


Pre-pandemic analysis of the university higher education system in Brazil: Quantitative and qualitative overview – 2019

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ABSTRACT

The study analyzes the trends and challenges of Brazil's higher education system up to 2019, highlighting the need to understand the pre-existing infrastructure and dynamics before the Covid-19 pandemic. The most relevant findings are: First, the dominance of private institutions stands out, which lead in terms of enrollment and academic offerings, although the distribution of professors is more balanced between public and private. This dominance reflects the dynamics of the education market and raises questions about access to and quality of education. Second, the historical evolution of higher education in Brazil shows a growth and valorization since the nineteenth century, emphasizing the role of education as a pillar of socioeconomic development. The educational expansion of the 20th century has been remarkable, marking an increase in diversification and in the capacity to meet the country's demands. The comparative analysis between public and private universities reveals significant differences in enrolment and academic offerings, highlighting regional and demographic variations in educational availability. In addition, it examines the transition to online education, a crucial aspect in the face of the growing interest in flexible and accessible educational modalities. Finally, the study highlights the challenges related to equity and quality in higher education. The need for education policies that promote equality and improve quality is presented as an imperative to ensure inclusive and competitive education. These results reinforce the importance of reflecting on educational policies and the structure of the higher education system, with the aim of promoting more democratic and equitable access to education in Brazil, balancing the influence of the private sector with the objectives of inclusion and educational excellence.

Keywords: Higher Education, Private and Public Institutions, Educational Policies, Equity in Education.

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INTRODUCTION

Given the growing relevance of the University Higher Education System in national progress and its dynamic evolution over the last decades, this paper focuses on identifying and analyzing the trends and challenges faced by this system in Brazil until 2019, immediately before the global outbreak of the Covid-19 pandemic. This analysis aims to contribute to a deep understanding of the pre-existing infrastructure and dynamics, thus facilitating the contextualization of the subsequent impacts of the pandemic on the education sector.

The main purpose of this study is to provide a comprehensive analysis, both quantitative and qualitative, of the context prior to the outbreak of the pandemic. This approach stands as a cornerstone for the elaboration of subsequent comparisons and impact assessments. In order to fulfill this purpose, the research uses a mixed methodology, which harmonizes the scrutiny of quantitative datasets in the public domain with qualitative appraisals emanating from an exhaustive examination of the relevant literature, in force until 2019, in the field of higher education. Such a methodological strategy provides a comprehensive and detailed understanding of the particularities and challenges inherent to the university higher education system in Brazil, right on the cusp of an unparalleled global health crisis.

EVOLUTION AND DECENTRALIZATION OF HIGHER EDUCATION IN BRAZIL: FROM THE TRADITIONAL LIBERAL PROFESSIONS TO THE UNIVERSITY EXPANSION OF THE TWENTIETH CENTURY

Throughout the history of higher education in Brazil, it was only in the 1930s that higher education began to take on a genuinely university character, a process that contrasts with some Latin American countries, where the first universities were established during the colonial period. Sampaio (n.d.) illustrates that, for more than a century, from the founding of the first high schools in 1808 to the creation of the University of São Paulo in 1934, a model of higher education oriented to training in traditional liberal professions, such as law, medicine, and engineering, predominated in Brazil.

Between 1808 and 1889, the development of the higher education system in Brazil was slow, reflecting the few social and economic changes of the time. The system was aimed at obtaining professional qualifications that conferred social prestige and access to a limited labour market.

The period of political stability and economic growth during the reign of Don Pedro II, particularly after 1850, catalyzed a gradual expansion of educational institutions and the consolidation of significant scientific centers such as the National Observatory and the National Museum. However, higher education continued to be limited to a few areas and concentrated in specific institutions.



Until 1878, higher education in Brazil was exclusively public and centralized. The Reform of Leôncio de Carvalho (Decree No. 7247 of 1879) marked a change by establishing free primary and secondary education in the Court and promoting higher education in all provinces. The debate on the role of the university, seen as an instrument for the government's centralizing objectives, was intense and contributed to the delay in the evolution of Brazilian higher education.

The end of slavery in 1888 and the proclamation of the Republic in 1889 were catalysts for social and educational transformations. According to Sampaio (n.d.), the educational decentralization promoted by the Constitution of the Republic allowed the creation of private institutions, which diversified and expanded the offer of higher education.

As a result of the decentralization of higher education, the 20th century saw a notable increase in the number of institutions providing higher education in Brazil, as illustrated in Table 1.

Table 1: Expansion of the Higher Education System - Brazil - 1900-1968

Course of time	Number of higher education schools created	Total
Until 1900	24	24
1900-1910	13	37
1910-1920	34	71
1920-1930	86	157
1930-1945	95	252
1945-1960	223	475
1960-1968	375	850

Source: Hecho de Sampaio (n.d.)

Table 1 shows a clear growth trend in the creation of higher education institutions over time, reflecting a pattern consistent with educational development. It is evident that from the initial period to 1900, with a total of 24 institutions, to the last recorded period from 1960 to 1968, with an increase of 375 institutions, resulting in a cumulative total of 850, there is a significant expansion.

This increase can be interpreted as a reflection of progressive educational policies and a growing appreciation of higher education as an engine of social and economic advancement. The acceleration in the founding of new educational institutions during the decades 1945-1960 and from 1960 to 1968 could suggest a response to the specific needs of a country undergoing reconstruction and modernization in the post-war period and during a period of technological and structural transformations.

The information contained in Table 1 is indicative of significant changes in the socioeconomic and political structure, where higher education plays a preponderant role in the formation of human capital capable of responding to the challenges of its time. This analysis, while preliminary, lays the groundwork for further research into the driving forces behind this growth and the implications for Brazil's future.



Figure 1, constructed from Table 1, shows the expansion of the higher education system in Brazil from 1900 to 1968 through two data series: the number of higher education schools created at specific time intervals and the cumulative total of schools created up to each point.

The trend is clearly upward, indicating a sustained growth in the creation of higher education institutions in Brazil during the period studied. The dotted line represents the number of institutions created in each time interval, showing peaks that reflect periods of intense expansion. On the other hand, the solid line shows the cumulative total of institutions, highlighting the progressive accumulation of growth.

Statistically, the graph suggests an exponential growth in the creation of new schools, especially noticeable in the last period of 1960-1968. This type of growth can be indicative of several factors, including favorable government policies, an increase in demand for higher education due to population growth and the country's industrialization, as well as improvements in education infrastructure and financing.

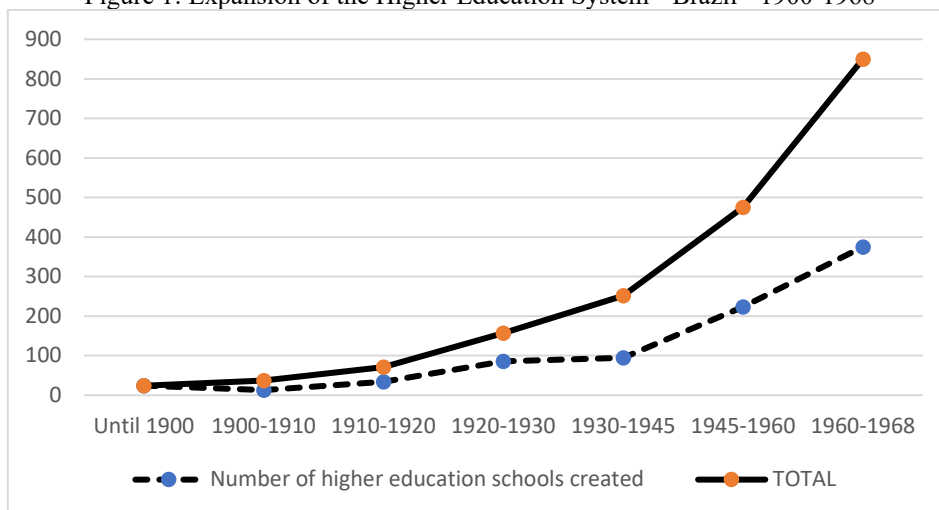
It is important to note that between 1945 and 1960, the pace of creation of new institutions remained constant and significant, which could be correlated with the post-war period and the initiation of national development policies. The marked acceleration since 1960 could be associated with a period of educational reforms and a focus on modernizing and expanding educational capacity to support the country's economic and social development.

The interpretation of the graph must be careful, as the sheer number of institutions does not necessarily reflect the quality of education or equity in access to it. For a deeper understanding of the impact of this expansion, it would be useful to analyze data on the geographic distribution of these institutions, the diversity of programs offered, the socioeconomic profile of students, and the correspondence between the education provided and the needs of the labor market.

Figure 1 not only illustrates a quantitative expansion of the higher education system in Brazil, but also implies a number of socioeconomic and political dynamics that deserve further analysis in the context of Brazil's educational history and development. However, Sampaio (n.d.) points out that these changes were not only quantitative, and "higher education began to place more emphasis on technological training which, in turn, required a better scientific base."



Figure 1: Expansion of the Higher Education System - Brazil - 1900-1968



THE SITUATION OF THE BRAZILIAN UNIVERSITY HIGHER EDUCATION SYSTEM - 2019

This chapter is based on the analysis of the Technical Summary of the 2019 Higher Education Census (BRASIL, n.d.). Our discussion is anchored in the official data that reflect the structure, supply and scope of the higher education system in Brazil during that year.

In approaching the plurality of higher education institutions from an administrative and academic perspective, we rely on the meticulous compilation of figures and statistics that allow us to understand the magnitude and diversification of the education system in terms of its offer and its capacity to serve the university-age population. This study aims to reveal not only the figures that characterize the availability and distribution of undergraduate courses, but also the relationship between the vacancies offered and the regional demographics of young people, which is essential to assess the accessibility and equity of the education system.

At the same time, student enrolment and teacher qualifications are examined, aspects that are indicative of the quality and effectiveness of education in preparing professionals for the labour market. This review is enriched with the context provided by the "Technical Summary of the Census of Higher Education 2019" of the INEP, which guarantees the veracity and timeliness of the information handled.

The analysis is framed in a language that seeks to transcend the numbers, presenting a narrative that reflects the human experiences behind the statistics. Thus, the chapter is proposed not only as a recounting of data, but also as an interpretation that seeks to understand the personal and collective histories that are shaping the educational future of Brazil. With access to this reference on January 15, 2024, we assure that our study is supported by reliable and recent information, which strengthens the validity and relevance of our conclusions in the field of higher education.



Table 2 classifies higher education institutions in Brazil in 2019 according to their administrative category and academic organization. This classification is essential to understand the composition of the Brazilian higher education system and the dynamics of access to education at different levels.

The administrative categories are divided into public and private, reflecting the management and financing model of each institution. In the public sphere, an additional distinction is made between federal, state, and municipal institutions, indicating the decentralization of the education system and the distribution of responsibilities among the different levels of government.

The academic organization is categorized into universities, university centers, faculties and IF and Cefet, which are federal institutes and federal centers of technological education. This differentiation is important because each type of organization has different approaches and scopes in education. For example, universities typically offer a wide range of undergraduate and graduate programs, in addition to engaging in research, while faculties are typically more focused on undergraduate programs and may be more specialized.

The total number of higher education institutions is presented in the first column, with an overall sum and distribution between public and private categories. The predominance of private institutions is remarkable and reflects the trend of privatization of higher education in many parts of the world.

The following columns break down the total number of institutions by type of academic organization. This information is crucial to understanding not only the number of institutions available, but also the variety of pedagogical approaches and specializations that make up Brazil's higher education system.

Table 2: Number of higher education institutions, by academic organization, by administrative category - Brazil - 2019

Administrative Category	Total General	University	University Center	Faculty	IF and Cefet
Total	2.608	198	294	2.076	40
Public	302	108	11	143	40
Federal	110	63	1	6	0
Express	132	40	1	91	0
Municipal	60	5	9	46	0
Private	2.306	90	283	1.933	0

Source: Prepared by Deed/Inep based on data from the Higher Education Census

Table 2 shows that, of the 2,608 higher education institutions in Brazil, 2,076 are colleges, equivalent to 79.60% of the total number of institutions, 294 university centers (11.27%), 198 universities (7.59%), and 40 Federal Institutes of Education and Federal Centers of Technological



Education (1.53%). It is also observed that 11.58% of the total number of higher education institutions in Brazil are public and 88.24% are private.

With the data presented in Table 2, it can be seen that the number of private higher education institutions corresponds to 7.6 times the number of public higher education institutions.

Table 3: Percentage of higher education institutions, by academic organization, by administrative category in relation to the Total - Brazil - 2019

Administrative Category	Total General	Percentage in relation to the Total
Public	302	11,58%
Federal	110	4,22%
Express	132	5,06%
Municipal	60	2,30%
Private	2306	88,42%
Total	2608	

Source: Based on data from the Higher Education Census

Of the total number of HEIs, 88.4% are private and 11.6% are public; of which 5.1% state, 4.2% federal and 2.3% municipal. In terms of academic organization, also according to Table 2, schools predominate, with 79.6%, followed by university centers, with 11.3%, universities, with 7.6%, and federal institutes (IF) and Federal Centers for Technological Education (Cefets), with 1.5%.

Table 4 highlights the number of undergraduate courses, by administrative category and academic organization in Brazil in 2019.

Table 4: Number of undergraduate courses, by administrative category and academic organization in Brazil - 2019

Administrative category	Total General	University	University Center	Faculty	IF and Cefet
Total	40.427	16.427	9.680	12.602	1.718
Public	10.714	8.260	148	588	1.718
Federal	6.669	4.928	1	22	1.718
Express	3.442	3.121	13	308	0
Municipal	603	211	134	258	0
Private	29.713	8.167	9.532	12.014	0

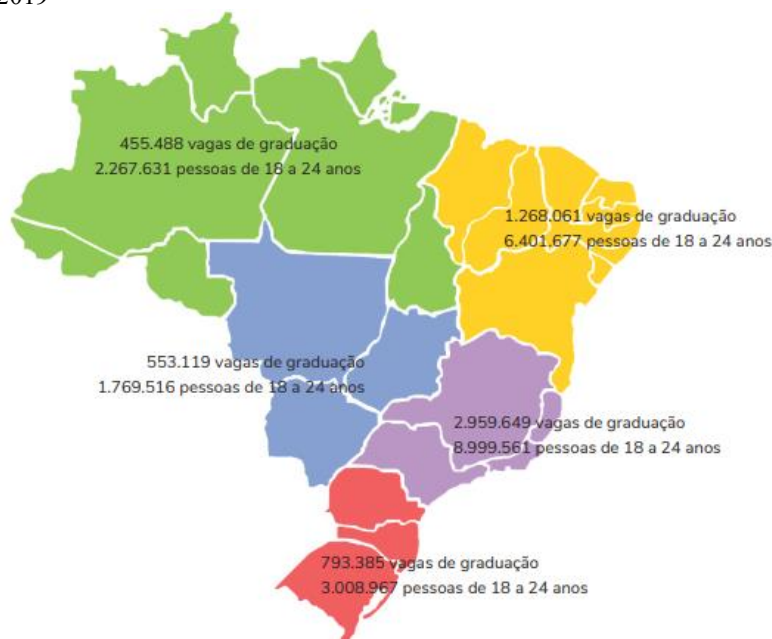
Source: Prepared by Deed/Inep based on data from the Higher Education Census

Table 4 shows the following situation: of the overall total number of undergraduate courses offered, 73.5% are offered by private institutions and 26.5% by public institutions. It is also found that 40.6% are linked to universities, 31.2% to schools, 23.9% to university centres and 4.3% to IFs and Cefets. Regarding the administrative category of these courses, the same table shows that: 73.5%

of the courses are private and 26.5% public, of which: 16.5% are federal, 8.5% state and 1.5% municipal.

Figure 1 illustrates the population distribution of people between 18 and 24 years of age, by large regions, as well as the respective distribution of undergraduate places offered in face-to-face courses.

Figure 1: Number of vacancies offered in face-to-face undergraduate courses and regional distribution of the population aged 18 to 24 - Brazil - 2019



Source: Prepared by Deed/Inep based on data from the Higher Education Census and the Brazilian Institute of Geography and Statistics (IBGE) – National Continuous Household Sample Survey (Pnad Contínua).

It is observed that there is no exact correspondence between the population size at the regional level and the corresponding supply of undergraduate vacancies. Southeast, Northeast and South are, respectively, the first major regions in terms of population and number of vacancies. In relation to the North and Central-West regions, the fourth and fifth least populated regions, respectively, there is an investment in the magnitude of the number of vacancies and the Central-West exceeds the offer presented by the North.

Table 5, constructed from the data obtained in Figure 1, shows this difference in percentage values.



Table 5: Percentage of vacancies offered in face-to-face undergraduate courses in relation to the regional distribution of the population aged 18 to 24 - Brazil - 2019

Region	Graduation Vacancies	People from 18 to 24 years old	percentage
Southeast	553.119	1.769.516	31,26%
Northeast	1.268.061	6.401.677	19,81%
On	793.385	3.008.967	26,37%
North	455.488	2.267.631	20,09%
Midwest	2.959.649	8.999.561	32,89%
TOTAL	6.029.702	22.447.352	26,86%

Source: Based on data from the Higher Education Census and the Brazilian Institute of Geography and Statistics (IBGE)

Table 4 shows that the number of undergraduate vacancies offered in relation to the number of people between 18 and 24 years old is small. Since the North region retains an approximate percentage of 20% of vacancies for graduation in relation to the total number of people with the age presented. In the overall total, there are only 26.86% of vacancies offered for the population aged 18 to 24, which can be considered a very low number of the population.

Table 5 shows the number of undergraduate enrollments by administrative category, according to the academic organization in 2019.

Table 5: Number of undergraduate enrollments by administrative category, by academic organization - Brazil - 2019

Administrative Category	University	University Center	Faculty	IF and Cefet	Total
Public	1.721.425	20.962	121.916	215.843	2.080.146
Federal	1.114.468	2.167	2.776	215.843	1.335.254
Express	571.714	1.179	83.692	0	656.585
Municipal	35.243	17.616	35.448	0	88.307
Private	2.766.424	2.242.342	1.514.912	0	6.523.678
Total = Public + Private	4.487.849	2.263.304	1.636.828	215.843	8.603.824

Source: Based on data from the Higher Education Census

Table 5 shows that 24.18% of undergraduate enrollments in academic higher education organizations in Brazil are public and 75.82% of enrollments were in private institutions.

Table 6 highlights the number of active professors and the percentage in relation to the total, by administrative category and academic organization in Brazil in 2019.



Table 6: Number of active professors and percentage of the total, by administrative category and academic organization - Brazil - 2019

Academic organization	Total	Administrative Category			
		Public	Percentage	Private	Percentage
University	203.831	140.156	68,76%	63.675	31,24%
University Center	58.407	1.573	2,69%	56.834	97,31%
Faculty	97.763	8.602	8,80%	89.161	91,20%
IF and Cefet	26.072	26.072	100,00%	0	0,00%
Total	386.073	176.403	45,69%	209.670	54,31%

Source: Based on data from the Higher Education Census

Table 6 shows that private higher education institutions retain 54.31% of the number of professors, in contrast to 45.69% of public institutions.

In conclusion, the chapter dedicated to analyzing the situation of the Brazilian University Higher Education System in 2019 provides a comprehensive and detailed diagnosis of the structure and functionality of this system at a crucial moment, just before the COVID-19 pandemic. Through a rigorous analysis of the data provided by the 2019 Higher Education Census, it has been possible to unravel the complexity and heterogeneity of the higher education system in Brazil, evidencing both its magnitude and its particular challenges.

The study has highlighted the diversity of institutions that make up the Brazilian higher education system, underlining the coexistence of universities, university centers, faculties, and other institutes, each with specific roles and scopes in the educational landscape. It also highlighted the disparity between educational supply and regional demand, a critical aspect for understanding issues of accessibility and equity within the system.

The predominance of private institutions over public institutions is presented as a reflection of global trends, but it also raises questions about the sustainability and inclusivity of the higher education model in Brazil. In addition, the analysis of student enrolment and faculty qualifications provides valuable insights into the quality and effectiveness of the system in meeting the needs of the labour market and society at large.

Finally, this chapter not only provides a compendium of essential data for understanding the state of higher education in Brazil on the eve of an unprecedented global event, but also lays a solid foundation for future research assessing the impact of the pandemic on this crucial sector. The information summarized here is, therefore, an invaluable resource for academics, policymakers, and educational managers dedicated to the reform and improvement of the higher education system in Brazil.



DYNAMICS AND DISPARITIES IN BRAZILIAN HIGHER EDUCATION: A COMPARATIVE ANALYSIS BETWEEN PUBLIC AND PRIVATE INSTITUTIONS IN 2019

This chapter addresses a critical and detailed analysis of data related to faculty, enrollment, and number of courses in public and private higher education institutions in Brazil for the year 2019. Through the interpretation of Table 7 and Figure 2, we seek to deepen the understanding of the distribution and disparities between both types of institutions, with the aim of clarifying the underlying dynamics that characterize the Brazilian higher education system in this period.

The analysis focuses on three fundamental variables: the proportion of teachers, student enrollment and academic offer, in order to assess not only the magnitude of each sector (public and private) but also its influence and contribution to the national educational landscape. This review aims to provide a comprehensive perspective to appreciate the trends, challenges, and opportunities that these figures reveal, thus facilitating a contextualized interpretation of the state and evolution of higher education in Brazil.

However, when analyzing the number of courses and students, a significant difference in the percentage can be seen, as can be seen in Table 7 below.

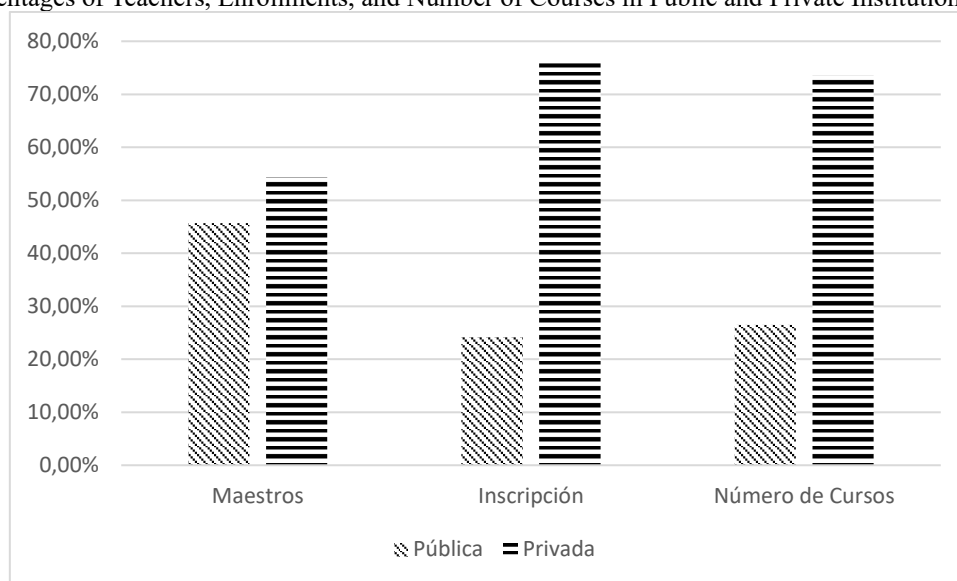
Table 7: Percentages of Teachers, Enrollments, and Number of Courses in Public and Private Institutions - Brazil - 2019

Institution	Teachers	Inscription	Number of Courses
Public	45,69%	24,18%	26,50%
Private	54,31%	75,82%	73,50%

Source: Based on the data presented in the paper,

In Table 7, it can be seen that in 2019 the number of professors in higher education institutions in Brazil proportionally represented 84.13% of the faculty of private institutions. However, in terms of the enrolment rate and the number of courses offered, this proportion was 31.89% and 36.05% respectively. Figure 2 illustrates the percentage and this difference.

Figure 2: Percentages of Teachers, Enrollments, and Number of Courses in Public and Private Institutions - Brazil - 2019



Source: Based on the data presented in the paper,

The findings presented in this chapter reveal significant data on the structure of higher education in Brazil, highlighting the stark differences between public and private institutions in terms of faculty, student enrollment, and number of courses offered in 2019. The evidence shown in Table 7 and Figure 2 indicates a predominance of the private sector in enrollment and course offering, contrasting with a more equitable balance in the distribution of teaching staff between the two sectors.

These results underscore the relevance of private institutions in the provision of higher education in Brazil, as well as the challenges inherent to a system where educational equity and quality must be guaranteed in contexts of institutional diversity. The observed disparity raises crucial questions about the accessibility and democratization of higher education, prompting the need for deeper reflections and educational policies that address these dynamics.

Ultimately, the final analysis of this chapter contributes to a more nuanced understanding of the Brazilian higher education landscape, providing a solid foundation for future research and for the formulation of strategies that promote a more inclusive and equitable higher education in the country.

CONCLUSION

By concluding this exhaustive study on the University Higher Education System in Brazil, we have deepened the understanding of its evolution, structure and the challenges it faced until 2019, offering a panoramic and detailed vision that precedes the significant impact of the Covid-19 pandemic on this sector. Throughout the chapters, we have navigated from the evolution and decentralization of the education system, through a specific analysis of the state of higher education



in 2019, to a comparative study of the dynamics and disparities between public and private institutions.

This work has fulfilled its main purpose: to provide a comprehensive analysis that not only encompasses the quantification of higher education in Brazil, but also delves into the quality and context of educational dynamics. We have managed to answer the questions initially raised, highlighting how the various institutions have contributed to the Brazilian educational landscape and how they positioned themselves in the face of an impending global crisis.

The relevance of this study lies in its contribution to the detailed understanding of a key sector for national development. The findings presented here not only enrich the existing literature, but also offer a valuable resource for policymakers, educators, and academics, emphasizing the need for strategies that promote more inclusive, equitable, and resilient higher education.

We have shown that, despite progress and significant expansion, significant challenges remain, especially in terms of equity and quality between public and private institutions. These challenges, underlined in the pre-pandemic context, take on a new dimension when considering the repercussions of the health crisis, which requires urgent future analysis to measure its full impact.

In sum, this study has not only responded to the stated objective, but has also mapped the terrain that still needs to be explored in future research, marking a critical starting point for understanding and continuously improving the higher education system in Brazil. With this, we hope that this analysis will contribute to the construction of an education system that not only adapts to global changes and challenges, but also proactively anticipates and prepares for them, thus ensuring a more promising future for higher education in the country.



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