

# THE IMPORTANCE OF INTERNATIONAL STUDENTS: A CASE STUDY

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## Abstract

Higher education institutions (HEI), over the last decades, are gradually invested in determining their importance to the regions where they are located. In Portugal, educational areas are facing budget cuts, the HEI are under constant scrutiny to explain their value to society, and they have to compete among themselves for higher enrolments to increase their budgets. However, to compete in a more unbiased way for public funding's, HEI should determine their contribution to the hosting regions, in terms of their economic impact. The economic impact of HEI for the region is strongly associated with the presence and economic activity of the national and international students. The international students represent, today, an important segment for the institutions, and they are growing every year with the globalization of markets and societies.

Therefore, the present study intends to understand how the presence of international students can influence the region, not only determining the economic impact that international students have on the region, but also to understand how they are integrated in the academy and with residents and how their culture and backgrounds can enrich residents' culture and experiences. A quantitative approach methodology was followed, with a descriptive study developed through the implementation of a survey. The population considered were the emails made available by the International Relationship Office and the academic services in 2018 that reached 1,449 international students that were enrolled in the IPB. There were 478 responses. The sample analysis allowed us to characterize the international students and estimate the economic impact of these students through their monthly spending and to understand how they connected with their colleagues and how was their relationship with local community. The direct economic impact estimated for the international students who attended the Polytechnic Institute of Bragança in the studied year attained 6.8 million euros. It was also relevant to find that almost all the international students found their experience very positive, that they felt welcome by the academy and by the local community.

Keywords: International students, economic impact, international study experience, academic integration.

## 1 INTRODUCTION

Higher education institutions (HEI) have focused increasingly on understanding and estimating their importance to local and regional dimensions. In Portugal, over the last two decades, the changes in the economic context enhanced this commitment [1]. Portuguese educational areas faced budget cuts, the HEI are under constant scrutiny to explain their value to society, and they must compete among themselves for higher enrolments to increase their budgets ([1], [2], [3]).

However, to compete in a more unbiased way for public funding's, HEI should determine their contribution to the hosting regions, in terms of their economic impact [1]. The economic impact of HEI for the region is strongly associated with the presence and economic activity of the national and international students. Today, the international students represent an important segment for the institutions, and the numbers are growing every year with the globalization of markets and societies [4]. The Bologna process, for example, boosted the student mobility within Europe [5].

The number of foreign students that cross borders to study in international institutions, in the last 40 years, changed from the 0.8 million registered in 1975 up to 4.6 million, registered in 2015. Student mobility has increased considerably in the last five decades and it is expected that this growth will continue ([6]; [7]; [8]). Between 1998 and 2019, the growing average, for foreign tertiary students, was of 5.5% per year and so in 2019 there were already 6.1 million international mobility students [7]. Most of the international students come from developing countries, in fact in the OCDE area the number of international students that come from developing countries reaches 67% [7].

Therefore, it is understandable the importance of international students to regional hosting economies. In the United Kingdom, at date the second inbound country of international students (the United States of America was the world's major destination of international students) the conclusions of a study that analysed five regions determined that the expenses of these students represented an indispensable input to the regional economy ([9], [10]).

It is clear that international students are a current and effective source of income for the HEI, with their higher tuition fees, and for the regions, due to their expenditures [7].

The present study has a main objective to estimate the economic impact of the Polytechnic Institute of Bragança (IPB) international students. The economic impact estimated is restricted to the municipalities where IPB is located, namely Bragança and Miranda.

Furthermore, even though international students can have an economic impact in the regions where HEI operate, mainly due to their revenue stream of differential tuition fees, the institutions cannot focus only on their recruitment and their tuition fees. There must be a careful understanding and preparation of the academic community to integrate them since this is important for their academic performance [11]. As such, a second objective of this study is to understand how the international students evaluate their experience in Portugal, specifically in the IPB, in terms of their integration.

Although international students are an asset to HEI both economically and culturally, they face serious challenges in their adaptation to the culture and educational system (Yan & Pei, 2018). This is a relevant aspect since international students reportedly have difficulties when they try to establish social networks with the students from the hosting country and reportedly have unfriendly experiences, feel misunderstood, discriminated and isolated, which then reflects on their emotional state and in their academic performance ([12]; [13]).

As stated before, this paper describes the economic impact of the international students and their perceptions about their integration on the Polytechnic Institute of Bragança (IPB).

The IPB is a public higher education institution located in the northeast of Portugal focused on "(...) creating, transmitting, and disseminating technical-scientific and professional knowledge through the articulation of study, teaching, applied research and experimental development." [14]. The IPB stimulates the internationalization of higher education, strongly promoting the mobility of its students and graduates. To do so, the IPB has numerous educational and research projects with European and international partners [15].

This paper has four sections: i) in the first section, a theoretical framework about the economic impact of international students and about the integrational aspects is presented; ii) in the second section the research methodology is described; iii) the third section describes the estimation of the economic impact and presents the perception of the international students regarding their integration; iv) in the last section final considerations are given.

## **2 METHODOLOGY**

The study presented was conducted in a Portuguese higher education institution (Polytechnic Institute of Bragança – IPB) and it focused on the importance of international students in the region, in terms of economic impact and in the integration of these students. In 2018, the International Relationship Office and the academic services made available 1,449 emails registered for international students of the previous academic year that reached 20.0% of all registered students. And the study focused on these students.

The methodology followed a quantitative approach. We conducted a descriptive study that considered two aspects, namely an economic aspect, where we intended to understand the international students' consumer behaviour and spending pattern; and a relational aspect, where we intended to understand how their relationship with other students was and how they felt in terms of academic integration.

An online questionnaire was developed, in Portuguese and English languages, and it was sent to the 1,449 emails collected from both official services previously named. The questionnaire had a 33.0% response rate, with 478 responses. The following section describes the main results obtained.

### 3 RESULTS

This section presents the results obtained, first describing the sample in terms of sociodemographic characteristics, then the spending behaviour of the international students, and finally presenting their academic integration and other social aspects.

#### 3.1 Sample of the international students

The inquired students that constitute the sample are 51.2% male and have, in average, 23.3 years with a median of 22.0 years. It was also possible to determine their country of origin. Most of the international students (IS) come from Portuguese spoken countries such as Cape Verde (30.9%) and Brazil (25.4%), São Tomé and Príncipe (6.6%), and Angola (3.0%). The other countries with a higher representativity are Poland (5.3%) and Spain (5.1%). When analysing the IS in terms of continental origin 46.9% are from Africa, 26.4% come from America, 20.7% from Europe and 5.9% from Asia.

The international students that come to Portugal to study, and in this case to the IPB, to have a scholarship must belong to an international cooperation agreement, and 57.4% comes under an international agreement. The others come on their own expenses.

From the different available international agreements that allow the students to have a scholarship, 54.1% are under the Erasmus+ program, 21.1% under international mobility, 13.8% are Double Degree students and the remaining have scholarships from their local governance protocols.

The choice to study in IPB was analysed to understand how the IS decided to study there and in 62.6% of the IS chose the IPB as their first choice to study abroad. This decision is influenced by the fact that IPB has an agreement with their home institution (44.5%), for 29.3% is due to economic reasons, and for 18.6% the choice was influenced by positive feedback from other colleagues. The IS enrol mostly in undergraduate degrees (66.9%) and 27.3% enrol in a master's degree.

The IS have different lengths of stay in the region/country, some stay only for a semester, but there are some that come for the entire degree. The ones that stay for one or two semesters reach 44.0% of the inquired students but the majority remains for at least one year (55.9%). These different patterns can be associated with the IS's region of origin. In fact, one can easily observe that there is an association between the region and the period of stay (the statistic test of qui-square has a value of 245.45 with an associated evidence value of less than 0,1%), as presented in Fig. 1.

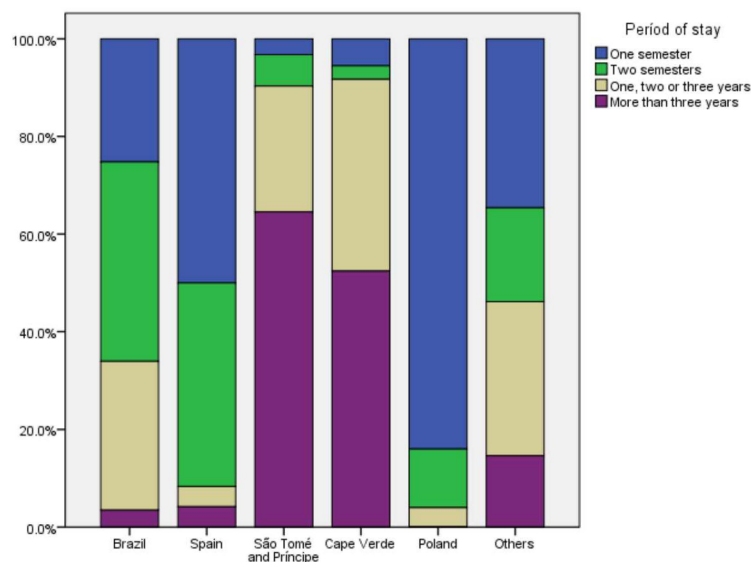


Figure 1. Students' period of stay per country of origin.

Fig. 1 shows that the students that come from the European Union are the ones that want to stay for shorter periods, and remain only one semester, while the ones that come from African countries that speak Portuguese, as their official language (PALOP in Portuguese) remain for longer periods, for more than three years.

### 3.2 Consumer behaviour of the international students

The international students need to live in the region while they are attending IPB and so they need to have some expenses regarding their living conditions, namely they need a place to stay. From the possible solutions to find a place to stay, 45.3% rents a single room, 21.4% chose a double room and there are some (23.3%) that rent a house. From the sample, the students' dorm is chosen only by 8.4%. However, this choice is not "free" as the others since there are limited rooms in the dorm and there are conditions to fulfil to be eligible for a room.

For the period of stay, the IS have to assure all their needs, and this means that they have expenses regarding food, electricity, transportation, and other aspects. Table 1 presents the spending that IS have per month, reunited in six major categories: accommodation, food, personal assets, leisure activities, transport, and other expenses.

Table 1. International students' monthly expenses (in euros).

	<i>Accommodation</i>	<i>Food</i>	<i>Personal Items</i>	<i>Other expenses</i>	<i>Leisure activities</i>	<i>Transports</i>
n	456	457	448	409	442	418
<b>Average</b>	143.2	119.0	71.5	66.1	62.0	37.3
<b>Standard deviation</b>	85.5	97.7	98.5	131.0	110.9	100.7

Table 1 shows that the IS's major expenses per month are with two categories: accommodation and food. The amount spent in these two categories is about 262.2 euros. Estimating the average monthly spending of the IS a total amount of 470.8 euros (median 335.0 euros) is estimated.

Although the majority of the IS have a scholarship, many don't have a scholarship and sometimes the scholarship is insufficient to cover the monthly expenses. As such, it is relevant to understand how these students get their funds to support their stay. The majority (58.7%) are supported by their family or partner, 26.6% have a scholarship (26.6%) and 9.5% are economic self-sufficient.

The spending pattern was also analysed according to the international program, as resumed in Table 2. The international program analysis has been done based on six groups, Erasmus+ (E+), International mobility (IM), Double degree (DD), Prospective students (PS), Other protocols (OP), and No International Programs (NIP). Kruskal-Wallis test has been applied to know the significant difference among the respondents that came from different International Program.

Table 2. International students' monthly expenses per international program. (In euros)

<i>International Program</i>	<i>E+</i>	<i>IM</i>	<i>DD</i>	<i>PS</i>	<i>Other</i>	<i>NIP</i>	<i>K.W. statistics</i>	<i>P-value</i>
n	93	85	50	7	30	195		
Accommodation	145.7	132.9	124.9	183.3	232.1	137.7	10.1	12,20%
Food	189.9	87.6	78.0	173.3	188.3	104.0	93.9	<0,1%
Personal items	115.9	51.6	43.1	116.7	104.8	60.1	54.6	<0,1%
Leisure activities	133.8	32.1	37.5	116.7	65.1	54.7	63.6	<0,1%
Transports	69.4	21.8	13.6	123.3	35.95	39.4	19.9	<0,1%
Other expenses	112.4	44.6	27.3	158.3	77.3	59.4	24.1	<0,1%
Total spending	735.6	354.4	316.5	612.9	601.7	419.6		

In Table 2 it can be observed from the K-W statistics that there is no significant difference in the expenses with the accommodation of the respondents belonging to different International Program. In all the other categories of expenses, there are significant differences, and it is visible that some students spend almost double or triple than others in some categories. In global, the students with the highest monthly expenses are the Erasmus+ students and the ones with the lowest monthly expenses are the double degree protocol students.

With the amounts registered in Table 2, extrapolating to a total of 1,449 IS, an annual average spent was estimated for the academic year of 2016/2017 reaching almost seven million euros. This annual estimate can be detailed by international program, as resumed in Table 3.

Table 3- International students' direct impact, in euros

<i>International Program</i>	<i>Total of students</i>	<i>Length of stay per academic year</i>	<i>Direct impact</i>
NIP	627	12	3 157 070.4
E+	288	7	1 482 969.6
IM	264	10	935 616.0
DD	155	11	539 632.5
PS	22	12	161 805.6
Other	93	12	671 497.2
<b>International Students</b>	<b>1.449</b>	<b>10</b>	<b>6 821 892</b>

Table 3 shows that the students that come under no international program (NIP) spent over 3 million euros, Erasmus+ students (E+) spent 1,4 million euros, the international mobility students (IM) spent 0.9 million euros, double degree students (DD) spent 540 thousand euros, prospective students (PS) spent 162 thousand euros, and the students from all other international protocols (Other) spent 670 thousand euros.

### 3.3 Integration of the international students

The influence of the international students in the hosting regions goes beyond their economic impact, they can establish social networks, acquire local costumes, and share their culture. This is an aspect that reflects how the IS integrate with the academic and local community.

The IS were inquired in relation with their interaction with local community, in terms of attending local public places, such as coffee shops, and in terms of learning local culture when attending theatres and museums. The attendance was measured in terms of frequency in a scale of one to five, where 1-never attended; 2-attended at least once during their stay; 3-attended at least once a month; 4-attended at least once a week; 5-attended every day. Table 4 resumes the frequency the IS attended local places according to their international program.

Table 4. Frequency of local places per international program.

<i>International Program</i>	<i>E+</i>	<i>IM</i>	<i>DD</i>	<i>PS</i>	<i>Other</i>	<i>NIP</i>	<i>K.W. statistics</i>	<i>P-value</i>
Clubs	4.2	3.0	2.9	2.5	2.9	3.0	9.1	10.4%
Coffee shops	3.6	3.0	2.3	3.7	3.2	3.1	18.0	0.3%
Cinemas	1.1	1.1	1.2		1.6	1.2	9.6	8.6%
Museum	1.9	1.9	1.9	1.7	1.8	1.5	14.5	1.2%
Municipal swimming pool	1.6	1.6	1.3	1.3	1.7	1.7	11.9	3.6%
Restaurants	3.0	2.5	3.0	2.5	3.0	2.5	24.6	<0.1%
Shopping	3.2	3.0	3.0	3.3	3.3	3.2	5.9	31.3%
Theatre	1.6	1.7	2.0	1.7	1.6	1.5	15.1	1%

As Table 4 resumes, there are differences in relation to spaces visited by the IS during their stay, specifically when visiting coffee shops, museums, municipal swimming pools, restaurants, and theatres. It is worth noticing that IS rarely attended cinemas, museums, swimming pools and the theatres.

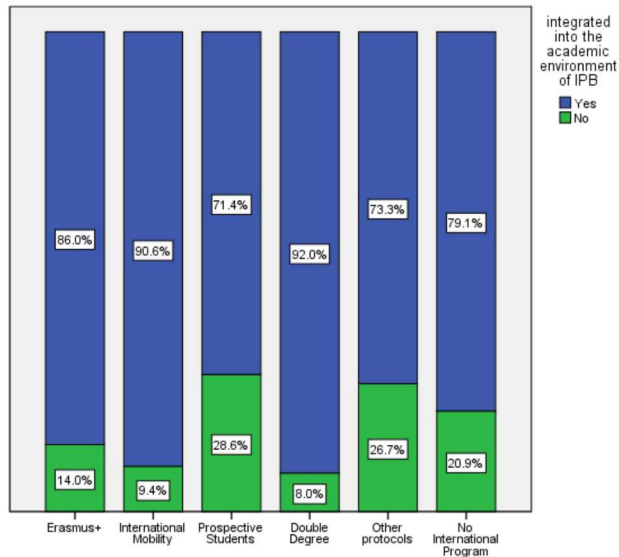


Figure 2. Students' integration per mobility program.

Regarding their integration in the academic environment of the IPB, the vast majority (83.5%) feels integrated. However, when looked according to the mobility program (Fig. 2) there are differences in that integration (the statistic test of qui-square has a value of 11.9 with an associated evidence value of 3.6%, less than 5%). Fig. 2 shows that the IS that have a higher percentage (92%) that feel integrated are the ones from the double degree program and the ones that have a lower percentage (71.4%) feeling integrated are the prospective students. It is relevant, however, that the integration perception is very high in all the IS programs, even the ones that have a lower percentage of integration have at least 70% stating they feel academic integrated.

When requested to evaluate if it was easier or harder to feel integrated in the academic environment of the IPB, the majority feels that it was at least "reasonably easy" (Fig. 3).

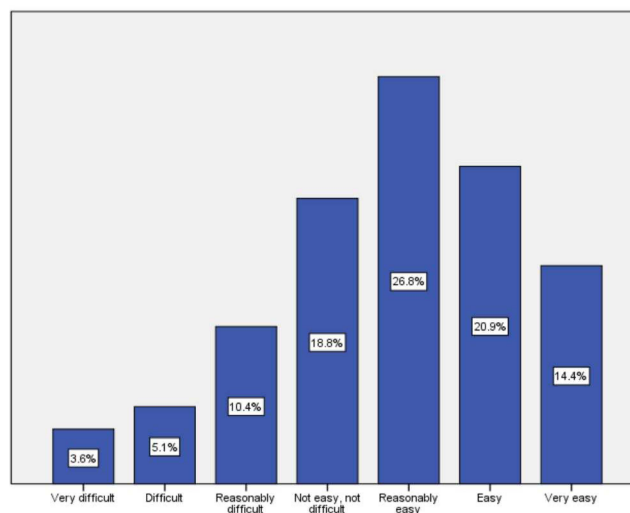


Figure 3. Students' integration.

It was also intended to understand if the IS relate to Portuguese students or if their social network was made with IS only. This is a relevant aspect of the actual academic integration since literature refers that the integration is harder or none, if there are significant differences between the hosting culture and the visiting one, in terms of race, language level, visual aspect among others. Therefore, even though the visiting students wants to interact with the domestic ones they find it difficult and tend to form social connections with colleagues that are of the same race/culture/country [16].

However, it was intended to deeply understand if the social connections with Portuguese students were influenced by their country of origin



Table 5. Frequency of local places per international program.

		Country of origin						Total
		Brazil	Spain	São Tomé and Príncipe	Cape Verde	Poland	Others	
Did you socialize with Portuguese students outside the classroom?	n	119	24	31	145	25	132	476
	Yes	4.2	3.0	2.9	2.5	2.9	3.0	9.1
	No	3.6	3.0	2.3	3.7	3.2	3.1	18.0

It is possible to determine that the country of origin does influence if the IS socialize with Portuguese students outside of the classroom context (the statistic test of qui-square has a value of 12.9 with an associated evidence value of 2.4%). There is evidence that the students from Spain and from Cape Verde have a higher socialization than the rest of the IS. In fact, 68% of the students from these countries state that they have social connection with Portuguese students.

## 4 CONCLUSIONS

This paper describes the influence of the international students that attended the Polytechnic Institute of Bragança, in an economic perspective and in terms of academic integration.

The obtained results allowed us to estimate that international students spent every month of stay an average of 470.8 euros. There were significant differences arising from the data when the IS's protocol was considered. As such, the students that spend more per month, in average, are the Erasmus+ students with 736 euros, followed by Prospective Students with 613 euros, students coming from other protocols with 602 euros, students not included in international programs that spend 420 euros, International Mobility with 354 euros, and the ones that spend the least amount were the Double Degree students with 317 euros. This monthly spending, regardless of the international program, is largely spent in accommodation and food.

With the monthly spending estimated, it was possible to estimate the direct economic impact of the international students that reached 6.8 million euros. This amount is relevant to justify the importance of these students since it represents 40% of the public funding received by the IPB from the state in the year in analysis [17].

It was also possible to determine that there are differences in terms of academic integration of the students, according to their international program. The international mobility program (IM) are the students with a higher percentage (91%) feeling integrated in the academy and the prospective students (PS) are the ones that have a lower percentage (71%) feeling integrated. However, and this is a positive evaluation of the IPB, the integration perception is very high in all the IS programs, with at least 70% stating they feel academic integrated. The IS also state the integration was from "reasonably easy" to "very easy".

With this study we can reinforce the IPB strategy of internationalization since clearly the international students that enrol every year will generate a substantial economic contribution to the regions, through their spending and, in return, the IS can have an international experience with a positive integration and socialization with the Portuguese students.

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