

MEASURING THE ECONOMIC IMPACTS OF INBOUND HIGHER EDUCATION MOBILITY

Research Summary

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STIPENDIUM
HUNGARICUM



MINISTRY OF
FOREIGN AFFAIRS AND TRADE
OF HUNGARY

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1. INTRODUCTION

Due to the increasing volume of student mobility, its economic significance is unquestionable. Besides attracting talents, generating revenues also plays a pivotal role now for universities recruiting international students. According to a multitude of researches, the presence of international students is economically beneficial for the universities, the cities they are situated in, as well as the country of destination in a broader sense. This benefit is directly realised in tuition fees and the amounts spent on living expenses (Brooks, R. – Waters, J., 2011).

The number of foreign citizens in Hungarian higher education has been constantly rising since the turn of the millennium. From 11,783 students in 2011, by the academic year 2019/2020 we have seen a three and a quarter time increase to 326% of that former figure, which means 38,422 students. The findings of the research conducted in three major university cities of Hungary (M. Császár Zs. et al, 2016–2017) also pointed out that the impact which international students engaged in higher education studies have on economy and employment is a process which is discernible at an institutional, regional, as well as a national level, and therefore its nation-wide, complex study serves an important national economic interest.

„In the first phase of the research focusing on „Measuring the Economic Impacts of Inbound Higher Education Mobility”, conducted under the grant programme of Tempus Public Foundation, in the second half of 2019 we developed the methodology and research and analysis plan for the multi-dimensional measuring of the economic impacts of international students. These provided the basis to this empirical study¹.

The purpose of this research is to measure the local as well as systemic level economic impact of certain target groups of international students (Erasmus+ students, Stipendium Hungaricum grant beneficiaries and fee-paying students); to examine their role and significance as a consumer group; to analyse their multiplier economic effects; to disclose the direct payments into economy; and to analyse their role in tourism, as well their participation in the studentification process of each university city.

1. The methodological background to „Measuring the Economic Impacts of Inbound Higher Education Mobility” was developed at the request of Tempus Public Foundation.

2. RESEARCH METHODOLOGY

We decided to use mixed methodology in the research, using qualitative analysis primarily for expert interviews and focus group studies, and quantitative methods for questionnaire surveys. As regards data sources, we also used sources of secondary data; this data was provided by the Central Statistical Office (KSH), the National Tax and Customs Administration of Hungary (NAV), the National Spatial Development and Management Information System (TeIR), as well as the Higher Education Information System (FIR).

Table 1: Data and research tools used in the research

TOOLS	TARGET GROUP	SAMPLE SIZE	BASIC DISTRIBUTIONS
QUANTITATIVE METHODS			
Database analyses	FIR, KSH, NAV, OPTEN, TeIR, Tempus Public Foundation databases	overall	–
Questionnaire survey among international students studying in a foreign language	Erasmus+ students	398 persons	4,448 persons
	Stipendium Hungaricum grant beneficiaries	4,713 persons	9,035 persons
	Fee-paying students	1,185 persons	19,939 persons
QUALITATIVE METHODS			
Analysis of the relevant literature, conducted during the preliminary phase of the research in autumn 2019	analysis of the relevant domestic and international literature on the narrow topic	a study of the relevant literature, consisting of 52 items	
Interviews	managers, representatives of service providers	14 persons	Pécs, Debrecen, Szeged
	Vice Mayors from local governments of provincial university cities	2 persons	Pécs, Debrecen
Focus group studies	for international students of Budapest-based and provincial universities	52 persons	UP, DU, USZ, ÁTE, CUB, METU, ELTE

The backbone of the research was the questionnaire, consisting of three parts. Its most important element was measuring the economic impacts of the target groups. It was complemented by an examination of international students' role in tourism², as well as in studentification processes. When processing these latter two parts of the questionnaire, we used a Chi-square test for discrete variables and variance analysis for continuous variables, in order to determine the differences of the responses according to gender, countries and universities. In order to determine statistically verifiable, significant deviations, we applied a significance threshold of 5% in both methods.

2. In this analysis, a different method was used to estimate tourism-related spending than in the case of the questionnaire on international students' spending; it is discussed in the chapter which addresses its impacts on national economy, so we may find different figures.

Besides the classic methods, well-established in the relevant literature and applied regularly, we also worked with *elements and methodological approaches developed in accordance with the purposes of this study*³. When choosing the methods - with special regard to developments related to this study -, it was an essential consideration that wherever it proved possible, they should facilitate the repetition of the study at the highest possible temporal resolution.

Relying on the methodology of *probability estimates*, the research appraised at a probability level of 95% the estimated amount generated in national economy by the expenditure of the relevant target group in a number of dimensions. The scope of dimensions examined in this respect included regular monthly expenditure; tourism-related expenses; occasional expenses; the expenses of guests received by the students; the municipal, regional and territorial aspects of the spendings; levels of education; the region of the sending country; gender; the main thematic categories of spending; as well as the total spending, in the latter two cases both at the level of individuals and the target group. It presented a methodological challenge that, in the case of certain expenditure items, since very few students spent considerable amounts in the given category (e.g. housing), the estimation procedure based on traditional t-distribution could not be used, so while keeping the 95% reliability level, we performed the estimation using the *non-parametric bootstrap technique* (Efron, 1979; Paneru, Padgett, Chen, 2018), and calculated bias-corrected confidence intervals (BCa). Besides expenditure, the estimates also covered students' revenues.

Based on the thematic expenditure categories, the study also identified characteristic groups of the students involved in the survey, which were specified using cluster analysis, after the database was adequately sorted and filtered.

The study also examined *how much average estimated revenue* in the first round and directly the student's expenditure *meant to the affected sectors and industries of national economy*, which examination also included *the estimation of the direct employment effect generated by the spendings*. This latter focus area was examined using a model developed with the needs of this study in mind; it allowed us to provide an estimate of the volume of the above-mentioned employment effect based on three different models, one being a national model, another a local model based on national multipliers, and the third one a local, complex model.

Another dimension of this part of the research was provided by the examination of the direct impacts of students' expenditure on public finances (VAT revenues), where we used three approaches: besides applying the average VAT rate, we also used a version adjusted and weighted according to the sectoral distribution of the spendings, and a third one based on the different VAT rates applied in different industries. This focus area also required us to use methodological elements built on findings published in the relevant literature, as well as new ones, developed specifically in connection with this study. All the three models were used to specify the VAT content of students' consumption. Besides having allowed us to disclose the individual dimensions of the direct impact exerted on public revenues, the above models have also contributed to a more elaborate approach when studying the sectoral and territorial aspects of the direct employment effect.

3. During the methodological preparations to the study „Measuring the Economic Impacts of Inbound Higher Education Mobility“, conducted under the grant programme of Tempus Public Foundation, we developed the following in the second half of 2019: based on a critical analysis of the relevant domestic and international literature and relying on the findings of former domestic and international studies, the indicators used for measuring and related to the local and systemic level economic impact of inbound higher education mobility; the methods of using them; as well as the detailed methodological framework required for the empirical study.

Apart from the above, students' expenditure also generates induced, spillover, multiplier effects (besides the direct effects) in national economy, due to the peculiarities of various inter-sectoral connections. This subject matter was also addressed in this research; it was based on the analysis of the Balance of Sectoral Relations (KSH), from which the type 1 multipliers providing a basis for measuring multiplier economic effects were determined using the Leontief inverse. Taking into account the expenditure volumes realised by the students, these allowed the study to provide estimates - taking into account a number of sectoral correlations - of the effects of students' expenditure on output, gross value added, the use of imported goods and services, the number of persons employed, as well as on employees' incomes.

Sample characteristics

The questionnaire survey was conducted at the beginning of this research, between 27 January and March 10, 2020, mostly online. Formerly, we had planned to reach 15% of the population; due to the short period of research, the number and ratio of queries were only much higher than expected among Stipendium Hungaricum students, whereas in the case of the other two groups, the participation rate was relatively lower, owing to the spreading pandemic.

The total number of respondents involved in the questionnaire survey: N=6,296. The ratio of those involved in the questionnaire sample is 18.84% (table 1). We regard each target group individually as 100%, and when determining the confidence intervals using the estimation procedure also used when processing the survey questions about expenditure items, we took into account the sample size constituting the basis of estimation.

Table 2: Headcount data of the population and the target groups included in the sample

Target group	Population		Questionnaire sample		Questionnaire sample / population
	Persons	% ⁴	Persons	% ⁵	% ⁶
Students involved in the Stipendium Hungaricum programme ⁷	9,035	27.0%	4,713	74.9%	52.16%
Fee-paying students ⁸	19,939	59.7%	1,185	18.8%	5.94%
Students involved in the Erasmus+ programme ⁹	4,448	13.3%	398	6.3%	8.95%
Total population	33,422	100.0%	6,296	100.0%	18.84%

4. The ratio of individual target groups in the context of the total population.

5. The ratio of respondents in the questionnaire sample target groups in the context of the total questionnaire sample.

6. The ratio of respondents in each target group included in the sample, in the context of the target group of the relevant population

7. The statistical number of foreign Stipendium Hungaricum students, 2019/20 autumn semester, on 15 October 2019. Source of data: FIR OSAP.

8. In lack of other sources, the number of fee-paying students was calculated based on the autumn 2019 FIR OSAP database. During the calculation, we deducted the number of Stipendium Hungaricum students registered in the FIR OSAP database, and what was left after deduction was considered the number of fee-paying students.

9. Data from autumn 2019, source: TPF database.

The respondents' gender and age

As regards the gender composition of the total sample, we can see that the questionnaire was completed by 3,442 men (55%) and 2,815 women (45%), which means 627 more men than women. 39 respondents refused to give their gender (0.6%).

Table 3: The distribution of the target groups according to gender

Type	Respondent		Male		Female		Did not provide gender		Average age
	Persons	%	Persons	%	Persons	%	Persons	%	
Stipendium Hungaricum	4,713	74.9%	2749	58.3%	1937	41.1%	27	0.6%	25.2
Erasmus+	398	6.3%	141	35.4%	254	63.8%	3	0.8%	22.3
Fee-paying	1185	18.8%	552	46.6%	624	52.6%	9	0.8%	23.5
Total	6,296	100.0%	3,442	54.7%	2,815	44.7%	39	0.6%	24.7

The respondents' country of origin

Taking into account the whole of the sample, the 6,296 students completing the questionnaires came to Hungary from 123 countries to begin or continue their higher education studies. Most of them came from Jordan (390 persons); the fewest who decided to study in Hungary came from Latvia (1 person). The composition by country of the target groups included in the sample can be regarded differentiated. The following table indicates the 10 countries sending the highest numbers of students.

Table 4: Overrepresented, the 10 countries sending the highest numbers of students, by target groups

No.	Erasmus+			Stipendium Hungaricum			Fee-paying		
	Country	Persons	%	Country	Persons	%	Country	Persons	%
1.	Germany	92	23.1%	Jordan	375	8.0%	China	154	13.0%
2.	France	43	10.8%	Syria	287	6.1%	Germany	140	11.8%
3.	Italy	34	8.5%	Pakistan	262	5.6%	Iran	80	6.8%
4.	Romania	31	7.8%	Mongolia	218	4.6%	Nigeria	78	6.6%
5.	Spain	31	7.8%	Azerbaijan	201	4.3%	India	56	4.7%
6.	Turkey	27	6.8%	Brazil	197	4.2%	Norway	51	4.3%
7.	Portugal	24	6.0%	Tunisia	197	4.2%	Korea	39	3.3%
8.	Poland	19	4.8%	China	185	3.9%	Turkey	38	3.2%
9.	The Netherlands	16	4.0%	India	183	3.9%	Ireland	31	2.6%
10.	Belgium	9	2.3%	Vietnam	179	3.8%	Japan	28	2.4%
Σ	Total	326	81.9%	Total	2,284	48.5%	Total	695	58.6%
	Erasmus+ total	398	100%	SH total	4,713	100%	Fee-paying total	1185	100%



In the sample, the students involved in the Erasmus+ programme came from 42 countries (table 2). The Stipendium Hungaricum scholarship students included in the sample came from 69 countries; 19 persons did not provide their countries of origin. Whereas 1,185 respondents from the fee-paying target group came from 106 countries, the students did not indicate a country in their responses in ten cases. In a geographical approach, we grouped the individual countries using the UN methodology¹⁰, according to regions, thus creating groups of countries (table 4), in order to make the analysis easier for ourselves with regard to the 123 sending countries.

Taking into account the whole of the sample, the number and ratio of students among the respondents from the country groupings is dominantly high in the case of students from West Asia (1,506 persons, 23.9%), East Asia (736 persons, 11.7%) and South Asia (719, 11.4%), and moderately high in the case of students from North Africa (521 persons, 8.3%), Southeast Asia (423 persons, 6.7%) and Western Europe (348 persons, 5.5%).

The 4,253 students coming from the 6 listed groups of countries constitute 67.5% of the total sample. 40.7% (162 persons) of the respondents participating in the Erasmus+ programme came from Western Europe, whereas 26.1% (104 persons) from Southern Europe.

Nearly 30% (1,328 persons) of the respondents in the Stipendium Hungaricum target group came from West Asia, another over 30% (1,545 persons) from three groups of countries: South Asia (553 persons, 11.7%), East Asia (496 persons, 10.5%) and North Africa (496 persons, 10.5%), and another nearly 20% (897 persons) from three other groups of countries: Southeast Asia (396 persons, 8.4%), South America (264 persons, 5.6%) and Central Asia (237 persons, 5%).

46.2% (547 persons) of the respondents in the fee-paying students target group came to Hungary from three Asian country groups: East Asia (239 persons), 20.2 %, South Asia (164 persons, 13.8%) and West Asia (144 persons, 12.2%), whereas 25.3% from two European country groups: Western Europe (186 persons, 15.7%) and Northern Europe (114 persons, 9.6%), and 7.3% (86 persons) came from West Africa.

10. <https://unstats.un.org/unsd/methodology/m49/> (date of download: 2020 04 12)

Table 5: The distribution of the target groups among the groups of countries

Group of countries	Respondents		Erasmus+		Stipendium Hungaricum		Fee-paying	
	Persons	%	Persons	%	Persons	%	Persons	%
Australia and New Zealand	1	0.0%	0	0.0%	0	0.0%	1	0.1%
South Africa	68	1.1%	0	0.0%	62	1.3%	6	0.5%
South America	290	4.6%	1	0.3%	264	5.6%	25	2.1%
South Asia	719	11.4%	2	0.5%	553	11.7%	164	13.8%
Southern Europe	323	5.1%	104	26.1%	168	3.6%	51	4.3%
Southeast Asia	423	6.7%	2	0.5%	396	8.4%	25	2.1%
North Africa	521	8.3%	2	0.5%	496	10.5%	23	1.9%
North America	31	0.5%	0	0.0%	0	0.0%	31	2.6%
Northern Europe	131	2.1%	17	4.3%	0	0.0%	114	9.6%
The Caribbean	1	0.0%	0	0.0%	0	0.0%	1	0.1%
East Africa	247	3.9%	0	0.0%	225	4.8%	22	1.9%
East Asia	736	11.7%	1	0.3%	496	10.5%	239	20.2%
Eastern Europe	299	4.7%	70	17.6%	195	4.1%	34	2.9%
Central Africa	42	0.7%	0	0.0%	37	0.8%	5	0.4%
Central America	53	0.8%	1	0.3%	48	1.0%	4	0.3%
Central Asia	253	4.0%	2	0.5%	237	5.0%	14	1.2%
West Africa	275	4.4%	0	0.0%	189	4.0%	86	7.3%
West Asia	1,506	23.9%	34	8.5%	1,328	28.2%	144	12.2%
Western Europe	348	5.5%	162	40.7%	0	0.0%	186	15.7%
Did not provide a country	29	0.5%	0	0.0%	0	0.0%	0	0.0%
Total	6,296	100.0%	398	100.0%	4713	100.0%	1185	100.0%

The respondents' higher education institutions

The total sample consists of the responses of students from 41 higher education institutions. More than half of the respondents included in the sample study at the University of Debrecen (1,243 persons, 19.7%), the Budapest University of Technology and Economics (790 persons, 12.5%), Eötvös Loránd University (737 persons, 11.7%) and the University of Pécs (681 persons, 10.8%); their total number is close to 3,500. The sample includes student groups of considerable size from Szent István University (451 persons 7.2%), the University of Szeged (429 persons, 6.8%) and the Corvinus University of Budapest (327 persons, 5.2%); the three institutions account for 19.2% of the total sample, including over 1,200 students. In the case of the 23 institutions with a student ratio below 1% with regard to the entire database, the database included 346 students, which is 6% of all the students. Of the institutions included in the sample, 23 are Budapest-based and 18 are based outside Budapest. At the time of sampling, 3,395 students (54%) were studying at provincial universities and 2,900 students (46%) at Budapest-based universities.

The respondents in the Erasmus+ programme sample were largely concentrated at the courses offered by Eötvös Loránd University (92 persons, 23.1%), the Corvinus University of Budapest (52%, 13.1%), Szent István University (27 persons, 6.8%) and the University of Pécs (24 persons, 6.0%) (altogether: 246 persons in total, 61.8%).

Somewhat differently, a higher ratio of the respondents receiving Stipendium Hungaricum scholarship chose the courses offered by the University of Debrecen (1,061 persons, 22.5%), the Budapest University of Technology and Economics (757 persons, 16.1%), Eötvös Loránd University (545 persons, 11.6%), Szent István University (397 persons, 8.4%), the University of Pécs (287 persons, 6.1%) and the University of Szeged (287 persons, 6.1%) (altogether: 3,427 persons, 72.8%).

Unlike the above, the fee-paying students in the sample study at the University of Pécs (277 persons, 23.4%), the University of Debrecen (166 persons, 14.0%), the University of Veterinary Medicine (140 persons, 11.8%), Eötvös Loránd University (100 persons, 8.4%) and the University of Szeged (117 persons, 9.9%) (altogether: 800 persons, 67.5%).

The respondents' academic programmes

Taking into account the totality of the respondents in the sample, we can see a predominance of those engaged in undergraduate training (2,732 persons, 43.4%), a decisive ratio of MA students (2,118 persons, 33.6%), and a low but considerable ratio of PhD students (1,020 persons, 16.2%) (table 7). In the case of undergraduate training, the respondents of the Erasmus+ programme, in the case of PhD studies, the Stipendium Hungaricum grant beneficiaries, and in the case of undivided training, fee-paying students deviate in a positive direction from the average figures of the total sample and the figures of other target groups. Students engaged in undivided training showed a similar ratio (17.4%) but lower numbers (206 persons).

Table 6: The composition of the respondents at each level of education by target groups

Level of education	Respondent		Erasmus+		Stipendium Hungaricum		Fee-paying	
	Persons	%	Persons	%	Persons	%	Persons	%
Undergraduate	2,732	43.4%	287	72.1%	1,966	41.7%	479	40.4%
Preparatory	91	1.4%	0	0.0%	35	0.7%	56	4.7%
Master's Degree	2,118	33.6%	79	19.8%	1,706	36.2%	333	28.1%
Undivided	332	5.3%	26	6.5%	100	2.1%	206	17.4%
PhD	1,020	16.2%	6	1.5%	906	19.2%	108	9.1%
Did not provide	3	0.0%		0.0%		0.0%	3	0.3%
Total	6,296	100.0%	398	100.0%	4,713	100.0%	1,185	100.0%

The respondents' fields of education

With regard to fields of education, the respondents in the Erasmus+ programme sample are predominantly from the areas of economic science (87 persons, 21.9%), humanities (69 persons, 17.3%) and social science (60 persons, 15.1%). Stipendium Hungaricum students are represented in the field of engineering in large numbers (1,540 persons, 32.7%), in considerably high numbers in economic science (767 persons, 16.3%) and moderately in information technology (505 persons, 10.7%); besides, we can also mention medical and health sciences, where, in their case, 441 (9.4%) persons were studying. In contrast, fee-paying students only appear dominantly in one field of education, medical and health sciences (626 persons, 52.8%), whereas they show significantly lower ratios in economic science (132 persons, 11.1%) and social sciences (100 persons, 8.4%).

Table 7: The distribution of the target groups according to fields of education

Field of education	Respondent		Erasmus+		Stipendium Hungaricum		Fee-paying	
	Persons	%	Persons	%	Persons	%	Persons	%
Agricultural science	271	4.3%	10	2.5%	245	5.2%	16	1.4%
Humanities	470	7.5%	69	17.3%	315	6.7%	86	7.3%
Economic science	986	15.7%	87	21.9%	767	16.3%	132	11.1%
Information technology	575	9.1%	5	1.3%	505	10.7%	65	5.5%
Law	90	1.4%	33	8.3%	46	1.0%	11	0.9%
Technical sciences	1,644	26.1%	34	8.5%	1,540	32.7%	70	5.9%
Arts	139	2.2%	26	6.5%	76	1.6%	37	3.1%
Medical and health sciences	1,101	17.5%	34	8.5%	441	9.4%	626	52.8%
Teacher training	54	0.9%	20	5.0%	26	0.6%	8	0.7%
Sports science	13	0.2%	4	1.0%	9	0.2%	0	0.0%
Social science	531	8.4%	60	15.1%	371	7.9%	100	8.4%
Natural science	422	6.7%	16	4.0%	372	7.9%	34	2.9%
Total	6,296	100.0%	398	100.0%	4,713	100.0%	1,185	100.0%

3. THE ECONOMIC IMPACTS OF INTERNATIONAL STUDENTS STUDYING IN HUNGARY

In order to study the economic impacts of students, besides the average volume of spending per student - which we will be discussing below - it is important to examine the headcount and the distribution of the target groups. Besides individual volumes of spending, this latter factor provides the other important element of impact assessment.

The total number of students in the three groups exceeded 30 thousand (33,422 persons); within that, the largest ratio of the scope of students under examination, about 59.66%, was accounted for by fee-paying students, 27.03% by Stipendium Hungaricum students and 13.31% by Erasmus+ students¹¹. Examining the subject matter at a group level, from an institutional point of view, Stipendium Hungaricum students showed the most heterogeneous distribution, followed by fee-paying students and finally Erasmus+ students. Taking into consideration the three groups aggregately, one institution received 522 students on average; however, the distribution of the students is rather extreme. At a national level, there were altogether 29 institutions where the aggregate number of the above student groups exceeded 100. In nearly 60% of these institutions, the ratio of fee-paying students was the highest, in 31% the largest student population was accounted for by those studying under the Stipendium Hungaricum programme, whereas in three cases, Erasmus+ students involved in credit mobility dominated. An important aspect is the examination of students' distribution according to municipality. The least balanced territorial distribution was shown by the participants of the Erasmus+ programme, followed by fee-paying students and Stipendium Hungaricum students. Therefore, the last group showed the most balanced distribution from a municipal aspect. The centre of gravity shifts towards Budapest to the greatest extent in the case of Erasmus+ students, who showed the most even distribution in terms of institutions (75.5% of them studied in Budapest-based institutions), whereas the ratio of fee-paying students in Budapest is somewhat lower (53.8%), and the most balanced municipal distribution was shown by the participants of the Stipendium Hungaricum programme (less than half of the group studied in Budapest-based educational institutions). Besides Budapest, the three provincial university cities with the highest numbers of students also bear considerable significance, and they - together with the capital - account for about 91.9% of all the target groups under examination.

International students' volume of spending

Besides the number, distribution and weight of students, there were also considerable differences in the distribution of the target group spendings in terms of their individual volumes. This study examined the

11. From an analytical point of view, this part of the introduction serves to present in detail the first element of the equation defining total expenditure (that is, the number of students in a particular group), in the following dimensions:

- It seeks to demonstrate the actual size of the group (it matters whether a spending of HUF 1,000,000 is associated with one person or a hundred, etc.).
- How evenly and along what pattern the target group is distributed among institutions.
- Similarly, assigning the students to the municipalities according to the official seat.

The relevant equation: The total spending of the target group = The number of students in a particular group * Duration of stay (in this case, 10 months) * Average monthly spending per student.

above issue, on the one hand, according to the nature of the spending in regular, tourism and occasional dimensions, to which, in the case of fee-paying students, the volume of the tuition fees was added as an additional item.

Table 8: The volume of students' expenses according to regular, tourism, occasional and tuition fee expenses

Expenditure item	Erasmus+	Stipendium Hungaricum	Fee-paying
Regular monthly expenditure:	HUF 224,983	HUF 212,396	HUF 259,361
+ tourism expenditure:	HUF 51,048	HUF 32,415	HUF 38,662
Regular monthly expenditure with tourism:	HUF 276,031	HUF 244,811	HUF 298,023
+ occasional spending:	HUF 11,770	HUF 23,148	HUF 74,172
Monthly expenditure with tourism and occasional expenses:	HUF 287,802	HUF 267,959	HUF 372,195
+ tuition fee per month:	HUF 0	HUF 0	HUF 315,586
Monthly expenditure with tourism, occasional expenses and tuition fee:	HUF 287,802	HUF 267,959	HUF 687,781
+ guests' expenditure:	HUF 27,497	HUF 13,545	HUF 21,075
Students' and guests' aggregated total monthly expenditure:	HUF 315,298	HUF 281,504	HUF 708,856

Based on the above items, the students' budget structure showed group-specific features in several respects. On average, fee-paying students spent the most to pay for their regular monthly expenses. In most of the expenditure categories, Stipendium Hungaricum students had the lowest expenses, however, their situation in the occasional spending dimension is different. Although their expenses of such nature do not reach the volume of fee-paying students', they are more than two times higher than the average characteristic of Erasmus+ students. In the case of fee-paying and Stipendium Hungaricum students, the higher rate of occasional spending can also attributed to the longer duration of stay, which may, on the one hand, also justify longer-term investments, and, on the other hand, due to natural reasons (amortisation of assets, student's health), other occasional expenses are also more likely to occur.

In the dimension of tourism expenses, Erasmus+ students spent the most. However, tuition fee as an expense only arose for fee-paying students, but in their case, the average rate is significant, close to the volume of monthly expenses complete with tourism spending.

In terms of spending volumes in proportion to the total academic year, the weight of fee-paying students remains dominant in all the areas; however, the role of Stipendium Hungaricum students is considerably increasing, exceeding the volumes characteristic of Erasmus+ students in each category. The aggregate volume of spendings by the three target groups exceeds HUF 180 billion, of which HUF 62,924,676,813 comes from the estimated amount of the tuition fees paid by the fee-paying students, and HUF 6,648,900,355 is spent by the students' guests. Accordingly, the students' personal expenses account for HUF 111,223,505,154. Within that, personal tourism spending amounts to HUF 12,908,193,098, and occasional expenses to HUF 17,404,079,395.

Table 9: The aggregate spending of Erasmus+, Stipendium Hungaricum and fee-paying student groups

Expenditure item	Total expenditure
Regular expenditure:	HUF 80,911,232,661
+ tourism expenditure:	HUF 12,908,193,098
Monthly expenditure with tourism:	HUF 93,819,425,759
+ occasional spending:	HUF 17,404,079,395
Expenditure with tourism and occasional expenses:	HUF 111,223,505,154
+ tuition fee:	HUF 62,924,676,813
Expenditure with tourism, occasional expenses and tuition fee:	HUF 174,148,181,967
+ guests' spending:	HUF 6,648,900,355
Students' and guests' aggregated total expenditure:	HUF 180,797,082,322

The study also included an analysis of the amounts paid by the government after Stipendium Hungaricum students to the institutions involved in their studies with regard to prime costs, the aggregate volume of which exceeded HUF 27.3 billion (HUF 27,352,854,743) in the academic year 2019. With regard to distribution by institutions, the above amount showed a similar patterns to the distribution of the number of students. The weight of the capital and the three provincial university cities with the highest numbers of students has remained dominant in this respect, too.

The territorial aspects of students' consumption

The volume of spending was accompanied by an extreme territorial distribution; for each group, the capital has the largest weight, while centre of gravity differs in the case of provincial university cities and Budapest. In the case of Erasmus+ students, the volumes of spending in Szeged are the closest to the figure calculated for the capital, followed by Pécs and Debrecen. In the case of the Stipendium Hungaricum programme, the figure calculated for Debrecen is the closest to the volume characteristic of the capital. However, in the case of fee-paying students, we measured the highest total volume of spending, as well as the largest weight compared to the capital, in Pécs, which was followed by Debrecen and then Szeged.

In the case of Budapest, the above effects are transferred by a diverse institutional structure; the total number of students in the student groups under examination exceeded 1,000 in as many as seven higher education institutions, and there were altogether 16 universities/colleges in the capital where the aggregated number of Erasmus+, Stipendium Hungaricum and fee-paying students was over 100. In contrast, in provincial university cities these student groups can almost exclusively be associated with one single institution. This distribution of the volumes of spending was predominantly due to the formerly presented distribution of the number of students, beside which we also examined the volume of spending per student and the local spending ratio. This latter indicator shows the ratio of the income spent in the students' host university cities, and it also suggests the ratio of the student demand which a particular city can realise.

Characteristically of all the target groups, with regard to the highest average spending per capita in Budapest and the three provincial university cities with the highest numbers of students, Budapest comes in first. Local consumption ratios vary in a narrow range; it is the highest (9.7%) in the case of

Erasmus+ students (in the context of the four cities), whereas the lowest ratio (only 4.1%) is associated with Stipendium Hungaricum students. Generally, the students involved in the survey had 79.8 to 87.98% of their consumption in the city where they studied. These consumption ratios showed considerable differences in the cities under examination; they varied between 72.4 and 90.5% in the case of Budapest, Debrecen, Pécs and Szeged. Conspicuously, however, the highest average local consumption ratio was generated by Stipendium Hungaricum students. From the point of view of local economic effects, the development of the background areas also plays an important role; accordingly, the weight of spending per unit may show significant differences.

Examining the issue according to target groups, the extreme distribution of student numbers and their concentration in Budapest is also made apparent by the proportion of Erasmus+ students' spending against county-level and regional GDP: the indicator associated with the second South Transdanubian region only amounted to 32% of the figure measured for the greater region of Central Transdanubia. With regard to target groups, we measured the highest territorial weight in the Northern Great Plain region in the case of the Stipendium Hungaricum programme, whereas for fee-paying students, it was the South Transdanubian region (table 10).

*Table 10: The proportion of students' expenditure against regional GDP per target groups and for the total number of students (in the case of Budapest, Debrecen, Pécs and Szeged, for the year 2018)**

	Erasmus+	Stipendium Hungaricum	Fee-paying	Total target group
Area	Regional proportion			
Central Hungary	0.0395%	0.0555%	0.1849%	0.2799%
Southern Transdanubia	0.0127%	0.0724%	0.3339%	0.4190%
Northern Plains	0.0070%	0.0925%	0.1868%	0.2863%
Southern Plains	0.0116%	0.0325%	0.1400%	0.1841%
Area	Budapest and county proportions			
Budapest	0.0507%	0.0712%	0.2372%	0.3591%
Baranya	0.0317%	0.1802%	0.8314%	1.0433%
Hajdú-Bihar	0.0171%	0.2275%	0.4597%	0.7043%
Csongrád	0.0359%	0.1001%	0.4318%	0.5678%
Country in total	0.0290%	0.0549%	0.1682%	0.2521%

*In the calculations, Budapest constituted a part of the Central Hungary region expenditure.

Examining the aggregate proportion of all the student groups, the effect on the South Transdanubian region and Baranya County proved to be the greatest; in the latter case, the volume of spending exceeded 1% of the county-level GDP.

Students' expenditure structure according to product and service groups

If, besides the volumes of spending, we expand our examination to include the main groups of products and services purchased by the students, the picture becomes more subtle; in this respect, the groups of international students under examination showed a number of similarities.

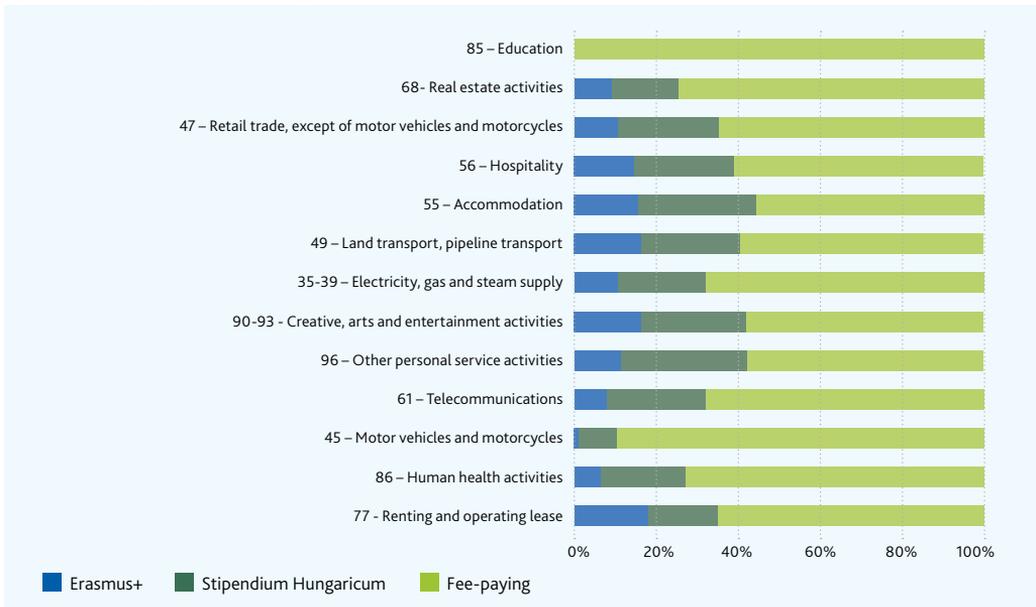
The order of the groups of products and services is the same in all but one group, although the internal distribution varies. Erasmus+ students differ from the other two student groups in their higher level of tourist activity, accompanied by their spending of larger relative weight in the field of leisure activities. The highest expense item for students consists of accommodation related expenses, followed by the amount spent on food, excise goods and hygiene, followed by tourism-related expenses.

Through their expenses, the products consumed and services purchased, the students have an impact on certain industries of national economy, in which we can find significant differences, especially in terms of volume. It was the fee-paying students (19,939 persons) who spent the most, followed by Stipendium Hungaricum students (9,035 persons), and finally Erasmus+ students (4,448 persons), which difference - besides the volumes of individual spending - is also due to the significant differences in student numbers.

The sector which is most affected by the spending of the student groups in question is education, which has a peculiar situation, because this spending item includes the tuition fees, and is entirely realised through the group of fee-paying students. Next comes accommodation, and then retail, two industries which satisfy a number of students' basic needs which, on the one hand, allow very limited space to avoid spending, and, on the other hand, due to the typically higher rents in Budapest and in the provincial university cities with the highest numbers of students, accommodation may include items of larger volumes.

On average, 66.2% of the spendings by industries of national economy (without tuition fees) is accounted for by fee-paying students, 22.3% by Stipendium Hungaricum students and 11.5% by Erasmus+ students. If we also take into account the tuition fees, fee-paying students' share of average sectoral spending rises to 68.8%, while that of Stipendium Hungaricum students changes to 20.6% and the share of Erasmus+ students to 10.6% (figure 2).

Figure 2: The weight of the student groups under examination in the impact on various industries



National and local employment impacts of international students' presence

Through their spending, the students generate demand in a wide range of industries, as a consequence of which their consumption also affects the levels of employment. In the range of the industries most heavily affected by students' spending, even though in various places, but transportation and warehousing also appear, as well as trade, primarily through retail, and also the repair of motor vehicles and other personal services (wellness, hairdresser, beautician, etc.). About 96.7% of the employment impact measured along the spendings of the student groups under examination concentrated on these industries of national economy.

With regard to the territorial horizon of the above employment impact, depending on the target group, its 46–60.5% is concentrated in Budapest, with 51.3% of the aggregated national figures achieved here. The centre of gravity shifts most towards Budapest in the case of Erasmus+ students, while least in the Stipendium Hungaricum programme (54% of the estimated rate of the employment effect due to the spending of students involved in this programme occurred in areas of Hungary outside Budapest). In this respect, fee-paying students represent a transition between the two groups; in their case, the capital receives 51.3% of the estimated effect. In all, about 78.8% of the total estimated employment impact of international students can be associated with Budapest and the three provincial university cities.

Figure 3: Students' total direct employment impact according to target groups in Budapest and in the three provincial university cities with the highest numbers of students

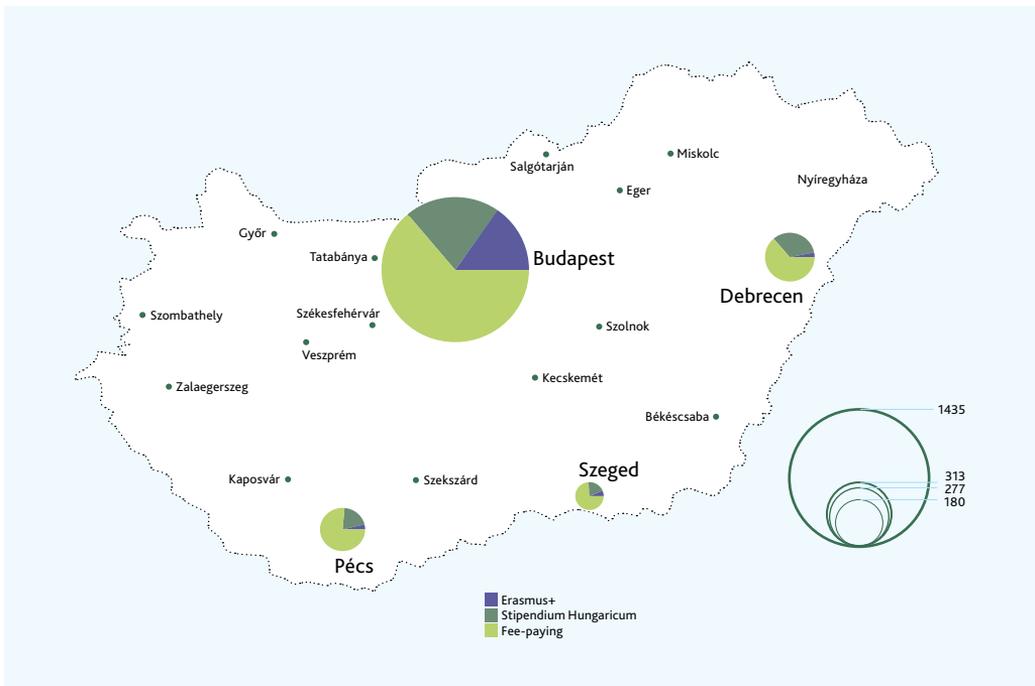
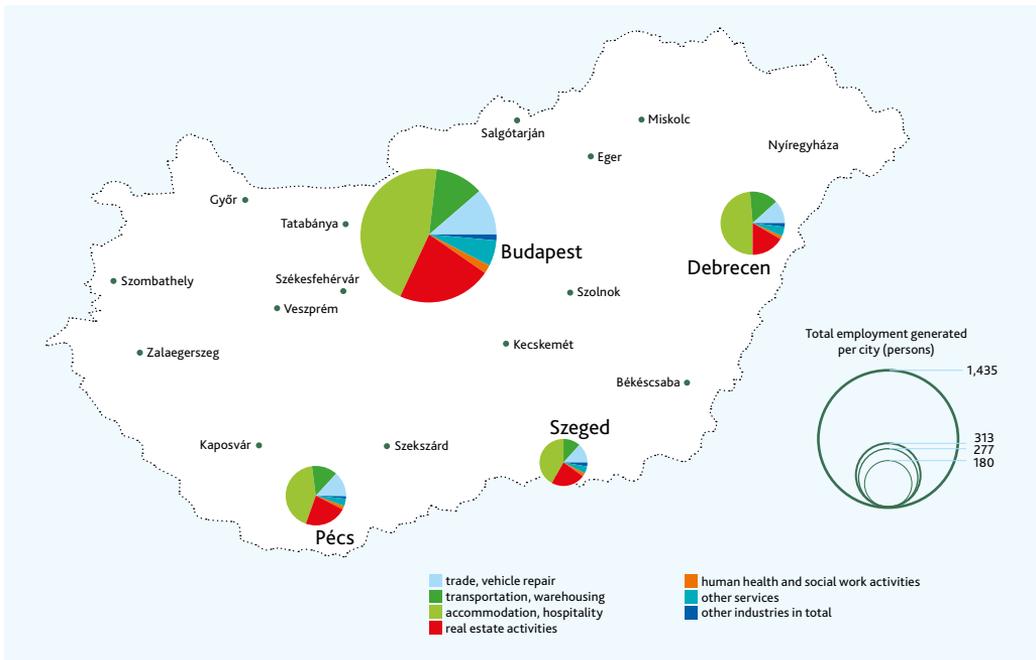


Table 11: The impact of each student group's spending on employment (persons)

Area	Erasmus+	Stipendium Hungaricum	Fee-paying	Total target group
National level	362	655	1782	2799
Budapest	219	301	915	1435
Debrecen	10	104	199	313
Pécs	11	54	212	277
Szeged	12	35	133	180

The sectoral distribution observed at a national level shows a similar picture at a municipal level, too; the majority of the jobs are concentrated in three areas, hotels and restaurants, real estate activities, and transportation and warehousing (figure 4).

Figure 4: The sectoral distribution of the direct employment impact in Budapest and in the three provincial university cities with the highest number of students



Students' incomes

Students finance their spending entirely or partially from their monthly incomes. Based on the study findings, however, these do not fully cover students' expenses, and they finance certain items, such as occasional and unexpected purchases, travels and tuition fees from other sources, supports and ad

hoc, not regular incomes. Apart from these, in terms of monthly income structure the difference lies between students involved in the Erasmus+ and Stipendium Hungaricum programmes, and fee-paying students. The structures of the first two target groups' incomes are similar, whereas that of the latter is considerably different.

Table 12: Students' total estimated income and its structural distribution

The nature of income	Erasmus+	Stipendium Hungaricum	Fee-paying	Total target group
Income totals	HUF 10,714,992,436	HUF 14,769,807,068	HUF 38,617,080,633	HUF 64,101,880,137
Family allowances	36.8%	25.4%	75.5%	57.5%
Grants	54.2%	61.8%	12.2%	30.6%
Student jobs	6.2%	10.6%	6.7%	7.5%
Other	2.9%	2.2%	5.7%	4.4%

The direct budgetary impacts of students' spending

Through their purchases, students can generate budget revenues, a direct impact which can be realized through VAT revenues. The volumes of these income sources vary according to the spendings of the target groups, the sectoral structure of the same and the VAT rates applicable in various industries. With respect to the entire group, the total amount at a sectoral level exceeded HUF 10,985,209,405, the major proportion of which, about 73.1% with respect to the entire target group, was generated in the fields of trade, transportation, hotels and restaurants and other business areas including these activities.

The multiplier effects of international students' spending

Besides the above, this study also included an estimation of the multiplier effects of students' spending exerted through sectoral relations, as well as the impacts on output, gross value added, the use of imported goods and services, the compensation of employees (wages and salaries), and also, the impact on the number of employees, using the Balance of Sectoral Relations (KSH) to calculate the type 1 multipliers needed.

Within the 21 industries and consolidated industry categories most heavily affected by students, in most cases, the major part of the total effect exerted by the consumption of the international student groups under examination occurred as a result of their expenditure in the field of education. With regard to their effect on national economy, the expenses in this field in the case of output, gross value added and the compensation of employees (wages and salaries), as well as employment were the highest, while in terms of the use of imported goods and services, the aggregated effect on national economy exerted by spendings in hotels and restaurants proved to be the greatest. In the case of output and gross value added, education was followed by real estate activities, owner-occupied rental property, and then hotels and restaurant. In the case of the impact on employment, hotels and restaurants was in second place and real estate activities third. Within the compensation of employees, however, the examination of wages and salaries shows a different picture; after education, the second most significant contribution to the total impact exerted on national economy by international students' spendings was due to students' retail spendings and their spillover effects. With regard to the use of imported goods and services, the spendings in the industries of hotels and restaurants, education, and then real estate activities

and owner-occupied rentals, as well as the spillover effects thereof, contributed to the total economic impact to the largest extent.

Summarising the results with respect to the three target groups and all the industries, based on the findings of the study and also taking into account the intersectoral relations, the students' estimated consumption resulted in HUF 213,072,532,086 total output and HUF 124,372,166,177 gross value added, and contributed to the use of imported goods and services with HUF 24,602,575,303, to the compensation of employees with HUF 67,381,940,197 (of which HUF 53,450,536,720 appeared as wages and salaries), and to the number of employees with 19,924.25 persons.

Overall, we can conclude that the consumption of Erasmus+ students, Stipendium Hungaricum grant beneficiaries and fee-paying students in an academic year amounts to HUF 111,223,505,154 through their purchases. This personal expenditure of students' is complete with a number of other dimensions; on the one hand, they pay a tuition fee, the average rate of which with respect to the whole of the group constitutes an estimated revenue of HUF 62,924,676,813, and, on the other hand, they receive guests, who also spend an estimated volume of HUF 6,648,900,355. Thus, the consumption by the students and their guests may generate *an average revenue of HUF 180,797,082,322* for the affected businesses.

Through diverse modes of action, the above expenditures generate further processes in economy, an effect which may also appear in employment and public revenues. Through their spending, students generate extra demand, which can drive the various businesses serving students' consumption to increase employment, the volume of which, based on the findings of this study, is directly an average of 2,799 persons, which means 8.37 persons per 100 students. Using type 1 multipliers and also taking into account the intersectoral relations, the employment effect is close to 20,000 persons (19,924.25 persons). Besides, *students' expenditures also generated public revenues, which totalled over HUF 10,985,209,405.*



4. THE TOURIST CONSUMPTION HABITS OF INTERNATIONAL STUDENTS STUDYING IN HUNGARY

The presence of international students can also have an impact on the tourism of the region, and in a broader sense, that of the entire country, if they visit certain domestic tourist destinations, or receive guests during their stay, whose spendings can also induce complex economic effects.

Examining the tourist consumption habits of international students, we can see that the vast majority of all the three student groups travel 1 to 6 times a year within Hungary: In this respect, Erasmus+ students are leaders, which is most probably due to the fact that they spend considerably shorter periods in Hungary, so presumably they wish to visit as many sights and destinations as possible. The findings of the study suggest that most students choose to travel by train or bus to visit domestic tourist destinations, and most of them travel with friends.

The number of visitor nights spent at tourist accommodation establishments is quite high; on average, Erasmus+ students spend the most time (3.75 days) at the destinations visited, which may justify the assumption that they want to make a more active use of the shorter period of time spent in Hungary through tourism.

Examining the travel frequency of international students studying in major university cities, we can see that students in Szeged travel yearly (59.9%), those in Pécs monthly (14.4%), and those in Budapest weekly, even though at a very low rate (1.6%). Potential travellers can mostly be identified in Budapest, as 20.2% of them do not travel, but plan to.

An important element of the study addressing tourism was the calculation of the amounts spent by the students during a visit, based on their replies. The analysis shows that the expenditures of each group under examination considerably exceed the amount of the per capita average daily expenditure of HUF 15.9 thousand/person/day spent during foreign visits to Hungary, as published in KSH's latest indicators¹² (figure 5), in the case of each item (accommodation+travel expenses+meals and entertainment).

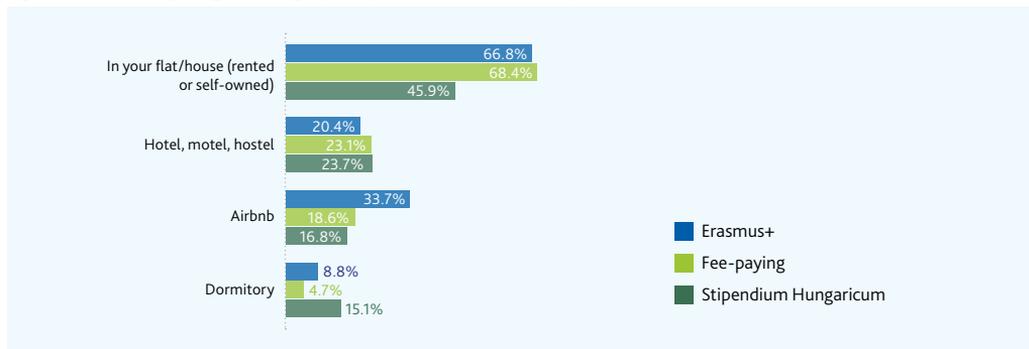
Figure 5: How much, on average, do you spend on the categories below (HUF)?



12. KSH (2019). Helyzetkép a turizmus, vendéglátás ágazatról, 2018 www.ksh.hu/docs/hun/xftp/idoszaki/jeltur/jeltur18.pdf

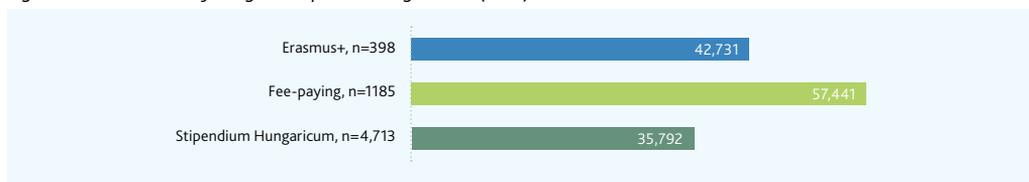
The phenomenon when friends and relatives, most of whom do not pay for separate accommodation, stay at the visited student's place, and are, therefore, a segment which is difficult to detect by official tourism statistics, is called invisible tourism in the relevant literature.

Figure 6: Where do your guests stay? (Multiple answers are allowed)



Of the three target groups, Erasmus+ students studying in Hungary receive the most visitors a year (5.48 persons); the relevant figures of fee-paying and SH students: 3.2 persons - 73.07 persons. However, we also find visitors who choose establishments of commercial accommodation which are important from the point of view of national economy; their ratio is about 20% in the case of all the three target groups. The share of Airbnb, generating considerable business and tax revenues, is especially high with 33.7% among Erasmus+ students.

Figure 7: How much do your guests spend during a visit? (HUF)



The amount spent by relatives, friends and acquaintances visiting fee-paying students who study in Hungary (on average, HUF 57,441), is well above the relevant expenditures of Erasmus+ and SH students. It is also due to the fact that most of the fee-paying students themselves come from countries of (more) developed economy, so, presumably, their visitors' financial situation allows them higher expenditures, too (figure 7).

On average, students in Budapest receive the most visitors yearly (3.44 persons), followed by students in Pécs (3.17 persons), Debrecen (2.79 persons) and Szeged (2.52 persons). On average, guests spend the longest periods of time in Pécs (3.2 nights per person) and the shortest in Debrecen (2.67 nights per person). The relevant figures with respect to Budapest and Szeged are 3.15 and 2.83 visitor nights. In terms of guests' spending, Budapest is the leader with HUF 43,889; the list of cities in question ends with Debrecen (HUF 29,433).



In sum, the motivation towards and the realised demand for tourism is high both among international students coming to Hungary and their visitors, and the tourism expenditures generated by them are an important market of domestic tourism. The financial situation of fee-paying students is also better with respect to travelling than that of Erasmus+ and Stipendium Hungaricum students.

When studying the impact of international students on national economy, we should also examine the significance of the amounts spent by the students themselves and by their guests and visitors in domestic tourism.

We can certainly conclude that, in all, the tourism expenditures generated by international students and their guests represent an insignificant proportion of all domestic expenditures and revenues. In terms of quality, however, we find that per capita expenditures are regularly higher than the Hungarian average.

Tourism in Budapest in itself is of such a high volume which makes the role of the tourism generated by the international students studying there and their visitors insignificant, whereas in the case of our major provincial university cities, it represents a more noticeable item, mainly in the field of hospitality and entertainment. However, this population does not overburden tourism superstructure and infrastructure either in Budapest or the provincial university cities.

It is also clear that, since the government regards increasing the number of international students in higher education as a strategic goal, we can also expect a continuous increase in the figures presented in the study.

We can also see that Hungarian higher education and the travel industry have still not realised the opportunities lying in the travels of international students, which thus still represent an unexploited market potential for Hungary's tourism. This would require the development of an effective marketing strategy at a governmental, municipal, as well as an institutional level.

5. THE IMPACT OF INTERNATIONAL STUDENTS STUDYING IN HUNGARY ON STUDENTIFICATION

According to the process called studentification, when the proportion of the student population grows in a town or city, or parts of them, the local services will, over time, adjust to their needs (Smith, Darren P., 2005). The presence of international students carries a number of opportunities for urban development. Students represent a considerable spending power, providing demand to local services, whether in catering, recreation, transport or other fields. From a housing point of view it is essential that a large proportion of the students live in rentals, which, besides rents, also has a significant influence on real estate prices.

Through an analysis of the location of students' residence within the city, foreign students' residence can be placed in the spatial structure of the given city. According to our hypothesis, the proximity of the higher education institution and/or accommodation in the city centre is ideal for students. Based on that, the respondents' location within the host city/town can be regarded good, advantageous.

Between the three target groups, the only essential difference relates to those living in the city centre. Apparently, the 'better locations' are too expensive for Stipendium Hungaricum students and are mainly an option for fee-paying students, whereas Erasmus+ students prefer the proximity of the university and centrally located accommodation.

As regards the question on the means of transport used to access the universities, we wanted to know how many students use local public transport.

The answers show that 38% of the Erasmus+ students choose to walk and 59% use public transport (this proportion is almost identical with the proportion of those living next to the university and in the city centre). Bicycle was only indicated in 11 cases (3%). 46% of the fee-paying students who plan to stay for longer periods walk to university.

Near the university, or in the city centre, if the university building is close enough, students do not necessarily need to use public transport. The second most important means of transport is public transport (41%). Of the three groups, they have the highest ratio of bicycle users (10%), but the ratio of those travelling by taxi or in their own cars is also low here, too (below 1%). Among SH students, the proportion of those using public transport with almost two-thirds (62%) is considerably higher than among fee-paying students. The presence of walking (33%) also suggests the proximity of residence.

The ratio of those using public transport is the highest in Budapest (above two-thirds), and that of pedestrians is significantly lower (one-quarter). This is the other way round among the university students of Debrecen. In Szeged, the use of public transport is significantly lower (than in Debrecen), and in Pécs, the situation is more balanced (45-50%). The use of various means of transport correlates with the distance between students' places of residence within the given city or town and the university faculties, or the habits of different nationalities - for example, many German students ride bicycles.

Based on the answers about the length of time needed to get to the university, the large proportion of the places of residence near the university and the high ratio of those who choose to walk or use public transport basically indicate that shorter lengths of time are generally typical. The duration of travelling is in accordance with the location of the accommodation within the city or town. Erasmus+

and fee-paying students who consider the proximity of the institution important (and can also afford it) need less time to get to the university, whereas it takes Stipendium Hungaricum students longer.

Budapest was given the position of the longest average access duration (above 20 minutes) due to its large expanse. The major provincial universities are close to each other in terms of average duration of access. Generally, this duration is the longest in Debrecen, except for Erasmus+ students in Pécs.

The questions about student satisfaction sought to assess the rate of students' satisfaction about the characteristics of the city where they studied and lived.

We asked students about seven major characteristics, using a scale of 1 to 5, where 1 represented 'totally dissatisfied' and 5 represented 'fully satisfied': the quality of the environment (housing options, public spaces); the quality of transport; the variety of services (beautician, hairdresser, shopping opportunities, etc.); entertainment, recreation and cultural opportunities; accommodation costs; other costs (service costs, entertainment costs). In the case of scholarship students, only the four large cities (Budapest, Debrecen, Pécs and Szeged) provided worthwhile data, due to the sample figures.

Examining the answers from a territorial aspect, in the case of Erasmus+ students, Budapest has the highest number of cases and the highest rating (3.78) for average satisfaction, too. 39% was 'satisfied' (option 4) and 24% fully satisfied (option 5). However, as opposed to the three provincial university cities, total dissatisfaction was also indicated here (3%). Debrecen was given a somewhat lower rating, 3.68. Szeged and Pécs were given considerably higher ratings than the aggregated average. Szeged was given a rating of 4.04, whereas in the case of Pécs it was even higher, 4.13.

In fee-paying students' evaluations, Budapest has a strong leading role. Its average of 3.65 is a little below that of Erasmus students', but it is clearly ahead of provincial cities. Szeged has an average of 3.30, Pécs 3.24 and Debrecen 3.01.

The evaluations of SH students show a similar picture to those of fee-paying students. A difference is that, although students generally gave higher ratings (except for Budapest, there were higher averages, Budapest: 3.51, Szeged: 3.53, Debrecen and Pécs: 3.31).

Students have a good opinion of their living environment. Students are generally satisfied with the living environment in the cities. Besides the high ratings, it is conspicuous that among fee-paying students, Budapest has higher scores, whereas SH students favour provincial cities.

The evaluation of transport options can be regarded the best. The respondents consider transport in Budapest particularly good. Among our provincial cities, Szeged consistently comes in second, and the scores given to transport in Debrecen (except by Erasmus students) are also higher than in Pécs. Fee-paying students were more critical of Pécs, whereas for Erasmus+ students it was Debrecen.

The differences in the evaluations about services in the capital and in the country are also significant. Especially the evaluations of fee-paying students suggest that Debrecen has clearly fallen behind. In the case of Erasmus+ students, Szeged, and in the case of SH students, Pécs ranks last (table 12).

Table 13: The evaluation of services

Services	Erasmus+ (EG)	Fee-paying student (FS)	Stipendium (SH)
Budapest	4.57	3.62	3.72
Debrecen	3.37	2.74	3.31
Pécs	3.81	3.13	3.24
Szeged	3.29	3.09	3.52

Concerning the evaluation leisure activity (entertainment) options we can conclude that among the most critical fee-paying respondents all of our provincial cities ranked below average. The capital is followed by Pécs and Szeged (except among Erasmus+ students) with “mediocre/average” ratings. Debrecen consistently received the lowest ratings, especially from fee-paying students.

Erasmus+ students (perhaps due to the shorter period of time) consider the situation very good. Among SH students, the ratio of “very good” increased back to 20% and the aggregated ratio of “good” and “very good” increased to 23.2%.

With respect to the evaluation of accommodation costs, Pécs has seized the lead, with similar scores to those of Budapest among fee-paying students. Budapest’s lead seems to be the smallest in this field, and Debrecen has only fallen behind due to the strict ratings from fee-paying students. The lowest ratings were given by SH students, probably due to being tied to a dormitory (and the standards of dormitories). Erasmus+ and fee-paying students consider this type of cost somewhat better than average.

With regard to the evaluation of costs of living, the differences between the student groups seem to become constant (table 13). Erasmus+ students are the most satisfied (65% “good”, “very good”), followed by fee-paying students (54.5%) and finally SH students, with a more critical evaluation (41.6%). The latter gave the highest ratio of “mediocre/average” ratings, too.

From a territorial aspect, fee-paying students find Budapest the best. The lowest ratings were given by the more cost-sensitive SH students, and they also considered Szeged better than the capital in this respect. In the case of Debrecen, we can see ratings similar to those of Budapest.

Table 14: The evaluation of costs of living

Costs of living	Erasmus+ (EG)	Fee-paying student (FS)	Stipendium (SH)
Budapest	3.80	3.64	3.24
Debrecen	3.93	3.11	3.22
Pécs	4.22	3.46	3.14
Szeged	3.64	3.55	3.43

As regards “other costs”, fee-paying students seem to be the most critical. For SH students, Budapest appears to be the most expensive.

Concerning the question “Do you miss any opportunity in the city?”, about one-third or half of the respondents said they were satisfied with the conditions. In this group, Erasmus+ students were represented in the highest numbers (55%) and fee-paying students in the lowest (31%). Most of the students were dissatisfied with leisure activity options and services. Many mentioned the lack or difficulties of communication in English. The issue of the lack of job opportunities was very accentuated among SH students. Generally, students studying in Budapest are apparently more satisfied.

Summing up the replies given to the survey questions, we can conclude that the three different student groups (Erasmus+, Stipendium Hungaricum and fee-paying students) have given consistent answers, despite the differences in the lengths of their stay, in their goals (credit, diploma) and in their funding and financial opportunities.

It is a general finding that international students' primary goals include (after choosing a higher education institution) finding accommodation in Hungary which is close to the institutions or is in the city centre. The attraction of the institutions (especially in provincial university cities) can be increased by

providing more high-quality housing options within or near the campuses. Private investors, too, have become aware of this process, which also has a considerable price-increasing effect in the university cities (Budapest, Debrecen). The students gave low ratings to rent prices when evaluating accommodation costs in our major university cities. Providing high-quality accommodation in the dormitories could even enable the institutions to increase their revenues considerably.

Generally, international students are very satisfied with the Hungarian (public) transport system. In this respect, Budapest received outstanding ratings, but our provincial cities were also rated well above average. Taking into account their daily routines, we can specify goals with regard to developing pedestrian and bicycle infrastructure. They mentioned the lack of enough bicycle routes in almost all the cities (especially in Budapest and Pécs), which can present challenges for the local governments.

The questions relating to the standards of services, as well as opportunities of entertainment / leisure activities received significantly poorer ratings. The common feature is that, in both cases, international students considered the opportunities offered in Budapest good or very good. In the case of our provincial cities, low ratings are common. The students who come from diverse cultural backgrounds have definite needs in terms of entertainment opportunities.

With regard to the costs associated with being a foreign student, accommodation costs received the lowest ratings, frequently below average. Budapest and Debrecen received lower-than-typical ratings. In terms of costs of living, Budapest does not belong to the category of more expensive cities.

The issue brought up most frequently and by almost all the student groups was the lack of English communication. The other problem was the lack of job opportunities, pointed out by SH students.

With regard to costs, the 'cost-sensitiveness' of Stipendium Hungaricum students is conspicuous. At the other extreme were Erasmus+ students, who (coming from Europe) regarded Hungary as a country with good price-to-value ratio. Generally, fee-paying students who yield the largest revenues are noticeably the most critical ones.

We can also identify differences between groups of countries. Generally, the ones who gave the best ratings for costs came from the countries of North Africa, North America, Southeast Asia, Central Asia and Northern and Western Europe; the most critical students came from East and West Africa and South and West Asia.

The conclusion of the comparison between the cities receiving international students is that Budapest can be regarded as a separate category, differing from the provincial cities in many respects. Based on students' ratings, the image of the three major provincial university centres (Pécs, Debrecen and Szeged) is less favourable. Although their average scores are quite close, there is some kind of order among them, with Szeged and Pécs being a little ahead of Debrecen. In these cities, there is still a lot to do to expand the studentification process, primarily in terms of enhancing the relations between the cities and the universities, assessing students' needs and expanding the range of services accordingly, reorganising public transport as required and developing a more differentiated range of housing options (primarily in terms of pricing), preferably close to the universities. The ratings can be deemed useful, because they enable us to identify the services which need improvement either in terms of prices, standards or quality.

6. ECONOMIC AND SOCIAL IMPACTS THROUGH STUDENTS' AND SERVICE PROVIDERS' EYES

The two qualitative studies sought to provide more detailed results with regard to both students' opinions and service providers', suppliers' side.

FOCUS GROUP STUDY

The study based on international students was directly preceded by the above questionnaire survey. Based on its findings, we set two focus group guidelines in which we elaborated and expanded the scope of information on the economic and social impacts of international students focusing on two subject matters which students can easily identify with. In the first set of questions, we asked them about their travels within Hungary and the characteristic features thereof. In the second one, we sought to elicit information on how satisfied they were with their current place of residence in Hungary, the city, as well as the services it had to offer. The study involved students from seven universities, the three major provincial universities and four Budapest-based universities. The findings of each focus group study confirm or complement the replies received in the two focus areas of the questionnaire.

Summary of the study conducted among students of major provincial universities

The students in the provincial university cities mainly choose Budapest as a tourist destination. In the case of students studying in Pécs, the situation is more complex; besides the capital, the Lake Balaton, as well as the nearby towns of Orfű, Siklós and Villány are also attractive destinations. The most popular means of transport are vans, but coach and train trips are also common. Students of all the major provincial universities equally highlighted the lack of information signs in English, as well as the lack of English communication at tourist destinations, service providers and on various means of transport.

Clearly, they have the need, the willingness and probably the money, too, to travel more within the country, but they have little free time to do so, and find it hard to organise the trips. It would probably take direct tools to call their attention to domestic tourism. They would like a lot more opportunities where they can meet English-speaking Hungarian students and ask them about local culture and sights.

As regards services, they are most satisfied with sports opportunities. With respect to cultural programmes, however, they thought there were few movies in English. They are generally more critical towards public transport than students in the capital, and they consider public transport fares in Pécs particularly high.

Summary of the focus group studies conducted at Budapest-based universities

The students studying at the universities of Budapest are definitely satisfied with public transport in Budapest, its cleanliness, standards and inexpensiveness. They find the capital, its historical buildings, the standards of its bars and clubs, as well as the prices, very attractive. Many say they will return to Budapest again as visitors. They also like the natural environment around Budapest, as well as spas. Most of

the students who study in Budapest also visit Lake Balaton, the broader vicinity of the capital and some famous tourist attractions. They define Budapest as a city of lively culture. Within cultural life, besides movies, concerts are also very popular, however, they think there are very few cinemas and theatres offering English-language films and plays. The capital also offers great outdoor sports opportunities at locations such as Normafa or Margaret Island.

The students highlighted safety and the affordable services, however, all of them noted that there were a lot of homeless people, drunk tourists, dog dirt and litter around, that there were few public toilets and Wi-Fi hotspots, and they also missed the Amusement Park.

EXPERT INTERVIEWS

The goal of making structured interviews with players of the services associated in various ways with the students of provincial university cities, as well as with the leaders of provincial university cities, was to get an insight into these parties' activities, services and potential developments related to international students.

Summary of the interviews with leading officials of two provincial cities

The opinions of the two Vice Mayors well reflect the differences of the two provincial university cities in terms of their economic significance and levels of economic development, as well as how much local economy adjusts to students' consumption. Apparently, it is a more essential factor for Pécs, as the city's predominantly service-oriented economy is more reliant on international students' consumption. In Debrecen, however, their presence is only considered an 'additional benefit'.

Both cities try to take into account the needs of international students when developing services. As regards forthcoming developments, the city of Pécs is planning a complex package designed to improve foreign students' satisfaction. It includes developments such as the transformation of public transport based on passenger traffic, the introduction of a smart parking mobile application in downtown Pécs in autumn, which will also help cyclists by reducing car traffic. Student satisfaction may also be improved by the real estate development focusing on the neighbourhood of the medical and engineering faculties. In 2016, under the Modern Cities Programme, the city gave the entire budget of HUF 25 billion to the university; as part of the programme, preparations are underway to establish the 11th faculty of PTE, the Faculty of Dentistry, including the construction of a new building complex in the city.

Debrecen is also planning public transport developments, although not specifically with international students in mind, but helping them, too, by connecting the airport to the Eastern network through Istanbul.

Summary of interviews with entrepreneurs (Pécs, Debrecen, Szeged)

We used qualitative methods, as well as the methods of in-depth interview and structured interview to obtain information. We needed to mix the two techniques because we could not make an in-depth interview with all the interview subjects personally, due to their other commitments, during the research, and the developments of the pandemic also forced us to do so. Thus, we contacted and interviewed a part of the respondents via e-mail. In these cases, we used the methods of structured interviews. In each type of interview, the subject we talked to held a senior position within the respective company or was

the owner of the company. The study focused on three provincial university cities: Pécs, Debrecen and Szeged, where we contacted managers or representatives of gyms, restaurants and real estate agencies.

The interviews have pointed out that international students have an equally positive impact on all the businesses and service providers (restaurant, pubs, clubs, as well as real estate agencies and gyms) examined. Each company or enterprise seeks to adjust their services to the needs of international students, too. International students' use of urban spaces affects the turnover, operation and profile of the units located in different areas.

Their presence also affects local labour market; service providers look for and employ staff with decent foreign language skills. Where English is spoken in downtown locations, international students account for half of the restaurant-goers. Night clubs in Pécs concluded that international students could be attracted by varied and high-quality parties, and they spent somewhere between HUF 3,000 and 10,000 a night per person. In summer, therefore, higher-end clubs and restaurants are heavily affected by the lack of international students. In Szeged, however, the ratio of international students at night clubs and restaurants is about 10-20%, 2 or 3 times a week, with an expenditure of HUF 2-3,000, which mainly represents beverages.

With regard to accommodation, international students definitely prefer renting to buying a property, and housing options which are close to a given university faculty are clearly more attractive. As for the establishment and location of gyms, it also turned out that three-quarters of them do not rely on the presence of international students, who only represent up to 40% of their customers.

In Debrecen, we can also find a novelty enterprise, a delivery company specialising in foreigners, established by a former foreign medical student. This, however, according to the interview subjects, reduces the number of international students at the restaurants to below 10%, even during university.

In sum, businesses in Pécs are apparently more prepared for international students than those in Debrecen and Szeged, and are currently benefiting from them a lot.



7. SUMMARY AND SUGGESTIONS

Based on the findings of the questionnaire survey of the research titled “Measuring the Economic Impacts of Inbound Higher Education Mobility” and the focus group studies and interviews that followed, we can conclude that the value added to national economy by the three target groups of international students studying in Hungary, that is, Erasmus+ students, Stipendium Hungaricum grant beneficiaries and fee-paying students - in total, 33,422 students -, is considerable. All this can be realised in, among others, students' annual consumption figures, direct budgetary revenues and employment effects.

The effect of international students' consumption on regional development is differentiated; in the case of each target group, the capital has the greatest significance, followed by the three major provincial university cities, Pécs, Szeged and Debrecen, to various extents in the case of the individual target groups. From the point of view of local economic effect, the background areas in the environment of the University of Pécs, the South Transdanubian region and Baranya county seem to be the most developed. In this respect, we can conclude that the city leaders and the representatives of the service providers involved in the interviews have realised the significance of the economic effects of international students' presence, and that their developments are in line with that realisation.

We can also conclude that international students' tourism spendings present an important market within the tourism sector of Hungary. Their consumption and the contribution of the guests they receive, the ones involved in the so-called 'invisible tourism', are quite considerable, both in terms of the nights spent at tourist accommodation establishments and the rate of daily expenditure, with both exceeding the daily average published by KSH.

The examination of the studentification process pointed out that one of the most popular destinations for international students studying in Hungary is the capital. Their satisfaction with the city is due to the good public transport, the cultural values and sights, the high-quality services etc. of Budapest. With regard of the other university cities, the needs of the international party and the deficiencies in offer are more obvious. It is essential for the future of provincial university cities to address international students' expectations in a more determined and planned manner. The challenges are more or less the same, but, of course, the solutions may differ from city to city.

SUGGESTIONS

International students both directly and indirectly create jobs in tourism in a given region, as well as at a national level; a precise account of that, however, would present serious challenges and require further research. It would be worth initiating an analysis of the impact of international students on tourism through another research, and within that, to examine how significant a role the amounts spent by international students and their guests play in Hungary's tourism.

Hungarian higher education and the travel industry have not yet seized the opportunities lying in the travels of international students, which thus remains an unexploited market potential in Hungary's tourism, with special regard to regional effects, including our provincial cities. That, however, would require the development of an appropriate marketing strategy at a governmental, municipal, as well as institutional level.

In the provincial university cities receiving high numbers of international students, as well as in Budapest, it would be useful to increase the number of English signs and information boards in public spaces and service locations.

Following an assessment of students' needs, it would be worth organising 1 to 3-day-long trips to domestic tourist destinations, in cooperation with the international departments of universities.

The students unanimously suggested that there should be more English-speaking films in the cinemas, and that international students should get a discount at major Hungarian museums and galleries.

The cleanliness of the living environment and the cities, as well as the continuous improvement of services are among students' basic requirements.

From the point of view of Hungary's image abroad, it is essential that the international students studying here return home with positive experiences about the country and their host cities. In the future, image and brand building may represent a resource for Hungary, and international students with positive experiences about the country may as well become a kind of ambassadors promoting Hungary's image. Positive effects can also mean that, most probably, foreign graduates will not only share their opinions about their university, its seat and the host country in their future jobs, but also through informal channels, and that they will also look for the brands which they met and got to like in Hungary. An important goal for the leaders of the universities and the cities could be to operate an international network of relations through which foreign students returning home could make it easier for Hungarian businesses to enter the market.

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