthy that students residing in student housing in Finland have opportunities for informal communication with professors.

A salient feature of this demographic is the prevalence of creative spaces for students, with over half of the student housing facilities offering dedicated areas for self-discovery and creative pursuits (Fig. 15). Volunteering is also a prevalent aspect in many student residences, as evidenced by the example of Manchester University's residences in the UK, which offer volunteering activities for students. However, the available data are inconclusive regarding faculty involvement in extracurricular activities, with this information being reported in only 24% of student housing facilities. Student councils, student governments, and volunteer organizations received comparable scores, which may be due to these groups being viewed as voluntary student organizations.

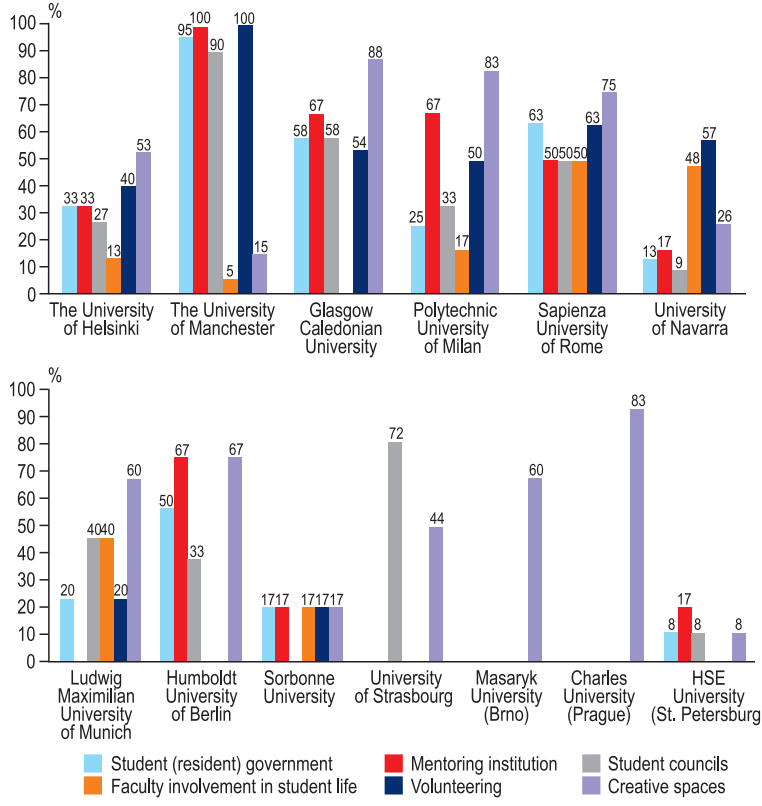


**Figure 15.** The general structure of campus facilities to provide opportunities for student self-actualization, %

# Chapter 5. Lighthouse for Navigating the Maze: Illuminating the Path of Complexities of Sustainable Student Living

The metaphor of a lighthouse serving as a navigational aid through a maze aptly symbolizes the chapter's role in illuminating complex issues. The objective was to guide stakeholders in student housing toward understanding and solutions. This concept involves offering guidance and clarity amidst the complexities and challenges of creating sustainable student living environments.

## 5.1. Intersecting Paths: A Dialogue on Sustainable Student Accommodations (Discussion)

Globally, as the demand for student housing rises, the market continues to demand enhanced quality and efficiency in its solutions. This study sought to identify the similarities and differences in the provision of student housing to students in the European region. As demand increases and occupancy rates approach 100%, student housing has emerged as one of the most attractive asset classes, with rental growth rates exceeding inflation and projected to continue doing so. Investment in student housing in Europe has surged, indicating a robust and resilient sector despite economic fluctuations. The emphasis on quality and sustainability has become paramount, with new developments increasingly focusing on better environmental, social, and governance (ESG) credentials. Student accommodations are adapting to changing demographics and the greater expectations of students for sustainable living environments. This persistent trend underscores the necessity for continuous adaptation and enhancement in the design and management of student housing facilities, ensuring that they not only meet but exceed the evolving standards for comfort, sustainability, and student well-being. In addition, an evaluation was conducted to ascertain how the housing facilities meet the mounting technological requirements of students, such as a high-speed and reliable internet connection and smart home systems [Gøthesen et al., 2023]. Consequently,

this study offers not only a current state of affairs but also the potential for identifying future development areas. These areas should be the focal point of efforts to enhance the quality of life for students, ensure their well-being, and promote ecological sustainability.

The incorporation of the sustainability factor within the context of PBSA is not a novel concept in the student housing market. The sustainability challenge plays a pivotal role in promoting good health and well-being (SDG 3) by fostering healthy living spaces; it contributes to quality education (SDG 4) by providing access to academic facilities; and it supports economic growth and decent work (SDG 8) through ethical labor practices in construction and maintenance; it aids in the development of sustainable cities and communities (SDG 11) through the design of accessible and eco-friendly student housing; and it strengthens global partnerships (SDG 17) by collaborating with diverse stakeholders to fulfill these aims.

Frank Uffen, Co-Founder of The Class Foundation (2023), underscored the critical role of accommodation settings in shaping student mental health and well-being by highlighting the results of a pan-European survey on the impact of students' living environments. Uffen's insights reveal that accommodation providers must design environments that not only facilitate community, a sense of togetherness, and belonging but also ensure that accommodation teams actively foster these communities. He emphasizes that creating and nurturing such environments is essential for supporting mental health and enhancing student well-being within higher education housing [The Class Foundation, 2023].

This statement lends support to our thesis that novel approaches to investment, including the addition of amenity spaces to address social isolation and the acknowledgement of the value of programming on the premises, are becoming necessary developments in the sphere of PBSAs. Such trends demonstrate shifts in the direction of investment priorities and underscore the importance of designing spaces that would be both interesting and conducive to people's well-being.

The array of facilities we have delineated exemplifies the impact of national peculiarities and the traditions of both university and community institutions. For instance, the existence of saunas and the utilization of private organization buildings as student hostels in Finland serve as evidence of cultural preferences within nations. This lends substantial support to the notion that student housing solutions should be culturally and regionally sensitive to enhance the student living environment. It is crucial that ame-

nities be designed with an international perspective, while also acknowledging the significance of local cultural elements. This approach is fundamental to fostering a conducive environment for students.

A salient issue that has been identified, particularly in the context of Russian student housing, pertains to the necessity of augmenting the density of residential facilities in proximity to academic institutions. This augmentation has the potential to significantly streamline students' daily schedules, as one of the participants observed. The provision of housing in strategic locations within the city is paramount for students, as it not only reduces commuting time but also increases the amount of time allocated for academic pursuits and leisure activities. This, in turn, has the capacity to yield enhanced academic outcomes.

A growing body of research indicates a high demand for single occupancy room choices, which could satisfy students' need for privacy. This need is particularly pronounced among members of the centennial generation. In addition, studies suggest that single occupancy rooms could enhance students' academic performance and psychological well-being. Such designated solitary spaces for learning (SDG 3, SDG 4) may offer a solution to address these needs.

A review of the existing provisions for medical support in student housing reveals a conspicuous absence of comprehensive healthcare services (SDG 3). This finding underscores the necessity for the implementation of such services within student housing complexes, with the objective of ensuring that students have immediate access to medical care when necessary, thereby promoting their safety and well-being.

The presence of libraries and the proliferation of co-working spaces within student accommodations have emerged as significant factors contributing to academic success. These resources have been shown to enhance the efficiency of the learning process, providing students with conducive environments for study and collaboration. Consequently, investing in such facilities is crucial for supporting student academic growth and self-actualization (SDG 8).

In the context of engaging with external stakeholders to promote societal and local community involvement, certain student housing providers offer their residents the opportunity to engage in volunteer activities with disadvantaged groups (SDG 17). Additionally, the external infrastructure of the campus, encompassing parks, sports facilities, swimming pools, and saunas, necessitates dedicated attention (SDG 11). These amenities play

a pivotal role in fostering physical health and well-being among students, thereby contributing to a more balanced and fulfilling university experience.

This discussion provides an overview of the present situation and potential enhancements for student housing, as well as laying the groundwork for forthcoming studies. Our unique, holistic model revises Maslow's hierarchy into interlocking circles that integrate personal, social, and intellectual needs. This model is particularly tailored for students residing temporarily in environments that increasingly resemble their familial homes. This approach offers a novel interpretation of Maslow's framework, which is a distinctive contribution to the discourse on student housing by aligning it closely with the evolving dynamics of student needs and expectations.

### 5.1.1. Russian Student dormitories

In the context of Russian student housing, a multitude of challenges necessitate the implementation of immediate solutions to enhance the living conditions of students. Primarily, there is an importance to modernize and renovate dormitories, as they are often antiquated and deficient in fundamental facilities that are crucial for a comfortable and fulfilling life and academic experience. Secondly, inadequate maintenance and servicing of dormitories, for which students regularly incur expenses, gives rise to various grievances. Another salient issue is the variation in the quality and availability of student dorms across different regions of Russia. In major cities such as Moscow and St. Petersburg, where a significant number of students seek academic opportunities, the cost of living is notably higher, particularly for rental accommodations, making it challenging for many students to afford their studies. Conversely, in smaller cities, rental costs are often lower, but the availability of suitable housing options may be limited or incompatible with students' needs. In light of these challenges, it is needed to explore the incorporation of sustainability measures in student housing projects. As global focus on sustainable living intensifies, Russian student housing must evolve to incorporate eco-friendly measures and materials in its construction and operations.

The resolution of these issues has the potential to enhance students' well-being and concurrently augment the global appeal and competitiveness of Russian universities. This objective necessitates a collaborative effort among government authorities, educational institutions, and private

developers to invest in the development of modern, affordable, and sustainable housing.

Nevertheless, the findings of this study could not be generalized to other cities and universities in Russia, because data collection was limited to only one case, that of HSE University, St. Petersburg. This is to say that the results are dependent on the experiences and conditions of one educational institution that may or may not adequately represent the broader landscape of student housing in other Russian cities or universities. Consequently, while the findings from HSE University yielded crucial insights into student housing under specific conditions, they cannot be extrapolated to represent the full spectrum of housing conditions across Russia. This limitation in scope precludes a comprehensive generalization of our conclusions and underscores the necessity for further research across a more diverse array of institutions to gain a more nuanced understanding of the prevailing state of student housing in Russia.

## 5.2. Boundaries of Inquiry: Recognizing the Scope of Sustainable Assessments (Limitations)

The population of this study is limited to Eastern and Western Europe; therefore, the findings may not be representative of the diverse housing designs for students across the globe. The geographical restriction of this study is a limitation; some of the focus areas were selected based on the availability and relevance of information, which could not accommodate all geographical areas. This selection could also bias the findings and therefore call for more studies in the unrepresented areas.

In this study, an empirical investigation was conducted to analyze the student housing market, its developmental trends, and their impact on students' self-actualization. The findings of this investigation are presented herein, with a focus on synthesizing the extant literature, theories, and a comparative model. However, it is important to acknowledge the inherent limitations of this study. It is therefore essential to identify these limitations to ensure a comprehensive interpretation of the study's findings and recommendations.

The characteristics mentioned were derived from the types of student housing included in the sample, which introduces a limitation in the analysis due to the bias of the examined student housing peculiarities and conditions. Therefore, the study's generalizability depends on the nature or ho-

mogeneity of housing types in the stated database. This underscores the necessity of not overemphasizing the interpretation of our results based on the distinctive characteristics of the student housing contexts that were the subject of our investigation.

Despite its implementation on a substantial scale, the spectrum of student accommodation types under consideration might not encompass all global trends. Consequently, our analysis is geographically focused. The selection of focus areas was determined by the availability and relevance of data; therefore, these areas may not encompass all regions adequately. This selection may impact the generalizability of our findings, underscoring the necessity for additional studies in underrepresented fields.

The temporal limitation of our data collection may result in the curtailment of the longevity of our results, given the inherently evolving nature of the student housing market. It is plausible that shifts in educational policies, economic conditions, or external factors, such as a global pandemic, may precipitate a rapid transformation in the dynamics of the student housing sector within a relatively brief period. Consequently, the necessity for a consistent and methodical analysis of this sector becomes evident.

The present study is predicated on the theory of Maslow's Hierarchy of Needs, with a particular focus on the concept of negative needs. It is acknowledged that this theoretical framework may impose limitations in its capacity to adequately address the intricacies of students' motives and the processes of their self-actualization. The metaphor of interconnected wheels, which has been employed to illuminate the diverse facets of students' lives, is indeed a realistic depiction. Nevertheless, it appears to be inadequate in capturing the entirety of possibilities and needs that extend beyond material necessities. This underscores the necessity to employ models that take into account psychological and, more specifically, emotional dimensions to a greater extent. It also highlights the importance of adopting Michell's (2000) perspective on the value of a more integrative approach to problem identification and, consequently, to student maintenance.

The present study encompasses a diverse range of student backgrounds and specific needs of student populations from various institutions. The study's limitations stem from its theoretical framework, which is a generalized concept of a student. Consequently, the framework may constrain the identification of distinct needs and experiences among international students, non-traditional learners, and learners with special needs. This identified gap serves as a catalyst for future research, which

would contribute to the development of more diverse and accommodating housing.

From the vantage point of research methods, the present study is encumbered by certain limitations, which are inextricably linked to the inherent characteristics of the data sources and their accessibility, as well as the potential biases they contain. The utilization of a wide array of empirical materials during the operational phase may not encompass all dimensions of student accommodation, a circumstance that could result in a certain degree of bias in the study's conclusions.

Therefore, it is essential to proceed with the conclusions and recommendations in a manner consistent with the factual-situational aspect of the case. The study describes widespread models and principles of student housing, which address the satisfaction of students' needs and self-actualization. It also recognizes the challenges associated with the practical implementation of the presented models in different educational and accommodation systems. Given the implementation difficulties, in addition to methodological and theoretical issues, further study and development of student housing frameworks are necessary. Consequently, future research endeavors should prioritize the identification of these disparities through longitudinal studies, the examination of students' multifaceted experiences, and the exploration of innovative housing provision methodologies. While recognizing the inherent limitations of our study, we anticipate that our findings will serve as a foundational framework for the development of more effective and equitable student housing strategies in the future.

The vision for the future is concretely defined by sustainable dwellings, where the concept of ecological student housing serves to transform university communities and extend its success beyond the confines of the learning environment. The incorporation of green technologies in student residences is not merely an effective approach for reducing the environmental footprint; it is also an enriching strategy that enhances students' learning experience by integrating living spaces as teaching tools, thereby actualizing and imparting the principles of environmental preservation. This approach underscores the interconnected nature of sustainable living and overall health, demonstrating its potential to enhance student experiences through the benefits of natural light, fresh air, and exposure to natural environments.

This is in addition to the sustainable student housing that is being proposed as a key enabler to create a spirit of togetherness in the building.

The combination of zones for people's cooperation and separate areas of these dwellings contributes to the social participation of students and promotes a culture of sustainability.

A modest utilization of on-campus services and facilities has been demonstrated to be positively associated with student well-being [The Class Foundation, 2023]. The integration of personal support services with the organization of community activities has been shown to exert a favorable influence on the enhancement of students' welfare. Specifically, the activation of certain end-use facilities, such as community lounges, gaming facilities, and other shared recreation areas and green spaces, has been observed to be associated with positive mental health self-reports among students. Furthermore, students who utilize the services or facilities offered by their accommodations are more inclined to recommend their place of residence.

The discourse on sustainable student housing is inextricably linked to policy and planning considerations. The development of green dwellings that are resilient to future changes necessitates a collaborative approach that engages educational institutions, governments, and the private sector to formulate supportive policies and innovative planning strategies. The examination of successful case studies in sustainable student housing serves a dual purpose: it provides inspiration and offers a framework for future developments. These case studies reveal innovative design solutions and the transformative potential of sustainable living spaces in fostering a more sustainable future for all. Additionally, the economic aspects of these green buildings are a key focus, highlighting not only the long-term savings through energy efficiency but also the broader potential for making sustainable living accessible through innovative funding models and public-private partnerships.

As sustainable dwellings become increasingly prevalent, they signify a cultural shift towards environmental stewardship on university campuses and in the broader community. This transition is facilitated by educational programs focused on sustainability, student-led green initiatives, and a general movement towards integrating sustainability into every facet of university life. Moreover, in the face of climate change, these sustainable housing projects serve as exemplars of resilience and adaptability, incorporating designs and materials that reduce the overall carbon footprint and enhance the campus's ability to withstand environmental challenges.

## 5.3. Recommendations for PBSA managers

In light of the mounting necessity for adequate student housing, as evidenced by the findings of our research, we present a series of recommendations aimed at enhancing the living and learning environments of students. The implementation of these strategies by academic institutions and student housing providers has the potential to significantly elevate the quality of student accommodations. These measures are designed to foster environments conducive to academic success, personal growth, and the cultivation of a strong sense of community (See Fig. 16).

It is needed to implement a comprehensive strategy to enhance the quality of student housing. This strategy should encompass a diverse array of housing options that cater to the multifaceted needs and financial capacities of students. The objective is to ensure that all students have access to accommodations that align with their individual requirements. This necessitates the provision of a range of room configurations, including individual rooms and shared suites, along with flexible pricing structures that enhance affordability and accessibility.

In the contemporary student housing context, sustainability initiatives stand as a pivotal element. The integration of energy-efficient designs, waste reduction programs, and green spaces within student housing facilities serves a dual purpose. Firstly, it contributes to the minimization of environmental impact. Secondly, it fosters mental well-being and ecological awareness among students. These measures underscore the commitment to creating living spaces that are both eco-friendly and conducive to student health.

The culture of engaging with stakeholders, particularly students, is crucial. The collection and consideration of student feedback is pivotal for the continuous enhancement of student housing. Engaging with students on a regular basis to understand their experiences and address their concerns is essential to ensure that housing services evolve to meet their evolving needs. This feedback loop is instrumental in maintaining high standards of living and satisfaction.

In order to support the physical and psychological well-being of students, it is significant to offer access to mental health services, recreational facilities, and wellness activities within student housing complexes. These initiatives foster a balanced lifestyle that is fundamental for both academic success and personal development. Moreover, the provision of accessible

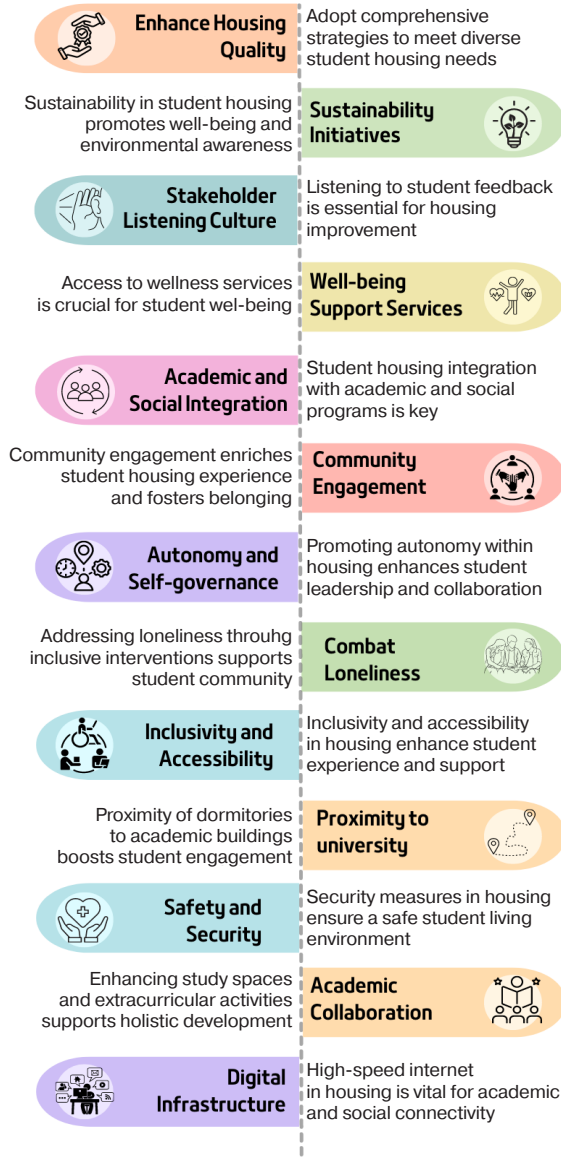


**Figure 16.** Recommendations for PBSA managers

and comprehensive medical services in these housing complexes plays a crucial role in ensuring student safety and well-being. Furthermore, enhancing external infrastructure by developing recreational facilities such as parks, sports facilities, and amenities like pools and saunas is recommended. This approach not only promotes healthier lifestyles but also contributes to a more vibrant and engaging community life for students, creating an environment that supports their overall growth and well-being.

The integration of student housing with academic and social programs underscores the pivotal role of accommodations in the comprehensive educational experience. By meticulously interweaving housing with extracurricular activities and social events, student housing metamorphoses into a dynamic milieu for learning, personal growth, and community building.

The enhancement of the student housing experience is predicated on the facilitation of community engagement, which establishes connections between students and the local community. The provision of volunteer opportunities, cultural exchanges, and collaborations with local organizations fosters the development of a stronger sense of belonging and social responsibility among students, thereby integrating them more profoundly into the community fabric. To further bolster community programs, it is critical to customize approaches to accommodate the diverse needs of students, acknowledging the limitations of a one-size-fits-all strategy. The adaptation of these programs is essential for ensuring that all students, irrespective of their backgrounds or interests, are able to identify meaningful avenues for engagement and benefit from the enriched community life that surrounds them.

The promotion of autonomy and self-governance within student housing communities has been demonstrated to empower students, enabling them to take an active role in the management of their living spaces. The encouragement of student-led initiatives and governance structures has been shown to foster leadership skills and a sense of ownership, thereby contributing to a vibrant and collaborative housing environment.

It is crucial to allocate particular attention to students who may encounter feelings of loneliness. It is essential to ensure that interventions are inclusive and responsive to the diverse needs of the student population. By cultivating an environment where each student feels supported and connected, institutions can more effectively address the issue of loneliness and promote a healthier, more engaged community.

The promotion of inclusivity and accessibility within the domain of student housing is imperative. It is paramount for accommodations to be re-

ceptive to students from diverse backgrounds and to be fully accessible for individuals with disabilities. The establishment of an atmosphere that honors diversity and fosters inclusivity serves to enhance the overall student experience and nurture a supportive community environment.

A critical need that has been identified is the enhancement of the proximity of dormitories to academic buildings. Such improvements have the potential to significantly ease students' daily routines and bolster their academic engagement. Additionally, the provision of single rooms has the potential to enhance privacy and personal space, addressing a substantial gap in current offerings and contributing positively to the overall student experience.

The implementation of robust security protocols, the assurance of secure access, and the provision of emergency services are instrumental in fostering a safe living environment. This environment enables students to focus on their studies and personal development without the encumbrance of undue concern for their safety.

Investing in safety and security measures is important for the well-being of students. The implementation of libraries and co-working spaces within student housing has the potential to transform study habits and promote academic collaboration, thereby significantly impacting students' academic performance. Furthermore, the creation of diverse opportunities for student fulfillment through extracurricular and leisure activities supports students' holistic development by offering avenues for personal growth, social interaction, and creative expression.

Digital infrastructure has become an indispensable component of modern education, playing a pivotal role in facilitating academic success, communication, and personal recreation in the digital age. The integration of high-speed internet and digital learning tools within student residences not only enhances educational outcomes but also fosters a connected and engaged student community. This infrastructure enables a diverse array of educational activities and personal interests, underscoring its crucial role in supporting the holistic development of students in the 21st century.

## 5.4. Horizons Reached: Concluding Insights on Sustainable Student Living (Conclusion)

In summary, the present study has embarked on a thorough investigation of the PBSA market, emphasizing its evolving dynamics and the

mounting demand for student housing in the face of potential epidemiological challenges. Through a meticulous examination of extant research on student housing issues, infrastructure, and the development of universities, we have underscored the pivotal role of student housing environments in meeting student needs and fostering self-actualization.

In this study, we developed a conceptual model to evaluate the effectiveness of student housing. This model draws on A. Maslow's hierarchy of needs and the human-centered Fifth Generation University (5GU) concept. An extensive review of the literature was also conducted. The model focuses on the imperative of meeting each level of student needs within the housing environment. It underscores the crucial role of student housing infrastructure in promoting student development.

The empirical evidence provided in this study confirms the need and practicality of fulfilling all student requirements via meticulously designed student housing infrastructures. The study reveals that, while the extent may vary, student housing infrastructures accommodate a broad spectrum of student needs. Conducting a cross-country analysis has laid the groundwork for identifying exemplary practices in student housing and investigating the factors contributing to the differences noted in research indicators.

This research is poised to make a significant contribution to the academic discourse on PBSA, thereby establishing a foundation for future inquiries into the enhancement of student housing models designed to support holistic student development. It underscores the necessity for a collaborative effort among stakeholders to innovate and implement housing solutions that are responsive to the diverse needs of students, thereby fostering an environment conducive to self-actualization and academic achievement. This paper's descriptive analysis establishes a foundation for exploring actionable strategies that cater to the evolving necessities of students, with the aim of empowering their academic pursuits and personal development within the university landscape.

### 5.5. Further Research

This approach will be instrumental in future research on student housing by expanding the scope and engaging students from diverse geographical regions. To ascertain the components of student housing and support services that may necessitate enhancement, it is recommended

that students be surveyed regarding their unmet needs using the proposed Maslow "wheels" model. This approach would not only facilitate the refinement of services to align more closely with students' actual needs but also promote a more student-centered approach to service development.

Engagement of this nature has been shown to be a source of empowerment for students, as it provides them with a voice in the decisions that affect their daily lives and the environment in which they learn. By taking into consideration student feedback and implementing relevant insights, educational institutions can strive to meet not only minimum standards, but also the contemporary needs of their diverse student bodies. This approach fosters a distinctive sense of community and responsiveness, which has been demonstrated to have a substantial positive impact on student satisfaction and success.

The security level merits consideration in the future. It is urgent to elucidate the implications of security within the context of Purpose Build Student Accommodation, particularly with regard to the adequacy of medical facilities. A salient question pertains to the designation of libraries as coworking spaces and the subsequent impact on students' well-being and academic success. The necessity of equipping libraries with the requisite tools to fulfill this role must be ascertained.

In order to assess the satisfaction of students with regard to their accommodations, it is essential to implement a systematic evaluation that encompasses both interviews and surveys. These instruments should encompass an exploration of the array of amenities currently available, as well as any perceived deficiencies. The initial phase of the research should entail a cataloging of the existing attributes of student housing, including safety protocols, the range of amenities provided, proximity to educational facilities, the quality of living spaces, communal areas, and the support services on offer. A systematic evaluation of these attributes is essential to ascertain their alignment with the fundamental and sophisticated requirements of the student demographic.

Subsequent research pieces should entail direct interactions with students to ascertain their specific grievances and suggestions regarding their living conditions. This might encompass a range of issues, from the need for enhanced internet services and upgraded physical facilities to the augmentation of opportunities for community engagement and local cultural integration. There is a need for students to prioritize these needs, as this assists in identifying crucial areas that require attention.

Furthermore, students should be encouraged to submit proposals for specific improvements that could enrich their residential experience. The assessment of these recommendations' potential impacts can provide substantial insights into the development of more responsive student housing policies and management practices. Aligning this feedback with an adapted version of Maslow's hierarchy of needs offers a structured framework for identifying which needs are being met satisfactorily and where service gaps persist. This comprehensive approach ensures that housing services are more closely aligned with students' actual requirements and guarantees that enhancements are strategic and centered around the student experience, fostering a nurturing environment that supports both personal and academic development. Consequently, this enhances the overall student experience in higher education.

The emerging trend of commercial Purpose-Built Student Accommodations (PBSAs) offers an intriguing case study, primarily due to the enhanced understanding of and greater financial resources available to meet students' needs. The objective of this study is to conduct a comparative analysis between university-managed dormitories and PBSAs across various aspects, including living conditions and the cost of accommodation. The objective of this research is to conduct a comprehensive comparative analysis of university dormitories and PBSAs, with the aim of evaluating which housing option better aligns with the needs of students. This comparative analysis will provide valuable insights into the advantages and potential drawbacks of each housing option, thereby assisting both students and educational institutions in making informed decisions regarding housing strategies that best support student needs and enhance their overall university experience.

Expanding the geographical scope of the study to include additional countries or regions would significantly enhance its validity and applicability. By enabling a comparative analysis across a range of educational and cultural contexts, such an expansion could identify unique regional challenges and innovations in student housing. This approach would not only increase the relevance of the research but also deepen our understanding of global trends and regional particularities in student accommodation solutions.

The incorporation of surveys administered to managers of Purpose-Built Student Accommodations (PBSAs) and university residence halls could serve to further enrich the research. The inclusion of these entities

would facilitate the acquisition of a more comprehensive set of data regarding the management and operational effectiveness of these facilities in meeting the needs of students. The analysis of the insights gathered from these managers could yield invaluable data regarding operational challenges, best practices, and the strategic objectives that guide facility offerings. Such data could illuminate the degree to which management strategies align with student satisfaction outcomes. These enhancements would offer a comprehensive view of the global student housing landscape, equipping stakeholders with essential insights into the elements that drive successful student accommodation models and highlighting areas in need of improvement.

# References

*Abbas J.* (2020) Service quality in higher education institutions: qualitative evidence from the students' perspectives using Maslow hierarchy of needs // International Journal of Quality and Service Sciences. Vol. 12. No. 3. P. 371–384. https://doi.org/10.1108/IJQSS-02-2020-0016.

*Agasisti T., Soncin M.* (2021) Higher education in troubled times: on the impact of Covid-19 in Italy // Studies in Higher Education. Vol. 46. No. 1. P. 86–95. https://doi.org/10.1080/03075079.2020.1859689.

*Baugus K.E.* (2020) Food Insecurity, Inadequate Childcare, & Transportation Disadvantage: Student Retention and Persistence of Community College Students // Community College Journal of Research and Practice, Vol. 44. No. 8. P. 608–622. https://doi.org/10.1080/10668926.2019.1627956.

*Baur J.* (2020) Campus community gardens and student health: A case study of a campus garden and student well-being // Journal of American College Health. Vol. 70. No. 2. P. 377–384. https://doi.org/10.1080/07448481.2020.1751174.

*Berglund T., Gericke N., Boeve-de Pauw J., Olsson D., Chang T.-C.* (2020) A cross-cultural comparative study of sustainability consciousness between students in Taiwan and Sweden // Environment, Development and Sustainability. Vol. 22. P.6287–6313. https://doi.org/10.1007/s10668-019-00478-2.

*Blackman D.A., Johnson S. J., Buick F., Faifua D. E., O'Donnell M., Forsythe M.* (2016) The 70: 20: 10 model for learning and development: an effective model for capability development? In Academy of Management Proceedings. Vol. 2016. No. 1. 10745. Briarcliff Manor, NY 10510: Academy of Management.

*Blyth A.* (2018) Re-imagining Learning Spaces in Higher Education. In NUI Galway Symposium for Higher Education: Design for Learning: Teaching & Learning Spaces in Higher Education. https://westminsterresearch.westminster.ac.uk/item/q578v/re-imagining-learning-spaces-in-higher-education.

*Blyth A., Worthington J.* (2010) Managing the Brief for Better Design (2nd ed.). Routledge. https://doi.org/10.4324/9780203857373.

BONARD (2022) Student Housing Annual Report 2021, 27 January. https://www.bonard.com/insights/student-housing-annual-report-2021.

BONARD (2021) Student Housing Annual Report 2020, 16 February. https://bonard.com/project/shreport2020/.

BONARD (2023) Student Housing Annual Report 2022, 31 January. https://www.bonard.com/insights/student-housing-annual-report-2022.

*Bondarenko N., Varlamova T., Gokhberg L., Zorina O., Kuznetsova V., Ozerova O., Shkaleva E., Schugal N.* (2023) Education Indicators: 2023: Statistical Compendium (Eds.), NRU HSE, Moscow. doi:10.17323/978-5-7598-2746-7.

*Bochiș L., Barth K., Florescu M.-C.* (2022) Psychological Variables Explaining the Students' Self-Perceived Well-Being in University, During the Pandemic / Frontiers in Psychology. Vol. 13. https://doi.org/10.3389/fpsyg.2022.812539.

*Brissy L., Ferris G., Valentine-Selsey R., Roberts M., Snaith J.* (2022) Spotlight: European Student Accommodation 2022. Savills. https://www.savills.com/research_articles/255800/334907-0.

*Caniglia G., John B., Bellina L., Lang D.J., Wiek A., Cohmer S., Laubichler M.D.* (2018) The glocal curriculum: A model for transnational collaboration in higher education for sustainable development // Journal of Cleaner Production. Vol. 171. P. 368–376. https://doi.org/10.1016/j.jclepro.2017.09.207.

*Cascone S., Sciuto G.* (2018) Recovery and reuse of abandoned buildings for student housing: A case study in Catania, Italy // Frontiers of Architectural Research. Vol. 7. No. 4. P. 510–520. https://doi.org/10.1016/j.foar.2018.08.004.

*Clardy A.* (2018) 70-20-10 and the Dominance of Informal Learning: A Fact in Search of Evidence. Human Resource Development Review. Vol. 17. No. 2. P. 153–178. https://doi.org/10.1177/1534484318759399.

*Chiang T., Mevlevioglu G., Natarajan S., Padget J., Walker I.* (2014) Inducing [sub]conscious energy behaviour through visually displayed ener-

gy information: A case study in university accommodation // Energy and Buildings, Vol. 70. P. 507–515. doi:10.1016/j.enbuild.2013.10.035.

*Compton W.C.* (2018) Self-Actualization Myths: What Did Maslow Really Say? // Journal of Humanistic Psychology. https://doi.org/10.1177/0022167818761929.

*Coulson J., Roberts P., Taylor I.* (2014). University Trends: Contemporary Campus Design (1st ed.). Routledge. https://doi.org/10.4324/9781315757209.

*Coulson J., Roberts P., Taylor I.* (2015) University Planning and Architecture: The search for perfection (2nd ed.). Routledge. https://doi.org/10.4324/9781315750774.

*De Boer H.* (2021) COVID-19 in Dutch higher education // Studies in Higher Education. Vol. 46. No. 1. P. 96–106. https://doi.org/10.1080/03075079.2020.1859684.

*Delbanco A.* (2014) College: What it was, is, and should be. Princeton, NJ: Princeton University Press.

*Den Heijer A.C.* (2011) Managing the University Campus: Information to Support Real Estate Decisions. 2nd ed. Delft: Eburon Academic Publishers.

*Den Heijer A.* (2012) Managing the University Campus: Exploring Models for the Future and Supporting Today's Decisions // CELE Exchange, Centre for Effective Learning Environments. No. 2012/02. OECD Publishing, Paris, https://doi.org/10.1787/5k9b950gh2xx-en.

*Den Heijer A.C., Tzovlas G.E.* (2014) The European campus — heritage and challenges. Delft: Delft University of Technology. http://managingtheuniversitycampus.nl/about-the-2014-book/.

*Devlin A.S., Donovan S., Nicolov A., Nold O., Zandan G.* (2008) Residence Hall Architecture and Sense of Community: Everything Old Is New Again // Environment and Behavior. Vol. 40. No. 4. P. 487–521. https://doi.org/10.1177/0013916507301128.

*Dremova O., Sheglova I.* (2020) Hostel-based learning communities: experience of foreign universities and implementation opportunities in russia // Contemporary Education Analytics. Vol. 18. No. 48

(*Дремова О., Щеглова И.* (2020) Учебные сообщества на базе общежитий: опыт зарубежных вузов и возможности реализации в России // Современная аналитика образования. М.: НИУ ВШЭ. № 18 (48)). https://ioe.hse.ru/pubs/share/direct/430139936.pdf.

*Drucker J.* (2016) Reconsidering the regional economic development impacts of higher education institutions in the United States. Regional Studies. Vol. 50. No. 7. doi/abs/10.1080/00343404.2014.986083.

*Dolley J., Hardy K., Sargent D.* (2022) Playing it safe: co-designing safe, inclusive, sustainable, and resilient future cities. 10th State of Australasian Cities National Conference. 1-3 December 2021, Melbourne, Australia. https://apo.org.au/node/316483 (accessed 09 April 2024).

*Du Preez M., Arkesteijn M.H., den Heijer A.C., Rymarzak M.* (2022) Campus managers' role in innovation implementation for sustainability on Dutch University campuses // Sustainability. Vol. 14. No. 23. 16251. https://doi.org/10.3390/su142316251.

*Elnagar E., Munde S., Lemort V.* (2021) Refurbishment concepts for a student housing at the Otto Wagner Areal in Vienna under the aspects of sustainability, energy efficiency and heritage protection // In IOP Conference Series: Earth and Environmental Science. Vol. 863. No. 1. 012047, October. IOP Publishing. doi.org/10.1088/1755-1315/863/1/012047.

*Ershova N.R., Sungurova N.R.* (2021) University campus improvement as a factor in creating the image of an educational institution // Trends in the development of science and education. No. 70 (2). P. 36–39. doi: 10.18411/lj-02-2021-47.

Eurostat (2023) Students in tertiary education — as % of 20–24 years old in the population. https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrt08/default/table?lang=en (accessed 14 January 2023).

Federal Law "On emergency services and the status of rescuers" № 151-FL (22.08.1995).

Federal State Statistics Service of Russian Federation (Rosstat) (2022) POPULATION OF THE RUSSIAN FEDERATION BY GENDER AND AGE (Statistical Bulletin). Moscow. https://rosstat.gov.ru/storage/mediabank/Bul_chislen_nasel-pv_01-01-2022.pdf (accessed 02 April 2024).

Federal State Statistics Service of Russian Federation (Rosstat) (n.d.). Average monthly nominal accrued wages and salaries of workers in the economy of the Russian Federation in 1991–2023. https://rosstat.gov.ru/labor_market_employment_salaries# (accessed 12 February 2024) // Федеральная служба государственной статистики. Среднемесячная номинальная начисленная заработная плата работников в целом по экономике Российской Федерации в 1991–2022 гг.

*Fielding B.* (2019) Why purpose-built student accommodation is such a good investment // Buy Association, 9 August. https://www.buyassociationgroup.com/en-gb/2019/08/09/why-purpose-built-student-accommodation-is-such-a-good-investment/.

*Fosnacht K., Gonyea R.M., Graham P.A.* (2020) The Relationship of First-Year Residence Hall Roommate Assignment Policy with Interactional Diversity and Perceptions of the Campus Environment // The Journal of Higher Education. Vol. 91. No. 5. P. 781–804. https://doi.org/10.1080/00221546.2019.1689483.

*Gaete S.M.* (2023) University, Sustainability, and Reputation: Sustainability as a Strategic and Reputational Pillar in the Fifth Generation of Universities — Case Studies of the University of Manchester (United Kingdom) and the HSE University (Russia) / TDX (Tesis Doctorals En Xarxa). https://www.tdx.cat/handle/10803/689386.

*Garboden P., Jang-Trettien C.* (2020) «There's money to be made in community»: Real estate developers, community organizing, and profit-making in a shrinking city // Journal of Urban Affairs. Vol. 42. No. 3. P. 414–434. https://doi.org/10.1080/07352166.2018.1465346.

*Garza T., Huerta M., García H.A., Lau J.* (2021) Exploring Sense of Belonging, Socioacademic Integrative Moments, and Learning Communities Related to ELs' Persistence Based on Reenrollment Decisions in Community Colleges // Community College Review. Vol. 49. No. 1. P. 30–51. https://doi.org/10.1177/0091552120964873.

*Glass C.R., Gesing P.* (2018) The development of social capital through international students' involvement in campus organizations // Journal of International Students. Vol. 8. No. 3. P. 1274–1292.

*Goddard J., Coombes M., Kempton L., Vallance P.* (2014) Universities as anchor institutions in cities in a turbulent funding environment: vulne-

rable institutions and vulnerable places in England // Cambridge Journal of regions, economy and society. Vol. 7. No. 2. P. 307–325. https://doi.org/10.1093/cjres/rsu004.

*Gordeeva S., Petukhov K.* (2014) Socio-economic macro-factors of alcohol consumption by young people in Russian regions // Family Health — 21st Century. Vol. 2. P. 70–83. https://elibrary.ru/item.asp?id=21804597.

*Gøthesen S., Haddara M., Kumar K.N.* (2023) Empowering homes with intelligence: An investigation of smart home technology adoption and usage // Internet of Things. Vol. 24. 100944. https://doi.org/https://doi.org/10.1016/j.iot.2023.100944.

Government of the Russian Federation (2023) Report of the Government of the Russian Federation to the Federal Assembly of the Russian Federation on the implementation of state policy in the field of education. Moscow. P. 73. http://static.government.ru/media/files/7wTyuCH7RUXZb5RgUqReX4nWt6TuUAH4.pdf.

*Gwosc C., Hauschildt K., Wartenbergh-Cras F., Schirmer H.* (2021) Social and Economic Conditions of Student Life in Europe: Eurostudent VII 2018-2021 | Synopsis of Indicators. wbv Media GmbH & Company KG.

*Duan H., Li J., Fan S., Lin Z., Wu X., Cai W.* (2021) Metaverse for Social Good: A University Campus Prototype. In Proceedings of the 29th ACM International Conference on Multimedia (MM '21). Association for Computing Machinery. New York. NY. USA. P. 153–161. https://doi.org/10.1145/3474085.3479238.

*Hajrasouliha A.* (2016) Campus score: Measuring university campus qualities // Landscape and Urban Planning. Vol. 158. P. 166–176. https://doi.org/https://doi.org/10.1016/j.landurbplan.2016.10.007.

*Heinonen I., Laukkanen J.A.* (2018) Effects of heat and cold on health, with special reference to Finnish sauna bathing // American Journal of Physiology-Regulatory, Integrative and Comparative Physiology. https://doi.org/10.1152/ajpregu.00115.2017.

HESA (2023) Higher Education Student Statistics: UK, 2021/22 — Student numbers and characteristics. https://www.hesa.ac.uk/news/19-01-2023/sb265-higher-education-student-statistics/numbers (accessed 09 February 2024).

*Ike N., Baldwin C., Lathouras A.* (2020) Tertiary students' housing priorities: Finding home away from home // Canadian Journal of Urban Research. Vol. 29. No. 1. P. 55–69. https://www.jstor.org/stable/26929897.

*Jdaitawi M., Rasheed A., Gohari M., Raddy Y., Aydin M., Ahmed A.B.A.S., ... Khatiry A.* (2020) The Determinants of Leisure Attitudes: Mediating Effect of Self-Efficacy among Students from Science, Engineering and Medicine Colleges // Journal of Turkish Science Education, Vol. 17. No. 2. P. 242–252. https://www.tused.org/index.php/tused/article/view/974.

*Jordan K.A., Gagnon R.J., Anderson D.M., Pilcher J.J.* (2018) Enhancing the College Student Experience: Outcomes of a Leisure Education Program // Journal of Experiential Education. Vol. 41. No. 1. P. 90–106. https://doi.org/10.1177/1053825917751508.

*Kaplan S.* (1992). The Restorative Environment: Nature and Human Experience / In: Role of Horticulture in Human Well-being and Social Development: A National Symposium, Arlington, Virginia. Timber Press. P. 134–142.

*Kaplan-Rakowski R.* (2021) Addressing students' emotional needs during the COVID-19 pandemic: a perspective on text versus video feedback in online environments // Educational Technology Research and Development. Vol. 69. No. 1. P. 133–136. https://doi.org/10.1007/s11423-020-09897-9.

Keidanren (2018). Society 5.0. Co-creating future. http://www.keidanren.or.jp/policy/2018/095.html.

*King A.E., McQuarrie F.A.E., Brigham S.M.* (2021) Exploring the Relationship Between Student Success and Participation in Extracurricular Activities // SCHOLE: A Journal of Leisure Studies and Recreation Education. Vol. 36. No. 1–2. P. 42–58. https://doi.org/10.1080/1937156X.2020.1760751.

*Kinsella M., Wyatt J., Nestor N., Last J., Rackard S.* (2023) Fostering students' autonomy within higher education: the relational roots of student adviser supports // Irish Educational Studies. Vol. 43. Issue 4. P. 1–20. https://doi.org/10.1080/03323315.2023.2201229.

*Kinzie J., Kuh G.* (2004) Going DEEP: Learning from Campuses That Share Responsibility for Student Success // About Campus. Vol. 9. No. 5. P. 2–8. DOI:10.1002/abc.105.

*Khajehzadeh I., Vale B.* (2016) Shared student residential space: a post occupancy evaluation // Journal of Facilities Management. Vol. 14. No. 2. P. 102–124. https://doi.org/10.1108/JFM-09-2014-0031.

*Kobue T., Oke A., Aigbavboa C.* (2017) Understanding the determinants of students' choice of occupancy for creative construction // Procedia Engineering. Vol. 196. P. 423–428. https://www.sciencedirect.com/science/article/pii/S1877705817330916#:~:text=https%3A//doi.org/10.1016/j.proeng.2017.07.219.

*Kourris A.* (2022) Student Housing Market Insights: Nordics / Presented at the The Class Conference (Bonard), 16–17 November. https://goo.su/SHXqK (accessed 15 February 2023).

*Lau J., Garza T., García H.* (2018). International students in community colleges: On-campus services used and its affect on sense of belonging // Community College Journal of Research and Practice. Vol. 43. No. 2. P. 109–121. https://doi.org/10.1080/10668926.2017.1419891.

*Leal Filho W., Salvia A.L., Pallant E., Choate B., Pearce K.* (Eds.). (2023) Educating the Sustainability Leaders of the Future. Springer Nature. https://doi.org/https://doi.org/10.1007/978-3-031-22856-8.

*Lindblom S.* (2023) What factors are driving the UK PBSA market? // Colliers. 10 November. https://www.colliers.com/en-gb/news/blog-what-factors-are-driving-the-uk-pbsa-market.

*Lorant V., Nicaise P., Soto V.E., d'Hoore W.* (2013) Alcohol drinking among college students: college responsibility for personal troubles // BMC Public Health. Vol. 13. P. 1–9. https://doi.org/10.1186/1471-2458-13-615.

*MacKean G.* (2011) Mental health and well-being in post-secondary education settings / In: CACUSS preconference workshop on mental health. June. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=8c2428f276e643d92a0937f3251617ddec46b5f9.

*Magni M., Pescaroli G., Bartolucci A.* (2019) Factors influencing university students' accommodation choices: risk perception, safety, and vulnerability // Journal of Housing and the Built Environment. Vol. 34. P. 791–805. https://doi.org/10.1007/s10901-019-09675-x.

*Mallach A.* (2018) The divided city: Poverty and prosperity in urban America. Island Press. https://islandpress.org/books/divided-city#desc.

*Muntean L., Bochiş L.N.* (2023) Basic Psychological Needs And Well-Being Of Students In The Post-Pandemic. European Proceedings of Educational Sciences. https://doi.org/10.15405/epes.23045.63.

*Marginson S.* (2023) Higher education as student self-formation / In: Assessing the contributions of higher education. Edward Elgar Publishing. P. 61–87. https://doi.org/10.4337/9781035307173.00012.

*Maslow A.* (1987) Motivation and personality (3rd ed.) (revised by R. Frager, J. Fadiman, C. McReynolds, R. Cox). New York: Harper Collins.

*Maslo, A., Lewis K.J.* (1987) Maslow's hierarchy of needs // Salenger Incorporated. Vol. 14. No. 17. P. 987–990.

*Mayhew M.J., Rockenbach A.N., Bowman N.A., Seifert T.A., Wolniak G.C.* (2016) How college affects students: 21st century evidence that higher education works. Vol. 1. John Wiley & Sons.

*McDonald L. S.* (2019) The impact of campus facilities on the recruitment of students in higher education (Doctoral dissertation, Western Kentucky University). https://digitalcommons.wku.edu/diss/170.

*Miller A., Shoptaugh C., Wooldridge J.* (2011) Reasons Not to Cheat, Academic-Integrity Responsibility, and Frequency of Cheating // The Journal of Experimental Education. Vol. 79. No. 2. P. 169–184. https://doi.org/10.1080/00220970903567830.

*Mora J.M., Gaete M.* (2021) Cultivating a University's Reputation beyond the Rankings // Higher Education in Russia and Beyond (HERB). Vol. 28. No. 3. P. 5–8. https://herb.hse.ru/data/2021/06/21/1426826886/1HERB_28_print.pdf#page=6.

*Murphy A.* (2023) Is UCAS's Journey to a Million Feasible? // StuRents. 28 April. https://sturents.com/student-accommodation-news/en/2023/04/28/is-ucass-journey-to-a-million-feasible-/3067 (accessed 29 March 2024).

Modern student life: how everything is arranged (2023) // Neravnodushnyy chelovek. 31 July (Современная студенческая жизнь: как все устроено (2023) (Неравнодушный человек. 31 июля 2023 г.). https://goo.su/6hFEp .

*Niemi O.* (2021) Student housing in Europe and in Finland. Student housing as a learning and social environment and as a part of Campus

development. Presentation at the Architecture of the program of the Strategic session «Image of the future campus. Team building» by VEB RF (Russian State Development Corporation that provides financing for socio-economic projects). November 22–23, Moscow, Russia.

*Ninnemann K., Liedtke B., Den Heijer A., Gothe K., Loidl-Reisch C., Nenonen S., Nestler J., Åse Tieva C.W.* (2020) Hybrid environments for universities. A shared commitment to campus innovation and sustainability. Waxmann Verlag. https://doi.org/10.31244/9783830991793.

OECD (2024) Average wages (indicator). doi: 10.1787/cc3e1387-en (accessed on 07 April 2024).

OECD (n.d., a) Enrolment by age (2020, 2021) Education and Training. Education at a Glance. Students, access to education and participation, enrolment by age. https://stats.oecd.org/ (accessed 14 January 2023).

OECD (n.d., b) Share of international students among all students (2021) Education and Training. Education at a Glance. Students, access to education and participation. Share of international students and all students by field. Share of international students among all students. https://stats.oecd.org/ (accessed 14 January 2023).

*Poutanen J., Peltoniemi S., Pihlajarinne N.* (2015) Novel architectural solutions change campus design / In: S. Nenonen, S. Kärnä, J.-M. Junnonen, S. Tähtinen, N. Sandström, K. Airo, O. Niemi (Eds.). How to co-create campus? P. 60–81). http://sykoy.fi/wp-content/uploads/co-create_english.pdf.

QS (2022) QS World University Rankings 2022. https://www.topuniversities.com/world-university-rankings/2022 (accessed 09 April 2024).

*Revington N.* (2022) Post-studentification? Promises and pitfalls of a near-campus urban intensification strategy // Urban Studies Vol. 59. No. 7. P. 1424–1442. https://doi.org/10.1177/00420980211021358.

*Revington N., Zwick A., Hartt M., Schlosser J.* (2023) Universities and urban social structure: gentrification, studentification, and youthification in five United States legacy cities // Urban Geography. Vol. 44. No. 1. P. 83–104. https://doi.org/10.1080/02723638.2021.1985306.

*Reynolds G.L.* (2007) The impact of facilities on recruitment and retention of students // New Directions for Institutional Research. Vol. 2007. No. 135. P. 63–80. https://doi.org/10.1002/ir.223.

*Rodulfo J.* (2024) Why Maslow?: How to use his theory to stay in power forever. Aussie Trading LLC.

*Romashov A., Kashparova Y.* (2020). Relevance of the problem of improper nutrition of modern students // Human Health, Theory and Methodology of Physical Culture and Sports. Vol. 2. No. 18. P. 77–83. https://cyberleninka.ru/article/n/aktualnost-problemy-nepravilnogo-pitaniya-sovremennogo-studenta (Ромашов А., Кашпарова Ю. (2020) Актуальность проблемы неправильного питания современного студента // Здоровье человека, теория и методика физической культуры и спорта. № 2 (18). С. 77–83).

Russian Federal State Statistics Service (2022) The main indicators in doctoral studies in the Russian Federation. www.rosstat.gov.ru/statistics/education.

Savills (2023) European Purpose-Built Student Accommodation Investment Barometer Report (R. Valentine-Selsey & M. Roberts (eds.)). https://www.savills.com/research_articles/255800/353717-0.

*Shcheglova I., Gorbunova E., Chirikov I.* (2020) The role of the first-year experience in student attrition // Quality in Higher Education. Vol. 26. No. 3. P. 307–322. https://doi.org/10.1080/13538322.2020.1815285.

*Shcheglova I., Vilkova K., Dremova O.* (2022) Expectations versus Reality / In: Digital Transformation and Disruption of Higher Education. Chapter 3. Online Learning. P. 22–33). Cambridge University Press. https://doi.org/10.1017/9781108979146.005.

*Shuvalova I., Popov M.* (2021) The formation of a healthy lifestyle of students: possible ways of solving the problem of nutrition // Humanities. Vol. 4. No. 56. P. 53–57. https://cyberleninka.ru/article/n/formirovanie-zdorovogo-obraza-zhizni-studentov-vozmozhnye-puti-resheniya-problemy-pitaniya (Шувалова И., Попов М. (2021) Формирование здорового образа жизни студентов: возможные пути решения проблемы питания // Гуманитарные науки. № 4 (56). P. 53–57.

*Singh S., Thiagarajah V., Banerjee R., Iyenger K., Garg S., Singh B., Ahluwalia R.,* BIOS Collaborative (2023) Delivering surgical education: a specialist surgical society and undergraduate student collaboration // Postgraduate medical journal. Vol. 99. No. 1172. P. 639–643. https://doi.org/10.1136/postgradmedj-2021-140849.

*Sotomayor L., Tarhan D., Vieta M., McCartney S., Mas A.* (2022) When students are house-poor: Urban universities, student marginality, and the hidden curriculum of student housing // Cities. Vol. 124. P. 103572. https://doi.org/10.1016/j.cities.2022.103572.

*Stanton A., Zandvliet D., Dhaliwal R., Blac, T.* (2016) Understanding Students' Experiences of Well-Being in Learning Environments // Higher Education Studies. Vol. 6. No. 3. P. 90–99. doi:10.5539/hes.v6n3p90.

*Stieldorf K., Turrini M.* (2020) Otto Wagner Areal Plus — Green Building Solutions 2020 Design Projects // Green Building Solutions. 02 February, 2021. https://issuu.com/barbara.mayr/docs/owa_booklet_complete_20210121_final (accessed 09 April, 2024).

Tass (2023) The Ministry of Education and Science reported that more than 80% of students in need of a hostel have been provided with places. 28 December. https://tass.ru/obschestvo/19644443.

*Teuber M., Sudeck G.* (2021) Why do students walk or cycle for transportation? Perceived study environment and psychological determinants as predictors of active transportation by university students // International journal of environmental research and public health. Vol. 18. No. 4. P. 1390. https://doi.org/10.3390/ijerph18041390.

The Class Foundation (2023) Student Living Monitor. A pan-European survey measuring the impact of students' living environment on their well-being and happiness. https://www.theclassfoundation.com/slm.

*Triguero-Mas M., Dadvand P., Cirach M., Martinez D., Medina A., Anna M., Basagaña X., Grazuleviciene R., Nieuwenhuijsen M.* (2015) Natural outdoor environments and mental and physical health: Relationships and mechanisms // Environment International. Vol. 77. https://doi.org/10.1016/j.envint.2015.01.012.

*Trunova N., Chepusova Y.* (2021) University campuses and the city: cooperation for competitiveness, August, NGO Foundation «Center for Strategic Research» (CSR) (Трунова Н., Чепусова Ю. (2021) Университетские кампусы и город: кооперация ради конкурентоспособности. НО Фонд «Центр стратегических разработок»).

University 2035 and VEB.RF (2021) University campuses and the city: cooperation for the sake of competitiveness. CSR. https://www.csr.ru/upload/iblock/3f0/kbpm276p3tau6knlzdla3d6ozz0fve0e.pdf.

VEB.RF, & KB Strelka (2021) «INTER-UNIVERSITY CAMPUS». http://campus.strelka-kb.com/ (accessed 07 February 2022).

*Verhetsel A., Kessels R., Zijlstra T., Van Bavel M.* (2017) Housing preferences among students: collective housing versus individual accommodations? A stated preference study in Antwerp (Belgium) // Journal of Housing and the Built Environment. Vol. 32. P. 449–470. https://doi.org/10.1007/s10901-016-9522-5.

*Vidalakis C., Sun M. and Papa A.* (2013) The quality and value of higher education facilities: a comparative study // Facilities. Vol. 31. No. 11/12. P. 489–504. https://doi.org/10.1108/F-10-2011-0087.

*Vinogradova I.A., Ivanova E.V.* (2017) The study of students' and teachers' perceptions of the university environment. Nauchno-pedagogical Review // Pedagogical Review. Vol. 1. No. 15. P. 62–71. https://cyberleninka.ru/article/n/issledovanie-predstavleniy-studentov-i-prepodavateley-o-srede-universiteta.

*Wang, C.-C. D., Mallinckrodt B.* (2006) Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students // Journal of Counseling Psychology. Vol. 53. No. 4. P. 422–433. https://doi.org/10.1037/0022-0167.53.4.422.

*Ward R.* (2021) Covid-19 Impacts PBSA Valuation / Sturents. https://sturents.com/news/2021/01/27/covid-19-impacts-pbsa-valuation/2621/

What students look for in purpose-built student accommodation (2021) // Harris Evolution. 13 May. https://www.harrisevolution.com/our-news/what-students-look-for-in-purpose-built-student-accommodation

*Winchester J.* (2020) Playing it Safe & Sustainable: Here's Why PBSAs are Embracing Co-Living. The Class Foundation. 02 November. https://www.theclassfoundation.com/post/why-pbsa-is-embracing-coliving (accessed 09 April 2024).

*Windhorst E., Williams A.* (2015) «It's like a different world»: Natural places, post-secondary students, and mental health // Health & Place. Vol. 34. P. 241–250. https://doi.org/10.1016/j.healthplace.2015.06.002.

*Yasartürk F.* (2019) Analysis of the Relationship between the Academic Self-Efficacy and Leisure Satisfaction Levels of University Students // Journal of Education and Training Studies. Vol. 7. No. 3. P. 106–115.

*Zulkifli N.F., Othman A., Abd Rahman H., Rahim N.S., Abdullah N.K.* (2019) Team-based Learning: Benefits On Learning And Students' Perception // Education in Medicine Journal. Vol. 14. No. 4. P. 61–69.

*Zupančič N., Palanović A., Ružojčić M., Boštjančič E., Popov B., Jelić D., Galić Z.* (2023) Differential influence of basic psychological needs on burnout and academic achievement in three southeast European countries // International Journal of Psychology. Vol. 59. Issue 2. https://doi.org/10.1002/ijop.12938.

*Zwick A., Revington N., Hartt, M.* (2018) Anchors & diversity: Understanding decline and resilience in Canadian mid-sized cities. https://www.evergreen.ca/downloads/pdfs/2018/FULLSeries_Fleck_Evergreen-Mid-sized%20Cities-Series%20Design-WEB.pdf.

# Appendix 1

This matrix outlines the relationship between student housing options and students' needs as defined by a modified version of Maslow's hierarchy, here referred to through the metaphor of 'wheels'. These wheels — personal, social, and intellectual — encompass a range of needs from physiological and security to self-actualization. Each housing option or amenity is evaluated based on its capacity to satisfy these needs, using a system of one or two check marks. Two check marks indicate that a particular option primarily satisfies a specific type of need, while one check mark suggests the option indirectly fulfills the student need.

This structured approach allows for a nuanced understanding of student accommodations' role beyond mere living spaces, highlighting their potential to support a well-rounded student experience. It emphasizes the importance of a holistic design in student housing that considers not just the physical but also the emotional, social, and intellectual well-being of students, encouraging a more informed and strategic approach to the development and enhancement of student housing infrastructures.

For example, complex meals available in cafeterias or nearby cafes receive two check marks under physiological needs, indicating a direct contribution to this basic requirement. On the other hand, the availability of kitchen facilities receives one check mark under social needs, suggesting that while not directly fulfilling a social requirement, it provides an indirect benefit by facilitating communal activities around food preparation.

The matrix covers a broad spectrum of facilities and services, including food service options, kitchen availability, security measures, medical support, room amenities, social and leisure activities, and the availability of academic and self-study spaces. Each of these categories is analyzed for its impact across the three wheels of needs.

Utilizing this matrix, those in charge of student housing can obtain a clear understanding of how effectively current accommodations address the full spectrum of student needs. This framework acts as a mechanism for pinpointing deficiencies in services and potential areas for enhancement. Amenities that specifically cater to cognitive and self-actualization requirements, including co-working spaces, libraries, and platforms for research and artistic pursuits, highlight the importance of student housing in promoting educational achievements and individual development.

***Matrix of Student Housing Options and Students' Needs: Using the 'Wheels' Framework***

*(Two check marks indicate that an option directly satisfies a specific need, while one check mark denotes indirect satisfaction of the need)*

| Options that cover particular students' needs | Indicators | Students' needs | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Personal | | Social | | Intellectual | | |
| | | Physio-logical | Secu-rity | Belon-ging and friendship | Accep-tance and Respect | Cog-nitive | Aeste-tics | Self-actual-ization |
| Food service option | Complex meals<br>Cafeteria/ canteen<br>Nearby cafes | √√ | | √ | | | √ | |
| Kitchen availability | Personal<br>Common | √√ | | √ | | | | |
| Food vending machines | ok | √√ | | | | | | |
| Food store accessibility | < 5 min<br>5–10 min<br>>10 min | √√ | √[1] | | | | | |
| Average commute time to classes using public transportation | | √√[2] | √[3] | | | √√[4] | | |
| Average commute time to classes within walk-ing distance | | | | | | √√ | | |

[1] Closer to campus, more secure and able to get groceries quickly.

[2] More time for sleeping, less stress because of traffic jams and public transport occupancy (or long distance by foot).

[3] Less possibility to face danger because students do not need to change different types of transport.

[4] More time on learning, less possibility being late or absent on classes.

| Options that cover particular students' needs | Indicators | Students' needs | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Personal | | Social | | Intellectual | | |
| | | Physio-logical | Secu-rity | Belon-ging and friendship | Accep-tance and Respect | Cog-nitive | Aeste-tics | Self-actual-ization |
| Security and access control | Concierge<br>Specialized security service<br>Passing rules | | √√ | | | | | |
| Medical support | Medical station<br>Student hospital | √√ | √√ | | | | | |
| Ability to call emergen-cy services | | | √√ | | | | | |
| Availability of alcohol and tobacco purchases | | √[5] | √√ | √[6] | | | | |
| Room amenities | Full furnishing<br>Home appliance<br>Linens, tableware<br>Individual bathroom<br>Self-service laundry | √√ | | √[7] | | √[8] | √[9] | |

[5] Though this can be connected with students' nicotine addiction (there can be a control for age of majority and warnings about health harm).

[6] Student housing grocery stores may sell low-proof alcohol to adult students on special occasions such as holidays and weekends, when students seek to socialize in a relaxing format.

[7] Comfortable place where students feel themselves as home.

[8] It influences on effectiveness of study, because students have all necessary amenities for comfort living.

[9] Comfortable interior and modern design.

| Options that cover particular students' needs | Indicators | Students' needs | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Personal | | Social | | Intellectual | | |
| | | Physio-logical | Secu-rity | Belon-ging and friendship | Accep-tance and Respect | Cog-nitive | Aeste-tics | Self-actual-ization |
| Parking | | √ | √√[10] | | | | | |
| Possibilities to use services | Cleaning<br>Laundry<br>Housing and commu-nal services | √√ | √ | | | | | |
| Social and leisure activities | Social events<br>Creative events<br>Sports activities<br>University-organized activities<br>Hobby clubs | | | √√ | √√ | √ | | √√ |
| Ability to receive guests | | | √ | √√ | | √[11] | | |
| Outside infrastructure | Parks<br>Sports facilities<br>Baths / saunas / pools | √[12] | | √ | | | √√ | |
| Option of living with pets | | √[13] | | √[14] | | | | |

[10] Security of students' vehicles.

[11] Joint learning, for example, on projects or preparation to exams.

[12] Relaxing time, spending time outside, time for yourself.

[13] Mental health.

[14] Feeling more comfortable, unity with other pets owners.

| Options that cover particular students' needs | Indicators | Students' needs | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Personal | | Social | | Intellectual | | |
| | | Physio-logical | Secu-rity | Belon-ging and friendship | Accep-tance and Respect | Cog-nitive | Aeste-tics | Self-actual-ization |
| Options for roommate choice in student residences | Singles rooms only<br>Ability to choose neighbors<br>No option to choose neighbors | √[15] | | √ | | √[16] | | |
| Distance from the city center | City center<br>Walking distance from the city center<br>In the city limits<br>Out of town | | √ | √[17] | | | √ | |
| Availability of self-study rooms in student residences | | | | | √[18] | √√ | √ | |
| Availability of co-working spaces in student residences | | | | √√ | | √√ | √ | |
| Availability of libraries in student residences | | | | | | √√ | √ | √ |

[15] The opportunity to retire, arrange your own life, or live with a comfortable person.

[16] Availability to study without interruptions by the neighbors.

[17] Connection with local community.

[18] Respecting each other during studying using different formats (self-study, co-working, studying in silence).

| Options that cover particular students' needs | Indicators | Students' needs | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Personal | | Social | | Intellectual | | | |
| | | Physio-logical | Secu-rity | Belon-ging and friendship | Accep-tance and Respect | Cog-nitive | Aeste-tics | Self-actual-ization |
| Availability of research activities in student residences | | | | √ | | √√ | | √√ |
| Self-actualization op-portunities | Student government<br>Mentoring institution<br>Student councils<br>Faculty involvement in student life<br>Volunteering<br>Creative spaces | | | √√ | √√ | √√ | √ | √√ |

The matrix of connection between student housing options and students' needs according to the 'wheels' (two check marks — this option mostly satisfies most of this type of need, one check mark — this option indirectly satisfies the student need).

# A HOLISTIC MODEL FOR STUDENT-CENTERED ON- AND OFF-CAMPUS HOUSING — A COMPARATIVE CROSS-COUNTRY EVALUATION. ILLUMINATING PATHS TO SUSTAINABILITY

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**Abstract.** This study presents a comprehensive framework for evaluating university-managed student housing, assessing its capacity to meet diverse student needs across personal, social, and intellectual dimensions. Drawing on data from 167 student halls in 13 cities across eight European countries, the analysis uses a revised 7-tier needs model based on Maslow's theory. Unlike traditional hierarchical approaches, the model treats all aspects of student housing — facilities, services, social spaces, academic support, and personal development — as equally important to student well-being and academic success.

The methodology applies quantitative content analysis to website data and introduces a novel, multi-criteria, non-hierarchical assessment tool. By identifying deficiencies and proposing improvements, this work supports the development of more supportive living-learning environments that foster holistic student development.

**Keywords:** student accommodation, student housing model, Maslow's framework, students' needs, PBSA, university campus assessment, sustainable student housing, cross-country analysis.

Для заметок

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Contemporary analytics of education
№ 4 (87)

**A HOLISTIC MODEL FOR STUDENT-CENTERED ON- AND OFF-CAMPUS HOUSING — A COMPARATIVE CROSS-COUNTRY EVALUATION. ILLUMINATING PATHS TO SUSTAINABILITY**

Proofreader: *I. Gumerova*
Desktop publishing: *N. Puzanova*
Signed to print 30.06.2025. Format 60×84 1/16
Pp. 6,51. U/I sheet 6,22.

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ISSN 2500-0608
25004
9 772500 060006 >