



# International Student Mobility in Psychology: an Analysis of Brazilian Students in Portuguese Higher Education

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## Abstract

Student mobility has been one of the most impactful manifestations of higher education (HE) internationalization. Recently, many studies have looked at this phenomenon, although few have focused on mobility from countries which are not major student exporters and to countries that are not main recruiters. This paper aims to uncover how the increasing internationalization of HE is reflected in the mobility of Brazilian Psychology postgraduate students to Portugal, two countries which share a metropolis-colony past. Two objectives are pursued: first, to carry out a characterization of Psychology postgraduate students from Brazil who study in Portugal; second, to analyze the assignment of scholarships by the Brazilian government. Descriptive analysis and a social network analysis technique were performed to official statistical data available in both countries. Social Sciences, Business and Law is the most sought-after area by Brazilian students in mobility, and within this area, Psychology students are third in absolute numbers. The majority of Psychology students were in degree mobility, being almost ten times more than those in credit mobility, and a constant preference for public institutions was observed. The Portuguese institutions most sought-after are the University of Porto, the University of Coimbra and the University of Lisbon. Institutions located in Brazil's South and southeast regions stand out with the number of mobility grants. This work contributes to shed light on realities of international mobility beyond the major recruiting and/or sending countries. Its novelty also resides in the contribution to knowledge about mobility between spaces where a colonial logic leads students' flows.

**Keywords** Internationalization · Social network analysis · Foreign students · CAPES

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The majority of international students in Portugal are from Portuguese-speaking African countries and Brazil. The most recent data from the General Directorate of Education and Science Statistics (DGEEC), referring to the 2020/21 academic year, show that more than 70% of international students in Portugal come from Portuguese-speaking countries (namely Brazil, Angola, Cape Verde, São Tomé and Príncipe, Mozambique and Guinea-Bissau). According to Börjesson (2017), there are three poles in the global space of higher education: Pacific, Central European, and Franco-Iberian. Portugal falls into the latter, which also encompasses two other destination countries (France and Spain), and two regions of origin—Africa and Latin America and the Caribbean. He argues that a colonial logic could explain the flows of students within this pole, since destination countries receive a considerable number of students from their former colonies (Börjesson, 2017).

In fact, Portugal has historically received students from Lusophone space and is a major destination for these countries, due to strong historical and linguistic ties (Aguiar & Sin, 2021). According to data from the last quadrennial evaluation report released by the Coordination for the Improvement of Higher Education Staff (CAPES), Portugal is the third most frequent destination for CAPES Psychology postgraduate fellows of international mobility, only behind France and the USA (CAPES, 2017).

Although Portugal represents an important country to be considered by students from Lusophone countries to study abroad, and especially for those coming from Brazil, there are still few studies that have analyzed this issue. On the one hand, Portugal is not an important player in international recruitment, being considered a semi-peripheral country when compared to others, such as the UK, Australia, Germany, and the USA (Sin et al., 2021a, b). On the other hand, the few studies on Brazilian students in international mobility have focused on attitudes and expectations of studying abroad, academic success, or social adaptation (Foster, 2013; França et al., 2018; Reis et al., 2021).

Considering the shared historical background of Brazil and Portugal and the prominence of Portugal as a destination study country for Brazilian Psychology postgraduate students, the current study aims to analyze in depth international student mobility taking these two countries as a case study. Our data were gathered from national statistical data on student enrollment, mobility, and resources (from both sender and receiver countries). The findings may be relevant for other similar instances in which former colonial relations influence student mobility.

This study can contribute to the literature on international student mobility in a numbers of ways: (1) it will expand the literature on the internationalization of higher education beyond a focus on main study destinations (English speaking countries and Northern Europe) or main sender countries (primarily Asian countries); (2) it will provide more data on graduate student mobility, beyond the focus on scientific and professional mobility; (3) it may be instructive for other instances in which mobility is between colonize and colonized countries; and (4) it will provide specific information about mobility within the Brazilian Psychology education system.

## International Student Mobility

Recently, internationalization of higher education has changed from a practice to a multidisciplinary research area that has contributed to both political governance and higher education policy (Ledger & Kawalilak, 2020). According to Knight (2008, p.1), internationalization “is changing the world of higher education, and globalisation is changing the world of internationalisation,” as a reference to the complexity and rapid changes in the higher education sector, and all the challenges and opportunities presented by this scenario. She states that internationalization “at the national, sectoral, and institutional levels is defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of postsecondary education” (2015, p. 2), offering a broad definition that encompasses cultural and contextual differences. Some of the main objectives of internationalization in higher education, as far as students are concerned, are to increase employability in the international labor market; to highlight a future-oriented positioning, and to develop specific skills and knowledge needed to function in an international context, such as language skills, knowledge about other cultures, and to promote diversity (Knight & de Wit, 1995). Within the very broad definition of internationalization in higher education, student mobility is probably the most prominent and well-researched dimension.

The process of internationalization has been increasingly central to HEIs, and is even a quality indicator adopted by the most diverse classification systems. Although, as mentioned above, internationalization is not limited to student mobility, this has been one of its most visible and impactful manifestations. According to the International Organization for Migration, in 2017 there were over 5.3 million international students, while in 2000 there were just over 2 million. It is important to establish here the definition of an international student. According to UNESCO, an international student of higher education is a person who, in order to participate in learning processes in tertiary education, crosses the physical borders between a country of origin and a country of destination (UNESCO Institute for Statistics, 2021).

The decision to study in a foreign country is a complex process and the motivations underlying this process are very diverse, acting differently from student to student. On the one hand, push factors drive the student’s initial decision to leave their home country and move abroad. These may include, for example, poor career prospects in the home country; adverse socioeconomic context; low quality of local educational opportunities; exclusion from desired educational opportunities in the home country; and favorable policies encouraging mobility (Ahmad & Buchanan, 2017; Kolster, 2014; Mazarol & Soutar, 2002; Sin et al., 2021a, b). On the other hand, at the destination country level, pull factors operate to make a country more attractive than others. Again, the motivations related to pull factors are very diverse, and can include existing favorable cultural, economic, and educational aspects; quality and reputation of the educational system; and mutual degree recognition agreements between the two countries (Ahmad & Buchanan,

2017; Kolster, 2014; Mazzarol & Soutar, 2002). As the decision to study abroad is a very particular process from student to student, in some cases, the choice of the HEI may come before the choice of the country; in other cases, however, the decision for the country comes first and then the process of choosing the HEI begins, which may include some aspects such as the prestige and reputation of the institution; recommendations from friends and family; presence in the HEI of a community of students and former students from the same country (Sin et al., 2021a, b).

According to UNESCO Institute for Statistics, Portugal is one of the top international mobility destinations for Brazilian higher education students, preceded only by Argentina and the USA (UNESCO Institute for Statistics, 2021). Regarding Brazilian students' motivations for coming to Portugal, language seems to be the main factor, as mentioned by 71% of the sample listed (Iorio, 2021). In addition, more than half (57%) had no funding (for instance, scholarships), and perceived Portugal as relatively low in cost of living and tuition fees (Iorio, 2021).

### Higher Education and Internationalization in Brazil

Brazilian higher education can be private or public, with funding provided at either the national or state level. At the federal level, the promotion of international student mobility has been mainly supported by the Ministry of Education and the Ministry of Science, Technology and Innovation through their respective agencies, CAPES and the National Council for Scientific and Technological Development (CNPq), both founded in the 1950s. Until 1964, students seeking master's or doctorate degrees had to go overseas to study, as there were few postgraduate courses in Brazil. It was only after a piece of legislation by the Federal Education Council in 1965 that postgraduate courses began to rapidly increase within Brazil (Cruz & Eichler, 2021).

Brazil is a country marked by inequalities which cut across all sectors, including higher education. According to data from the most recent education census (INEP/MEC, 2020), the average student in Brazilian higher education institutions is white, female, and between the ages of 19 and 24. In fact, 57% of students enrolled in higher education institutions are women and represent almost 80% in Psychology. Considering the socioeconomic level of the students, the higher the social class, the better the conditions of access: 61.9% of the 18 to 24 year olds who belong to the higher classes (with a family income greater than eight minimum wages) attend higher education, while only 10.5% of the young people from class E (with family income of up to half a minimum wage) manage to access a degree. It is worth noting that for the 18- to 24-year-old age group, class E represents 44.9% of the population (INEP/MEC, 2020).

In 2019, about 87.6% of HEIs in Brazil belonged to the private sector. For Psychology courses, there were 566 institutions offering undergraduate programs in 2019, of which less than 13% belonged to the public sector (INEP/MEC, 2020). While private HEIs are the majority in numbers at undergraduate level (both students and HEIs), public institutions concentrate most of the students at postgraduate

level, including in the case of Psychology. In fact, of the 9182 Psychology postgraduate students (5814 in master's and 3368 in doctoral programs) enrolled in 2019, over 75% belonged to the public sector (CAPES, 2022).

Psychology degrees, even at undergraduate level, at public universities are highly competitive, with high entrance grades and high student demand, since they have better ratings in the rankings and enjoy better prestige (Lisboa & Barbosa, 2009). Therefore, studying abroad could be an opportunity for those who have not been able to access a graduate course in Brazil and, importantly, have the possibilities to do so.

Analyzing the period from 2010 to 2018, there has been a decline, in recent years, of diversity in Brazilian higher education, making it even more elitist. One of the reasons that can explain this segregation is, in the case of public education, the decrease of racial quotas in universities, while in private education the extinction of funding programs, as was the case of Fies [Student Financing Program]. In 2012, 14.1% of the students entering higher education used their own resources to finance their courses, while in 2018 this percentage has increased to 34.8% (INEP/MEC, 2020). In contrast, federal government funding via Fies, which in 2014 funded higher education for 21.3% of students belonging to disadvantaged classes who were enrolled in private universities, was reduced to about 2.5% in 2018.

Funding schemes have also acted as pull factors for Brazilians to study abroad. The internationalization of higher education has been strongly linked to the state—in defining policies, governor and funder—and to public universities and their postgraduate departments, especially their research institutes. Therefore, the internationalization of higher education has been dependent on continuities between governments, resource allocation, and the political motivations of each period (Cruz & Eichler, 2021). According to CAPES, the number of scholarships abroad offered for postgraduate studies in Psychology increased from 2010 to 2013, in all modalities analyzed (Senior Internship, Post-Doc, PhD and Sandwich Doctorate) (CAPES, 2017). Recently, however, international mobility and investments in research and science, in general, have suffered drastic budget reductions at both CAPES and CNPq. In 2021, CNPq awarded only 73 international mobility grants, out of a set of 2100 applications. This represents a 60% decrease from the last open call by CNPq in 2019, when 185 researchers benefited from the grant. The reduction is even more remarkable when compared to 2010, when 431 students were awarded scholarships, representing a drop of 83% (<https://www.gov.br/cnpq/pt-br>).

This sharp decrease in the number of international mobility grants can be explained, in part, due to the closure of the Science Without Borders program in 2017, a Brazilian student mobility program which had its own budget. In contrast, for the current call, CNPq had a reduced budget to contemplate not only international mobility grants, but also the other research programs in Brazil.

## International Students in Portugal

Of all international students enrolled in Portuguese degree programs, Brazilian students accounted for 27.6% in the 2011/12 academic year, increasing to

36.98% in 2020/21 (DGEEC, 2022). Since 2008, Brazilian higher education students have become the most significant foreign student community in the country, and their numbers have increased considerably in recent years.

This flow goes back to colonial times, when students from the former colonies came to study at universities in the metropolis (França et al., 2018). During the colonial era, Portugal failed to establish HEIs in its former colonies, unlike other European colonial powers, such as the UK and France (Ploner and Nada, 2020). In Brazil, for a long time after becoming independent, the only option for those who wanted a higher education degree was to study abroad, and only the aristocrats, who were of Portuguese descent, could afford it. The University of Coimbra—the oldest and most traditional Portuguese HEI—was the major recipient for Brazilian international students (Iorio, 2021).

After the Portuguese revolution in 1974 and the independence of all colonies (Brazil became independent earlier, in 1822), Portugal made efforts to maintain cooperation with Lusophone countries. The Community of Portuguese-Speaking Countries was founded in 1996 to strengthen historical, cultural, and economic ties among these countries. One measure in this regard was, for example, subsidies offered by the Portuguese government to students from Lusophone countries, negotiating quotas with public institutions and including these students in the funding formula (Veiga et al., 2006). However, in 2014, this situation changed with the implementation of legislation called the Statute of the International Student (Decree-Law 36/2014), which also fostered, in addition to Lusophone students, an investment in attracting new publics.

In fact, 2014 was a turning point in Portugal for the active recruitment of international students. Although, since 2006, the Bologna process had made internationalization more visible in the country, it was only years later that it became a political priority in Portugal. This was marked by the launching of a national strategy for the internationalization of higher education, elaborated by the Ministries of Regional Development and of Education and Science (MADR/MEC, 2014).

Two main factors have acted as catalysts for Portuguese HEIs to intensify their recruitment of international students (Sin et al., 2021a, b). First, very low birth rates for a long time led to a declining demographic trend, resulting in a decreasing number of domestic applicants. This trend is expected to become more severe over the next decade. Secondly, the financial crisis of 2009 severely affected the country in the following years. In particular, private institutions experienced a decrease in student numbers, and public institutions were affected by cuts in state funding. It was in this context that the internationalization strategy for Portuguese higher education and the International Student Statute emerged in 2014 (Sin et al., 2021a, b).

To strengthen the scientific exchange between Portugal and Brazil, the Portuguese Foundation for Science and Technology and CAPES signed an agreement in 2010 with the objective of promoting joint research projects involving HEIs in both countries, to foster mobility and also advanced training for human resources.

## The Current Study

Based on the above, the present study was guided by the following question: how is the increasing internationalization of higher education reflected in the mobility of Brazilian Psychology postgraduate students to Portugal? In order to answer this question, we characterize Brazilian Psychology postgraduate students who study in Portuguese higher education institutions, and we analyze the assignment of scholarships by the Brazilian government in the area of Psychology.

## Method

We conducted two types of analysis to more deeply understand the mobility of Psychology postgraduate students from Brazil to Portugal. The first analyzed data from the General Directorate for Education and Science Statistics (DGEEC), and aimed to characterize the Brazilian students enrolled in Portuguese higher education, considering a series of variables such as sex, the education sector to which the HEI belongs—public sector or private sector, the type of mobility, and the level of qualification. We characterized mobility as degree mobility (in which the student receives the whole degree in Portugal, being awarded a diploma from a Portuguese institution) or credit mobility (in which the student is regularly enrolled in their country of origin, but studies temporarily in Portugal and receives credits that will be used for the course in the HEI of origin, which also issues the diploma awarded at the end of the course). For the level of qualification, postgraduate education in Portugal is divided into (a) master's degree/ 2<sup>nd</sup> cycle, (b) integrated master's degree, in which the bachelor's degree is integrated in the master's degree, and (c) doctorate/ 3<sup>rd</sup> cycle.

Descriptive analyses were carried out on the DGEEC database, which contains information on all study programs in Portuguese HEIs from 2011/12 to 2019/20. In the contextualization analysis, we considered all students from Brazil who were enrolled in higher education in Portugal, and frequency analysis was carried out regarding students' disciplinary areas and their specific courses. In the characterization analyses, in turn, the specific population of Psychology students was evaluated regarding the set of variables described above, in order to characterize this population over time. Descriptive analyses were performed, identifying the number of students per academic year, according to different characteristics. In addition, the percentage of the variation for each academic year was also calculated, through the difference between the number of enrolments registered in a year  $N$  and  $N + 1$ .

The second part of the study aimed to understand the mobility flows of Psychology students with funding, from Brazil to Portugal by analyzing data regarding the scholarships offered by CAPES, in the period from 2010 to 2019. A publicly access database has information regarding the level of qualification, the program for the type of scholarship offered, destination HEI and origin HEI (CAPES defines origin HEI for students in full PhD programs as the Brazilian institution that conferred the most recent degree, that is, the university where the student obtained his/her

master's degree). To visualize the mobility flows of students, the social network analysis technique was employed.

Social network analysis is an interdisciplinary data analysis approach that combines graph theory and network theory to understand complex interaction systems, such as social structures (Wasserman & Faust, 1994). Because this analytical method provides conceptual and methodological tools to analyze in depth the relational structure between interacting systems, it has recently been used to study international student mobility (Barnett et al., 2016; Börjesson, 2017; Kondakci et al., 2018).

Social network graphs consist of a finite set of vertices or nodes and their connections, called links or edges. The nodes represent the actors within the social structure, such as an entity, a person, a country, and theoretical constructs. In turn, edges represent the relationship between actors, such as reciprocity, interactivity, and sharing or exchange of various items (Haythornthwaite, 1996; Oliveira & Gama, 2012). These items can be tangible (e.g., goods, services, or money) or intangible (e.g., information, social support, or influence). The edges can be weighted or unweighted, depending on the type of relationship that exists in the network. Typically, weighted graphs are more complex and elucidative, as they provide more information about the strength of the relationship between nodes (Haythornthwaite, 1996). In this study, the HEIs of origin are represented through circles, whose size is directly proportional to the number of mobile students at the HEI of destination. The edges represent the links between HEIs, and the thickness of the lines is directly associated with the number of students, thus representing the strength of the relationships between the institutions they connect and the position they occupy within the network.

## Results

The results of the contextualization analysis of Brazilian students in Portugal are presented. Table 1 shows the number (per academic year) of Brazilian students in mobility in Portugal, in the three most popular disciplinary areas (according to the National Classification of Education and Training Areas). Social Sciences, Business and Law, to which Psychology belongs, is the most sought-after area by Brazilian students who are in mobility in Portugal.

Table 2 shows the evolution, over time, of the number of Brazilian students in the three most popular courses in Social Sciences, Business and Law area.

As the results presented in Table 2 show, Psychology is the third most chosen course by Brazilian students, within the Social Sciences, Business and Law disciplinary area. This ratio is slightly different from that in Brazilian HEIs, where Psychology is the fifth most chosen in Human Sciences, considering the number of enrollments (INEP/MEC, 2020).

The demand for postgraduate courses in Portugal in this area, including in Psychology course, has been growing in recent years. This trend can be observed more markedly from the year 2015/2016, both for the area and for the course.



**Table 1** Evolution of Brazilian postgraduate students in Portuguese higher education by disciplinary area

	Arts and Humanities	Social Sciences, Business and Law	Engineering, Manufacturing and Construction
2011/2012	480	1425	590
2012/2013	577	1414	1017
2013/2014	652	1762	589
2014/2015	727	1929	767
2015/2016	876	2334	894
2016/2017	1077	2945	1347
2017/2018	1414	4004	2035
2018/2019	1766	5218	2975
2019/2020	1994	5401	3264
Total	9563	26,432	13,478

**Table 2** Evolution of Brazilian postgraduate students in the top three courses in Social Sciences, Business and Law

	Law	Management and Administration	Psychology
2011/2012	528	199	174
2012/ 2013	483	234	137
2013/2014	710	220	164
2014/2015	754	289	172
2015/2016	929	358	193
2016/2017	928	551	247
2017/2018	1177	713	365
2018/2019	1495	1032	488
2019/ 2020	1472	958	590
Total	8476	4554	2530

Next, the results of the characterization analyses, which considered only Psychology students, are presented. Table 3 shows the results regarding the distribution between male and female students over the time series.

In general, for both men and women, there is an upward trend in the demand for international mobility in Portugal over the years. It should also be noted that, historically, there are more women than men, which reflects the profile of Brazilian Psychology students, which is mostly female, according to data from the latest education census (INEP/MEC, 2020).

Next, Table 4 shows the results regarding the type of mobility of the students.

The results show that there is a significantly higher number of students in degree mobility than students in credit mobility (almost ten times more, considering the total number). There is also an even more pronounced upward trend in recent years.

Concerning the HEI sector, Table 5 shows the distribution of students between the public and private sectors across time series.

**Table 3** Distribution between male and female psychology postgraduate students from Brazil in mobility in Portugal

	Male (% of variation)	Female (% of variation)	Total
2011/2012	27	147	174
2012/2013	21 (−22.22%)	116 (−21.08%)	137
2013/2014	24 (+14.28%)	140 (+20.68%)	164
2014/2015	31 (+29.16%)	141 (+0.71%)	172
2015/2016	43 (+38.70%)	150 (+6.38%)	193
2016/2017	40 (−6.97%)	207 (+38%)	247
2017/2018	71 (+77.5%)	294 (+42.02%)	365
2018/2019	77 (+8.45%)	411 (+39.79%)	488
2019/2020	109 (+41.55%)	481 (+17.03%)	590
Total	443	2087	2530

**Table 4** Evolution of the Psychology postgraduate students from Brazil by type of mobility

	Degree mobility (% of variation)	Credit mobility (% of variation)	Total
2011/2012	149	25	174
2012/2013	122 (−18.12%)	15 (−40%)	137
2013/2014	155 (+27.04%)	9 (−40%)	164
2014/2015	152 (−1.93%)	20 (+122.22%)	172
2015/2016	171 (+12.5%)	22 (+10%)	193
2016/2017	208 (+21.63%)	39 (+77.27%)	247
2017/2018	317 (+52.40%)	48 (+23.07%)	365
2018/2019	418 (+31.86%)	70 (+45.83%)	488
2019/2020	547 (+30.86%)	43 (−38.57%)	590
Total	2239	291	2530

**Table 5** Psychology postgraduate students from Brazil by HEI sector

	Private (% of variation)	Public (% of variation)	Total
2011/2012	58	116	174
2012/2013	49 (−15.51%)	88 (−24.13%)	137
2013/2014	74 (+51.02%)	90 (+2.27%)	164
2014/2015	47 (−36.48%)	125 (+38.88%)	172
2015/2016	47 (0%)	146 (+16.8%)	193
2016/2017	59 (+25.53%)	188 (+28.76%)	247
2017/2018	95 (+61.01%)	270 (+43.61%)	365
2018/2019	120 (+26.31%)	368 (+36.29%)	488
2019/2020	173 (+44.16%)	417 (+13.31%)	590
Total	722	1808	2530

Brazilian Psychology students show a constant preference for public institutions and recently the growth in the public sector has been more pronounced. This could be due to the fact that postgraduate education is offered in a higher degree by public institutions and the scholarships allocated by the Brazilian authorities are offered for students who attend public HEIs.

Table 6 shows the results regarding the level of qualification in which students are enrolled. Since these data refer only to the regular enrollments of the respective academic year, they contain information only regarding degree mobility, as students in credit mobility usually enroll for only one semester or less.

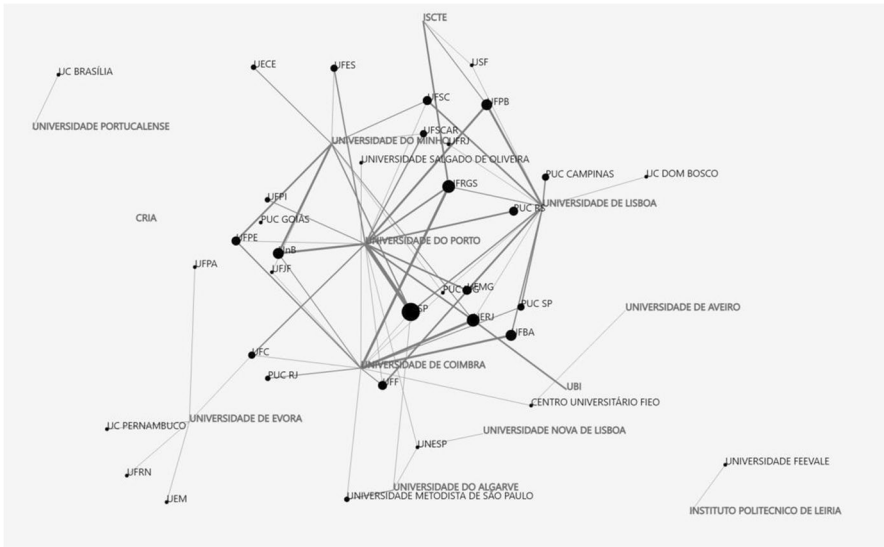
Most students (76%) were enrolled in master's courses, in which a higher number were in the master/2nd cycle than in integrated master's courses. In recent years, there has been an upward trend in enrollments, in both types of master's degrees.

The second part of the analysis aimed to map the mobility flows between the sending HEIs, in Brazil, and the receiving HEIs, in Portugal. Social network analysis allows visualizing both the content and the pattern of relationships, since the position of nodes reflects whether a node is central or peripheral, or whether it is closely or loosely connected to others (Haythornthwaite, 1996). Thus, the combination of the position of nodes and the strength of edges gives a deep understanding of the network.

Figure 1 shows the network graph. Thirty-five Brazilian HEIs were identified as institutions of origin. Among them, 17 were federal HEIs and four were state HEIs. The remaining belong to the private or cooperative sector. In relation to the host institutions, there were 13 different Portuguese HEIs, of which only two belonged to the private sector.

**Table 6** Psychology postgraduate students from Brazil by degree level (only degree mobility)

	Master (% of variation)	Integrated master (% of variation)	PhD (% of variation)	Total
2011/2012	69	43	37	149
2012/2013	47 (− 31.88%)	34 (− 20.93%)	41 (+ 10.81%)	122
2013/2014	70 (+ 48.93%)	35 (+ 2.94%)	50 (+ 21.95%)	155
2014/2015	44 (− 37.14%)	38 (+ 8.57%)	70 (+ 40%)	152
2015/2016	57 (+ 29.54%)	44 (+ 15.78%)	70 (0)	171
2016/2017	85 (+ 49.12%)	61 (+ 38.63%)	62 (− 11.42%)	208
2017/2018	136 (+ 60%)	117 (+ 91.80%)	64 (+ 3.22%)	317
2018/2019	184 (+ 35.29%)	160 (+ 36.75%)	74 (+ 15.62%)	418
2019/2020	259 (+ 40.76%)	219 (+ 36.87%)	69 (− 6.75%)	547
Total	951	751	558	2239



**Fig. 1** Network graph for mobility from Brazil to Portugal by HEI

In total, the network was composed of 48 nodes and 93 edges. In the central part of the graph, the University of Porto [Universidade do Porto] is the most prominent node in the network as the main Portuguese HEI, both in the number of incoming Psychology students and the number of edges with the different Brazilian HEIs. In relation to the number of outgoing students, the University of São Paulo [Universidade de São Paulo—USP] stands out, as can be seen in the graph through the thickness of the edges and the central position in the network, closest to the main nodes. Also noteworthy is the Federal University of Rio Grande do Sul [Universidade Federal do Rio Grande do Sul—UFRGS], which, although it has neither the largest number of mobile students nor the largest number of edges (in this case, it is the State University of Rio de Janeiro—UERJ), is connected to the main HEIs of destination, namely University of Porto, University of Coimbra, and University of Lisbon.

It is worth mentioning some relationships that, although not expressive in terms of the number of students in mobility, indicate a closer collaboration between both sending and receiving institutions. This is the case, for example, of the relationships between the University of Algarve and the Methodist University of São Paulo [Universidade Metodista de São Paulo]; the Portucalense University and the Catholic University of Brasília [UC Brasília]; and the FEEV-ALE University and the Polytechnic Institute of Leiria [Instituto Politécnico de Leiria]. This conclusion can be apprehended from the network by analyzing both the position of the nodes and the number of edges.

## Discussion

This article aimed to contextualize and characterize Brazilian Psychology students in Portugal, as well to better understand the mobility flows of the scholarship holders. Within the upward trend in the demand for international mobility into Portugal (for all subject areas), the results of the contextualization analysis showed that the area Social Sciences, Business and Law is the most popular by Brazilian students going to Portugal. In this area, Psychology students are third in absolute numbers.

The results of the characterization of Brazilian Psychology students in Portugal revealed that, historically, there has been a greater number of female students. This result is consistent with Brazilian demographic data, indicating that women are the ones who most seek training in Psychology in Brazil. According to data from Brazil's Federal Council of Psychology website (<http://www2.cfp.org.br/infografico/quantos-somos/>), women represent over 85% of psychologists in Brazil, a number close to that found in the results of this study.

The study also analyzed the type of institution in which Brazilian Psychology students enroll, revealing a preference for public institutions. This is in line with previous studies that analyzed not only Psychology students but all international students enrolled in Portuguese institutions, which concluded that Brazilian students belong to a profile where they attend mainly public universities located on the coast and are in advanced programs such as masters and doctorates (Sá et al., 2021; Sin et al., 2021a, b).

Despite the preponderance of students in public institutions, there may be a trend for increasing private institution enrolments. In fact, private institutions enroll proportionally more international students, given their declining national public (Aguiar & Sin, 2020). This may reflect more intense efforts to compensate for the fall of national students by filling up places with international students. Our results are in line with a study conducted with the entire population of international students in Portugal, considering the period from 2011 to 2019. According to the authors, there was a growth from 7.40 to 17.10% of international students in private university institutions, while in private polytechnics the growth was equally remarkable, from 4.85 to 13.36% (Sá et al., 2021).

We also found that the primary type of mobility was degree mobility. This is surprising because credit mobility was given priority by funders. According to the CAPES (2017), over the years, there has been a prioritization by the Brazilian government of credit mobility, made possible through the so-called “sandwich scholarships.” These are scholarships aimed at students who are regularly enrolled in Brazilian HEIs, in order to allow them to study abroad for a period that can vary from 3 to 12 months. The international mobility must always take place in the middle of the program, that is, both the initial phase (which includes the validation of the research project) and the final phase (which includes the evaluation) must take place in the HEI of origin. However, according to our results, a higher number of degree rather than credit mobility was verified. One possible explanation for this result is shared language between Brazil and Portugal. This may

lead Brazilian students to opt for longer courses in Portugal, where they are more comfortable with the official language (Iorio, 2021). On the other hand, CAPES encourages mobility also as an opportunity to develop foreign language skills. An example of this was the exclusion of Portugal, in 2013, from the countries contemplated by the Science without Borders program, for not stimulating the learning of a foreign language. In fact, one of the positive outcomes of international mobility is improved foreign language skills, which can also increase the employability of younger researchers (Netz et al., 2020). This aspect could be undermined when students go abroad to a country with the same mother tongue. However, this does not appear to have deterred Brazilian students from seeking Portugal, as their increasing number suggests.

In addition, the fact that there is a large community of Brazilian immigrants in Portugal may attract more students to degree mobility, since having a network of friends and family who live in the receiving country can be very important in determining where to study (Aguiar & Sin, 2021; Ploner and Nada, 2020).

The present study also characterized the Brazilian Psychology students regarding the qualification level. The integrated master is the less popular among postgraduate degrees, most likely because there is no equivalent degree in Brazil and students may have doubts about its recognition in their home country. Besides, the mobility scholarships offered by Brazilian agencies are for graduate courses, and since the integrated master's degree represents a combination of an undergraduate and a postgraduate degree, it is not contemplated with scholarships. Thus, many students choose the master degree/2<sup>nd</sup> cycle instead. Although the number of PhD students is lower, this is the qualification level with most Brazilian students proportionally.

Regarding the second objective of this study, two main points deserve attention and both are interconnected with inequalities. First, among the more than 80 HEIs offering Psychology postgraduate programs in Brazil (CAPES, 2017), the social network graph revealed that only 35 institutions have received CAPES mobility grants in the last 10 years. Second, the HEIs in the south and southeast regions of Brazil were more likely to receive funding than those in the north and northeast. A possible explanation for the favored position of the HEIs belonging in these regions is that they host the largest number of postgraduate programs. According to the last quadrennial evaluation of CAPES, almost half (46.5%) of the postgraduate programs in Psychology in Brazil are concentrated in the southeast region (CAPES, 2017). Moreover, of the 40 existing programs in this region, 20 are in the state of São Paulo. If we consider only the doctoral programs, the state of São Paulo concentrates 32%.

In terms of socioeconomic conditions, the south and southeast regions of Brazil stand out as those that historically have better income rates, educational level, and are more industrialized (PNAD, 2019). In contrast, the north and northeast regions are those with the greatest precariousness and vulnerability, contrasting inequalities with the other two regions mentioned above. In fact, Brazil is the ninth most unequal country, according to the United Nations Development Programme (UNDP, 2019). Thus, a greater allocation of scholarships to regions where, in principle, students' families have better socioeconomic conditions, could be further accentuating the differences and inequalities between these regions. However, it is understandable that, being the regions that concentrate the largest number of graduate programs, they

have greater resources to finance international mobility. For future studies, it could be important to analyze whether the concentration of scholarship allocation in the south and southeast regions is contributing to a decrease or reproducing the cycle of inequality in educational opportunities.

Finally, concerning the Portuguese HEIs most sought-after by Brazilian Psychology students, in descending order, the University of Porto, the University of Coimbra, and the University of Lisbon stand out. These institutions are among the largest and most prestigious ones in Portugal, located in major Portuguese urban areas, factors which may explain their attractiveness. As already reported in previous studies (Börjesson, 2017; Ploner and Nada, 2020; Sá et al., 2021), students coming from Lusophone countries are the predominant public in these HEIs, especially students from Brazil. In fact, the massive presence of these students, attracted by cultural and linguistic proximity and, considering Portugal's colonial past, corroborates the colonial logic that drives student flows from these countries (Börjesson, 2017). Additionally, these institutions host large communities of Brazilian students, which becomes an additional attraction factor, both from a formal point of view—having protocols and agreements between HEIs for exchanges—and informally—through the word of mouth of the students (Fonseca et al., 2016; Reis et al., 2021).

This study provides an important overview of Brazilian Psychology postgraduate students in Portugal, as well as of the funding, in terms of grants, offered to them. The knowledge we have obtained points to some shortcomings regarding mobility and also allows identifying possible ways forward on how mobility can be rethought. The colonial legacy that marks Brazilian higher education is also present in the phenomenon of student mobility, with Portugal as a main study abroad destination. The same is the case with France and Spain which are major recruiters of students from Africa and Latin America, respectively, where the asymmetrical power relationship between the metropolis and the former colonies drives student flows (Börjesson, 2017). While for the main players in international recruitment the nationality of students is less relevant than their qualifications and their economic conditions to pay the tuition fees, in the Portuguese case—as in the French and Spanish—there is an interest in attracting students from their former colonies (Börjesson, 2017). França et al. (2018) argue that Portugal's policies respond to different demands and interests embedded in its geopolitical context, reflecting a desire to continue its influence over the former colonies.

Some practical implications and recommendations can be derived from this study. First, it is important to alert policy-makers to the marked presence of scholarship holders coming from institutions in Brazil's most developed regions. This may indicate that it is the most privileged students that engage in mobility and, therefore, the scholarship assignment system may perpetuate inequalities present in Brazil's society, that would be replicated in the HE system. It may be necessary to rethink the criteria for the distribution of scholarships to make this process more equitable. Second, it has been noted that credit mobility is not very popular compared to degree mobility. A recommendation in this respect could be that policy-makers increase opportunities for students to undertake shorter periods of funded mobility abroad during their studies. Credit mobility may also be more affordable and, therefore, more accessible for students from lower

socioeconomic backgrounds. Diversifying and promoting different mobility types may promote equity, by allowing less advantaged students to also benefit from an international experience.

Third, despite the fact that CAPES scholarships are only awarded to students who intend to study in public institutions, the past years have seen growing numbers of Brazilian students in private higher education institutions in Portugal. This growing demand may represent a window of opportunity for Brazilian institutions and Portuguese private institutions to invest in partnerships and collaborations. This is still a little exploited potential in Portugal which may widen the pool of potential sending and receiving institutions.

The current study has some limitations. As one of them, we highlight the classification of the data by DGEEC, which considers the country of nationality to distinguish the data of national students from foreign students. However, when considering nationality, there may be a bias of the so-called pseudo-mobility, that is, Brazilians who are in Portuguese higher education not because of the mobility phenomenon, but because of migration. In fact, in recent years, the number of new residence requests from Brazilians has grown quite dramatically in Portugal. In the first quarter of 2021, even with the Brazilian consular services only partially functioning due to the pandemic, 3.7 thousand new residence requests made by Brazilians were presented, representing 52% of all the requests received by the country in that period. In 2020, of the 117.5 thousand new residence permit requests issued, 35.74% were for Brazilian citizens (SEF, 2021).

Another limitation is the scarce information and data available regarding Brazilian students in international mobility. For example, at the time of writing, there were no data available on the portal of CNPq, the second federal agency in funding graduate fellowships. In addition, the data are scattered across several sources, with different classifications as well, which often did not allow a direct comparison or further analysis.

In conclusion, despite its limitations, this study provides relevant information, filling a gap in the literature regarding characteristics and choices made by Brazilian Psychology graduate students in Portugal, since these countries are not recognized either as main destinations or countries of origin of international students. Future research should focus on a qualitative approach analyzing Brazilian Psychology students' perspective in order to understand their motivations in pursuing graduate studies abroad, as well as the strategies of Brazilian HEIs for internationalization.

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**Data Availability** The datasets analyzed during the current study are available in [www.gov.br/capes](http://www.gov.br/capes) and <https://www.dgeec.mec.pt/np4/home/>

**Materials Availability** Not applicable.



**Code Availability** Not applicable.

## Declarations

**Ethics Approval** Not applicable.

**Consent to Participate** All authors consented to participate in the study.

**Consent for Publication** All authors consented to the publication of the study.

**Additional declarations for articles that report the results of studies involving humans and/or animals** Not applicable.

**Conflict of Interest** The authors declare no competing interests.

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