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AN ANALYSIS OF THE PRIVATE EDUCATION  
MARKET IN BRAZIL

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# ACKNOWLEDGMENTS

Mother, I would like to express my deepest gratitude to you. Your support and encouragement is always my constant source of strength.

Thank you all for your contributions and support.

# ABSTRACT

This thesis aims to provide a comprehensive analysis of education in Brazil, with a focus on the role of private sector. The historical evolution of the market is described together with Brazil's key challenges to tackle the education-related 2030 Sustainable Development Goals. The study tells a story of how formal education developed in Brazil and highlights the most important policies that influenced its path. The work sources quantitative data of enrollment statistics and student performance in national assessment tests to support its arguments, as well as qualitative insights drawn from academic literature and news articles. Reasons for the current increase in demand for private schooling are explored, as well as the impact of school types and locations on student educational performance. Moreover, the topic of income inequality is addressed by comparisons of school infrastructure and regional disparities.

**Keywords** – Private Education, Educational Policy, Student Performance, Social Inequality.

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# 1 INTRODUCTION

From an economics perspective, education can be considered as an investment that creates wealth in the form of human capital. While education itself is intangible, an increase in skills can improve the future earning power of an individual and provide a positive return on investment in relation to the time and effort committed towards learning.

If we consider the effects of education on a societal level, trained employees are generally more efficient and can increase profitability in companies that are capable of applying their skills in productive activities. This means that education is a type of good that produces positive externalities and should be a focus of individual and public investments. Therefore, it is in the interest of governments to provide comprehensive access to study opportunities, especially during the early childhood years.

Education was recognized as a human right by the United Nations in 1948, when the Universal Declaration of Human Rights was proclaimed. Article 26 of said document states that elementary education shall be universal, compulsory and free, and that higher education should be available to all on the basis of merit. (1) Education is also one of the 17 goals in the UN's Agenda for Sustainable development (2). Every country member of the UN reached the compromise to ensure inclusive and equitable quality education to its citizens and work towards achieving a common set of education targets by 2030.

The importance of education is undeniable in today's society. People are spending more years in schooling, with the average years of education in the world projected to increase from 7.9 years in 2010 to 11.0 years by 2060. (3) Studies show that a person is expected to receive an extra 10% in annual earnings for every additional year of learning (4) and that workers with a bachelor's degree and higher have a lower unemployment rate than those who have less than a high school diploma. (5)

However, not every education is of equal quality nor everyone has access to the same education opportunities. Given Brazil's low quality basic public school system (6), many



young families feel pressured to enroll their children into private schools whose tuition can cost up to 21 times the Brazilian monthly minimum wage (7). The parent's main objective for their children is to guarantee access to Brazil's top universities that have increasingly competitive admission processes. University of São Paulo had more than 100 applicants for every spot in some of its courses last year (8). This gruesome statistic explains why some students need to continue studying for years after they have already finished High School while attempting to get a passing score on the national university entrance exam.

Education can also be used as a tool to reduce income inequality. Subsidies for lower-income students through scholarships and grants allow the access of better future job opportunities to a segment of the population that was previously underprivileged.

It is the object of great debate the financing sources of education. Some argue that the government should subsidise every step of education, from basic to higher education, given there are large positive externalities to society. Others state that the greatest benefactor of education is the individual who gets higher future earnings and because of this he should pay its price. Employers also have a role in financing education with upskilling and training programmes for their employees.

In general, governments view education as a merit good, which benefits society more than the individual. Because of this characteristic, education is heavily subsidised to avoid under-consumption of the efficient amount of this good. The paternalistic attitude from the government is also reflected by making basic education mandatory and tied to other welfare benefits, indicating that public policy believes to be more informed than the consumers to decide what is best for them.

The private education market in Brazil represents a growing segment of the country's student population. More than 9 million students are enrolled in private institutions across all levels of education, from early childhood to higher education (9). This market's expansion is driven by a combination of socio-economic factors, which include rising middle-class aspirations to increased demand for first-rate education. As of 2022, private institutions served around 20% of primary and secondary school students and nearly 80% of higher education students (10).

Currently, there is a high local demand for educated manpower even while unemployment is at a low 7% (11). The service and construction sectors are the most affected, having 40% of its occupations flagged as experiencing a labor shortage. Some firms are offering increases of up to 20% in salary to attract new employees. This problem is par-

ticularly common in developing countries where workers have a lower productivity due to a lower rate of investment in physical capital, and thus more manpower is needed.

This thesis seeks to analyze the development of the private educational market in Brazil, its differences from the public system, as well as current educational challenges and future implications for the Brazilian society.

## 1.1 Context

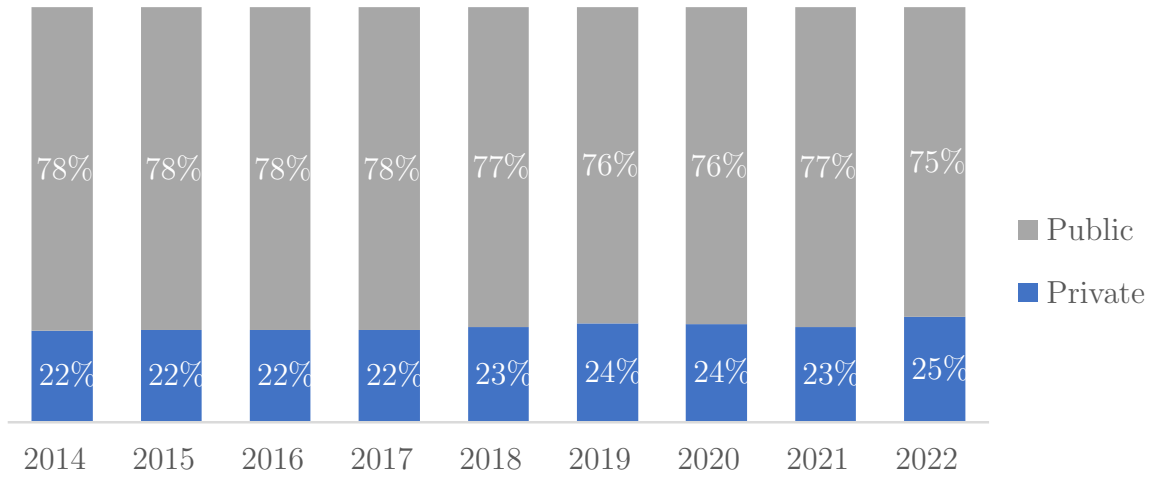
Brazil has a dual structure basic education system with public and private institutions. Public schools are funded primarily by local and state governments, but there are also institutions which receive federal and military resources. Education is free of charge for the students in the public system. The majority of the population is served by the public school system, while private basic education is usually reserved for the middle and upper classes that can afford it. The Brazilian Ministry of Education (MEC) is responsible for the national school program and quality control of education. However, the quality of public education remains subpar, in line with other sectors heavily influenced by government intervention. Private providers address this gap by using resources more efficiently to deliver high-quality education.

Private schools give access to classrooms that are better equipped with the newest materials and teachers that have more incentives to make sure the students are learning properly. These conditions have an effect on the outcomes of the students in international assessments such as the PISA test. Private schools achieved a much higher result in the 2022 edition of the exam compared to public schools, but they are still behind OECD countries average. (12)

The share of students in private institutions is stable over the last decade (Figure 1), primarily in the higher education sector. There is an increased demand for bilingual education and the 2020 pandemic increased economic disparities in the country. Recent trends indicate a shift in the private higher education market (Figure 2), with current players focusing on lower-income segments by offering online courses that are more affordable and can be financed through government or private loans. Especially during the pandemic, these online institutions experienced a boom in the number of enrolments, which lead the transformation of the segment as a whole.

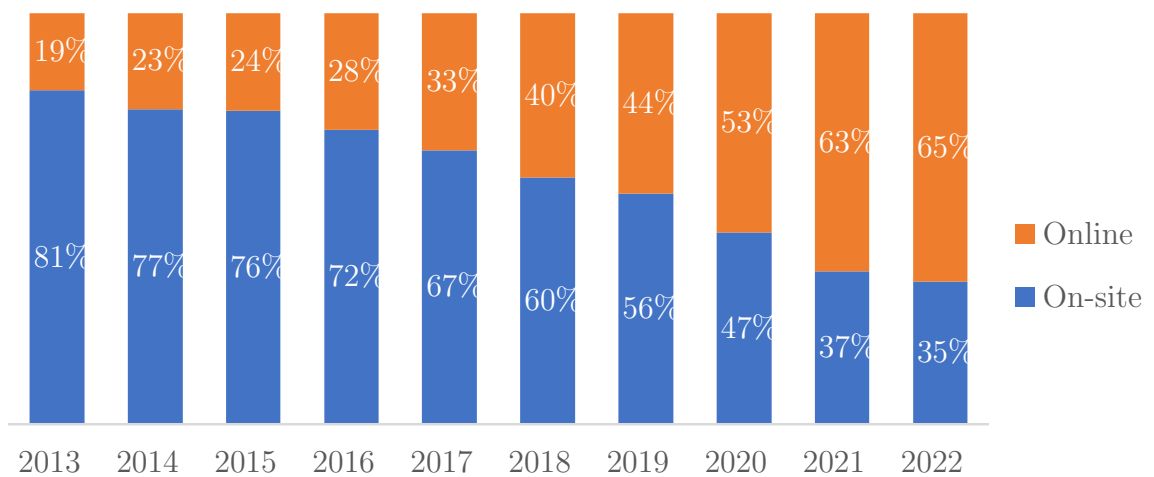
The duality of school systems is the result of deep socio-economic factors and lasting inequalities that permeate the Brazilian society. In its biggest city, São Paulo, the average

Figure 1: Evolution of private education market share in Brazil



SOURCE: INEP CENSO ESCOLAR 2023

Figure 2: Evolution of Online Higher Education Enrollment in Brazil



SOURCE: INEP CENSO DA EDUCAÇÃO SUPERIOR 2023

monthly tuition per student in 2023 was R\$1.539,54. (13) This is more than 30% of the median wage in the city (14), which means that only a small section of the population can actually afford them. Historically, private basic education in Brazil has been associated with the elite, which use it to maintain their socio-economic status. However, its difficult to establish a cause-and-effect relationship between educational outcomes and the type of education (either public or private) without considering the families' background, income and structure. (15)

Higher education has both public and private providers, receiving either state, federal or private resources. However, the quality difference between public and private institutions is reversed at the higher education level. The capital requirement to set up high quality universities is much larger, and thus the market is mostly comprised by public and private non-profit institutions. The private for-profit education sector has invested very little on research and development over the last decade, focusing on cheap and low-quality undergraduate education as their key value proposition, as well as meeting the demand that could not be fulfilled by the limited number of spots at free public universities.

Brazilian public universities score higher in international university rankings (16), with some exceptions of excellent private non-profit institutions. This stereotype only increased after the large expansion of private higher education in the 1970s, which is now dominated by private for-profit institutions (10). The growth of the sector can be attributed to the limited capacity of public universities to absorb this demand due to a lack of funding from state and federal government, as well as policies that encourage private for-profit institutions. However, there's plenty of controversy related to this expansion from academics, which raise concerns over the commodification of education and the increase of existing inequalities.

One of the main reasons for the massive expansion of enrollments in private colleges is the increase in public policies that subsidize these institutions through government-backed student loans and changes in regulatory frameworks. These programs such as ProUni (Universidade para todos), which offer scholarships, and student-loan program FIES (Fundo de Financiamento Estudantil) have allowed access to private universities for low-income students in the last 20 years.

## 1.2 Objectives

This thesis aims to provide a comprehensive analysis of the private education market in Brazil, focusing on the following key objectives:

- Historical evolution – trace the development of Brazilian private education and policy changes that influenced its growth;
- Market dynamics and structure – examine the demographic trends and economic factors driving demand;
- Challenges – identify the main concerns faced by private institutions;
- Future implications – explore growth and innovation opportunities within the sector.

## 1.3 Methodology

This study will employ a combination of quantitative data analysis with qualitative research. Datasets will be primarily sourced from the Brazilian government. The focus of the quantitative analysis will be on enrolment statistics, market share between public and private institutions and results on international assessment tests. The qualitative component will involve analysis of academic journals, history of education in Brazil and the impact of educational policies within the sector.

The Brazilian private education market has a critical impact on social mobility and economic development of the country. By analysing this sector, this thesis aims to contribute to the discussion on educational policy in Brazil and provide alternatives for government stakeholders pursuing the improvement of quality public and private education.

## 2 OVERVIEW OF THE BRAZILIAN EDUCATION SYSTEM

### 2.1 Current structure

The current structure of the Brazilian educational system was established in 1996 by the president Fernando Henrique Cardoso. The Law of Guidelines and Bases of National Education (LDB) defines national guidelines and principles that encompass all aspects of education, from the school curriculum to teacher training.

The system is divided into two main branches: basic and higher education (Table 1). Basic education has four components, which are daycare, preschool, primary school and secondary school. The municipalities are responsible for establishing and operating all basic education until secondary schools, which are mainly run by the states. Children from zero to five years attend daycare and preschool, from six to fourteen primary school, and from fifteen to eighteen secondary or high school.

| Educational System |                                     |              |          |
|--------------------|-------------------------------------|--------------|----------|
| Basic Education    | Daycares (0-3) and Pre-school (4-5) |              |          |
|                    | Primary School (6-14)               |              |          |
|                    | Secondary School (15-18)            |              |          |
| Higher Education   | Associate                           | Licenciatura | Bachelor |
|                    | Graduate Degrees                    |              |          |

Table 1: Educational Levels and Modalities

Moreover, higher education is supervised by the federal government. Students can attend courses and receive three types of degrees: an associate degree, which take on

average two to three years, then "licenciatura", which is a type of degree that's tailored towards teacher formation and lasts 4 years, and finally the bachelor's degree which can last from 4 to 6 years.

There is a pronounced division between public and private education in Brazil's education system. Public education is funded by taxes and is accessible to all, but the quality of education is lacking and there are extreme disparities in terms of funding and infrastructure. Almost 10 million students are currently lacking access to sanitation, energy, drinking water or internet connection in their schools (17).

## 2.2 History

To better understand how these structures were formed, it is advised to look back into history. The establishment of the first formal education system can be traced back to the arrival of the Portuguese settlers in 1549 (18). The Jesuit religious order came to Brazil with intent to evangelize the indigenous and slave populations, teaching them European customs and dogmas. The priests also taught the children of Portuguese nobleman how to read, write and understand religious texts, as well as philosophy. Jesuit education followed a standard curriculum published in 1599, called Ratio Studiorum. The focus of this program were academic and literary studies. There were no scientific disciplines. Their main values were authority, obedience, tradition and faith. However, the majority of the population did not have access to education, being reserved only to the privileged.

The Jesuit method was dominant in Brazil until the Pombal Marquess decided to expel all of them from Portuguese colonies in 1759. This decision marked the beginning of the first school reform and attempt to separate religion from education. The curriculum was simplified to attract more students and science was introduced as one of the disciplines. The ideas of the Enlightenment Age were fundamental in the beginning of the development of teaching of reason, science and technology in Brazil.

The Pombal reforms lasted for more than 50 years. The king of Portugal João VI escaped from Napoleon and arrived in Brazil in 1808. After his arrival he created the first higher education courses and established new military academies. The reasoning behind these decisions were to develop new professionals that had technical schools and were able to improve the productivity of the colony, given that Portugal needed to repay its debts to England at the time.

Brazil declared its independence from Portugal and became its own empire in 1822.

The first Brazilian constitution established the universalization of basic education as a target to pursue, as well as the creation of a national system of education. In 1827 a law was passed that defined a national curriculum and determined the construction of new schools all over the national territory. Women were first allowed to go to school at this time.

Unfortunately, the good intent of the legislators did not translate well to reality. There were not enough financial resources to open all necessary primary schools and government coordination was limited at the time. A common issue at the time was that there were not enough teachers, they lacked proper training and basic infrastructure such as books [X]. Access to education was limited among the wealthier segment of the population that could afford to have their children attend school instead of working. Secondary school still did not have a standard curriculum, as there was very few jobs that required it, and those were generally fulfilled by European immigrants. This situation has been proved favourable to the first capitalist countries that exported industrialized products and machines to Brazil, mainly England at the time.

This situation continued during the years of the Brazilian empire. In 1889 Brazil became a republic, and a new Constitution was created, assigning to the states the responsibility to create and support secondary schools. Benjamin Constant was one of the lead political thinkers and educators at the time, and he was responsible for a new reform that put scientific knowledge as a priority in learning. However, the main issues that made the previous reforms fail were not addressed, and such reform did not improve the educational outcomes. In the early 1900s, more than 70% of the population was illiterate (19) and the schools were concentrated in larger towns, only serving the interests of the elite.

The Ministry of Education and Health was created in 1930, and new Constitutions in 1934 and 1937 defined the structure of the educational system at the time. A dual system was proposed in which the privileged could attend secondary and higher education, while the sons and daughters of the working class would attend vocational training to provide a skilled workforce to the factories that were expanding its operations at the time. This would exacerbate even further the divide between the ruling classes and the people in general. Private institutions comprised nearly 40% of enrollments and 60% of higher education institutions, with a majority of these being religiously affiliated. (20)

In 1946 a new law was passed that promoted the first expansion of private schools in the country, which, at the time, were mainly religious. This new law did not establish



the gratuity of basic education that was present in previous laws. The curriculum was centralized and obligatory courses were defined, with optional courses that could be offered by the schools, such as industrial and technical skills. Nevertheless, the law was able to improve the quality of education by defining minimum requirements for teachers and finally unlocking the expansion of schooling to a segment of the population that was previously forgotten.

During the period of the Military Dictatorship that followed (1964-1985), a new law of guidelines (LDB) was passed that reinforced the mandatory aspects of basic education, as well as its availability to the general population through public schools or scholarships in private schools. Given the repressive characteristics of the regime, teaching was heavily influenced by its ideological nature and reinforced the ideas of authority and obedience that were common during the Jesuit era. The number of enrolments in higher education increased significantly during the era of the Brazilian "Economic Miracle" from 1968-1973, in which the country had a GDP growth rate of 11% per year and there was a rapid industrial development. In 1960 there were 200 thousand students in higher education, and in 1980 this number grew to 1.4 million, with an incredible 800% increase in enrolments in private institutions. (21)

Finally, in 1988 the current Brazilian Constitution was promulgated, and many of the educational principles that we have today branch from its text. The new national guidelines law (LDB) of 1996 was approved after years of debate, suffering only some alterations in 2013 that lowered the minimum mandatory age for school enrolment from 6 to 4-years-old. Now parents have the obligation to take their children to school from the moment they turn 4 until they are 17-years-old. Many schools were built and students finally had access to education, but the quality is still subpar, which is revealed by Brazil's poor results in international assessment exams such as PISA.

In 1999 the financing program for students (FIES) was established to provide student loans to low-income students. The interest rates are subsidised by the federal government and vary between 3,4 to 6,5%, which are considered extremely low given that Brazilian inflation has been high since the beginning of the 2000s, staying between 5 and 6% in the long-term average. This program was heavily criticised for being one of the main reasons for the private university boom in the 2010s. The number of financing contracts exploded from 76 thousand in 2010 to 732 thousand in 2014 (22). Besides its critics, FIES is still one of the main resources low-income students have to access higher education.

The University for all (ProUni) program was created in 2004. It offers partial (50%)

and full scholarships to private universities for students. The income cut off determines whether the student will have partial or full scholarship. In 2024, students that have a household income of less than 1,5 minimum monthly wages per person (or approximately 375 US dollars) are eligible for full scholarships, while students with household income between 1,5 and 3 minimum monthly wages per person receive a partial benefit.

In the 2010s there was a large consolidation movement within private higher education groups. The sector's leaders expanded their influence through mergers and acquisitions and absorbed smaller institutions to capitalize on economics of scale. This was also a signal of the maturation of the market, in which a slowdown in the growth of enrolments and demand from students took place (Table 2). The FIES program was dehydrated after its large expansion and overall budget cuts in subsidies.

Table 2: Number of active higher education institutions in Brazil

| <b>Year</b> | <b>Public</b> | <b>Private</b> |
|-------------|---------------|----------------|
| 1995        | 210           | 684            |
| 2001        | 183           | 1208           |
| 2007        | 249           | 2032           |
| 2013        | 301           | 2090           |
| 2014        | 298           | 2070           |
| 2015        | 295           | 2069           |
| 2016        | 296           | 2111           |
| 2017        | 296           | 2152           |
| 2018        | 299           | 2238           |
| 2019        | 302           | 2306           |
| 2020        | 304           | 2153           |
| 2021        | 313           | 2261           |
| 2022        | 312           | 2283           |

The evolution of higher education in Brazil has been shaped by its many reforms over the years. Policy changes expanded access and allowed for different types of institutions and courses that we have today. Understanding this evolution is important to identify the root causes for many of the different problems that Brazilian education system faces right now. To address these challenges new reforms should be proposed to reduce the disparity in quality between schools and improve the overall student experience. After all, Brazil will need to have a high-quality available labour force to continue its development and improve productivity, as well as promoting social equity and economic progress.

## 2.3 Education Market

### 2.3.1 Characteristics

The Brazilian education market went through a significant change in the last 50 years. There was a great expansion in the number of schools, mostly funded by the state and federal governments. However, institutions struggle with educational quality concerns, as well as a lack of resources for payroll and maintenance of infrastructure. The educational market is heavily regulated and subsidized by the government, being an integral part of several national development programs.

Some characteristics of the market explain the size of the challenge: Brazil has over 8.5 million square kilometers of landmass, divided into 5570 municipalities, and a population of over 210 million people. The population density varies tremendously between regions, being under 5 inhabitants/km<sup>2</sup> in the Northern region, while in the Southeast there are over 90 inhabitants/km<sup>2</sup>.

Brazil currently invests 5% of its GDP towards public education, which is above the average of OECD countries. However, due to differences between the nations per capita GDP, the Brazilian average investment in education is 40% lower than its OECD counterparts. The regional differences in income further complicate the situation, with cities ranging from Human Development Indexes of 0.45 to 0.86. The HDI is a measurement of three dimensions of quality of life: life expectancy, education and income. It was created to compare the development of countries by the United Nations. The index varies from 0 to 1, with any results under 0.55 considered low and above 0.80 very high. Brazil's average HDI is 0.620, which is considered medium.

The Brazilian public educational system is a solid example of government failure in a market. The government mandates twelve years of mandatory schooling because otherwise people would do less and education has positive externalities that help the community. However, inefficiencies in the public administration cause the quality of teaching in public schools to be subpar, which pushes away some of the most engaged parents into private institutions. These private schools compete on quality, but also increase the economic burden of families that already pay for educational services with their taxes, but given the lower quality they feel compelled to go to the private system.

The existence of private schools is positive for the government, because it saves them money at building and running quality institutions, as well as generating economic activity to receive taxes from. Religious and non-profit institutions are particularly present at the

educational sector because of its tax incentives and increased level of 'brand' confidence from the parents.

### 2.3.2 Regulations

The educational market in Brazil is not a free market. Strict regulations and high capital requirements make it difficult for new entrants to establish themselves. The federal government establishes national guidelines of education that determine the framework of study private institutions have to follow, but there are also extra restrictions in the state and municipality levels.

In general, students are required to come to school from 4 to 17 years, and study is divided into three phases: basic education I, basic education II and high school. During basic education students have to follow a minimum of 800 hours annually in courses divided into 200 days, while in high school this value is increased to 1000.

The disciplines with their related minimum hours are defined by the national curriculum (BNCC) (Table 3). Private schools are free to add extra classes, and many to do differentiate themselves among the competitions.

Table 3: Mandatory disciplines in basic education

| Year                              |
|-----------------------------------|
| Mathematics                       |
| Portuguese language               |
| Natural sciences                  |
| Human sciences                    |
| History of art                    |
| Physical education                |
| English language (after 6th year) |

Moreover, there are also minimum infrastructure and staff requirements to approve the construction of a school. In the state of Sao Paulo, schools need to offer at least 1.5m<sup>2</sup> of classroom space per student, as well as a list of rooms with minimum space requirements such as an auditorium (200m<sup>2</sup>), science laboratory, library and hallway space depending on the number of students enrolled. Regarding staff, a school also needs a licensed psychologist, as well as teachers with the corresponding degrees in their specific areas.

Schools have some degree of liberty at defining the curriculum as long as it fulfills the mandated minimums and is subject by approval from the Education Ministry (MEC). Schools are required to go through the creation of a pedagogical plan and list specific

actions to achieve the state and federal 5-year goals. There are check and balance systems at a state level to make sure the schools are performing what was agreed upon the plans, but given the government's inefficiency these do not work in a preventive fashion.

For higher education, colleges have much more freedom to define their curriculum as long as they adhere to MEC guidelines. There is an internal ranking of institutions that goes from 1 to 5. Colleges ranked 1 or 2 need to make changes to continue with their licenses, while institutions with 4 or 5 are known for their national and international quality. These assessments happen every three years, and universities need to keep their standards to continue operating.

### **2.3.3 Size and demand**

The School Census organized by INEP is the main source of information for statistical research regarding Brazilian basic education (9). Local and state educational departments are responsible for collecting data and organizing them into more than 400 categories. All primary and secondary schools participate, as well as special education schools and professional schools.

The data collection is divided into two different parts: for the first part the school directors and administrators insert data into a forms about the school itself, the number of teachers and classes, what infrastructure is available, how many students are enrolled and the types of professionals which are employed at the school. The second part of the collection is focused on the student's academic performance at the end of the year. This process is annual and mandatory for all schools, both public and private.

Almost all indicators that are followed by the Ministry of Education (MEC) come from this census. Here are some examples on what kinds of Key Performance Indicators (KPIs) are the most important:

- Average age on each grade;
- Student performance;
- Resources spent on each school;
- Approval rates for each cycle;
- School attendance rates;
- Evasion rate.

Moreover, demographic data was sourced from the government institute of statistics (IBGE) to understand the current population trends and make inferences on demand for educational services in the following years.

The private primary education sector currently has over 7 million students distributed on 40 thousand schools. 500 thousand teachers are employed in these institutions, with around 80% of them having graduated in university courses specific for teaching, the 'licenciaturas'.

The current projections indicate that the Brazilian population will continue growing in number until 2041, reaching 220 million people, and then start shrinking (23). This is due to a decrease in birth rates from the year 2000 to 2023, going from 2.32 to 1.57.

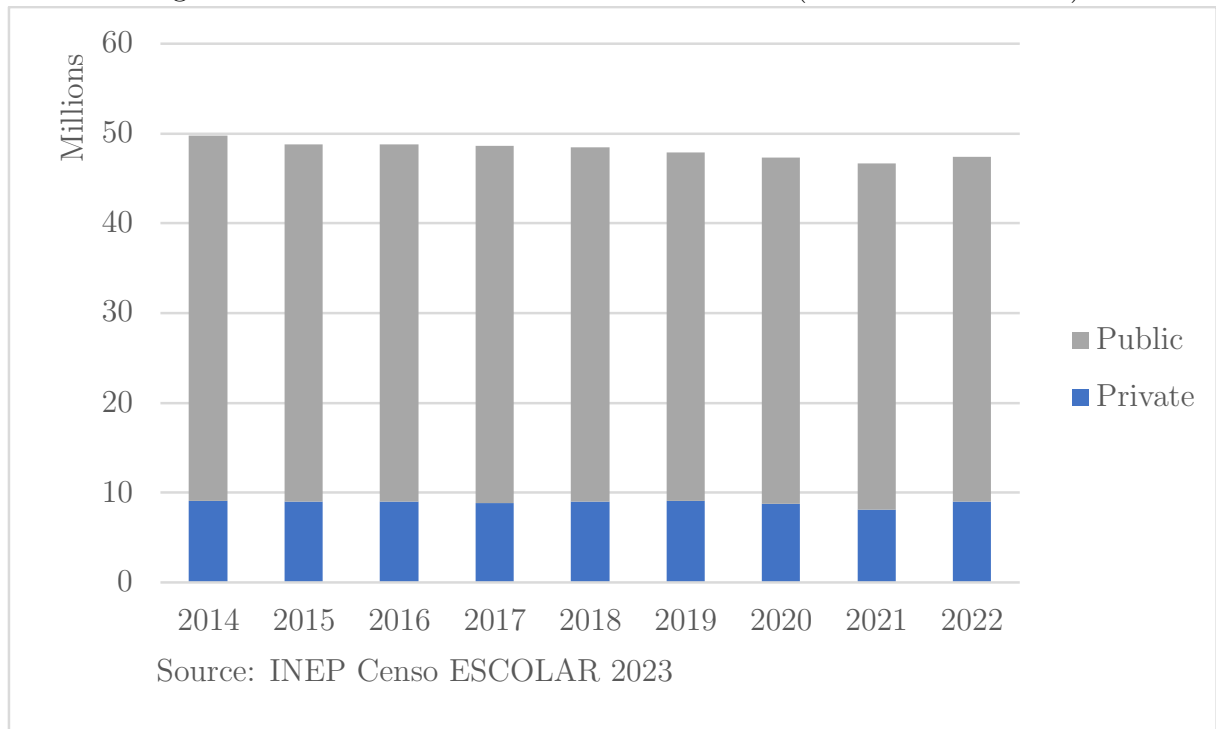
The decrease in birth rates is alarming because Brazil is already below the replacement rate of 2.1 children per woman. In 2020, the government census agency identified a ratio of only 1.5 children per woman (24). This means that the age pyramid will change really quickly, having less available workforce in the coming years. This might offer risks to the economy due to the decrease in people contributing to social security, causing elders to extend their working age to 70 years or more.

Multiple reasons explain these changes in habits. Birth rates are decreasing steadily since the 1960s after the invention of the contraceptive pill. The increase in female education and entry into the job market also contribute to a rise in average ages for first-time mothers, which is now equal to 27.7. Figure 3 shows that there are almost 2.4 million less students enrolled in basic education in 2022, than there were in 2014.

Brazil is following a trend that has already happened in most of the developed countries: there are less children being born, adults have longer life expectancy in general, and the population pyramid becomes stationary. This situation creates many problems given there are less people in the workforce for each retiree, impacting social security. Differently from the US and Europe, Brazil does not have an incoming flow of highly qualified immigrants to fill these gaps, being only 1% of its total population (25).

Brazil is also receiving an increased number of refugees from neighboring countries. In 2023, there were almost 60 thousand asylum requests (26), being two thirds Venezuelans or Cubans, whose countries are going through a humanitarian crisis. Most of the asylum seekers are families, with about 44% of them under the age of 18. They predominantly arrive through the northern border to Roraima, Amazonas and Acre states, which causes an overload in local social services and aggravates vulnerability situations.

Figure 3: Trends in basic education enrollment (number of students)



Breaking down the enrollment data into regions, it is possible to identify a slight tendency for improvement in school enrollment rates by children (Table 4), especially in the Northern region, which had a rate of 98.8% in 2016 which increased to 99.1% in 2023. These metrics are influenced heavily by the mandatory school attendance aspect of government income redistribution programs. Families that participate on Bolsa Familia, which is a type of universal basic income policy, have to satisfy minimum attendance requirements for their children, as well as keeping up with vaccination schedules (27).

Table 4: School enrollment rate for individuals aged 6 to 14 years (%)

| Regions          | 2016 | 2019 | 2022 | 2023 |
|------------------|------|------|------|------|
| <b>Brazil</b>    | 99.2 | 99.3 | 99.4 | 99.4 |
| <b>North</b>     | 98.8 | 98.6 | 98.7 | 99.1 |
| <b>Northeast</b> | 99.0 | 99.2 | 99.3 | 99.4 |
| <b>Southeast</b> | 99.4 | 99.4 | 99.4 | 99,4 |
| <b>South</b>     | 99.2 | 99.5 | 99.3 | 99.3 |
| <b>Midwest</b>   | 99.2 | 99.2 | 99.3 | 99,7 |

Given the reduction in number of students over the years, average class sizes followed and had a slight decrease as seen on Figure 4. This indicator is commonly associated to the level of attention teachers are able to provide for each individual student. Generally, the lower is better. In that sense Brazil has average numbers across the board (28). The

student to teacher ratio is generally stable along the years, with a slight tendency to decrease, but not because of government intervention or increase in resources applied to education.

Figure 4: Evolution of Brazilian class sizes over the years



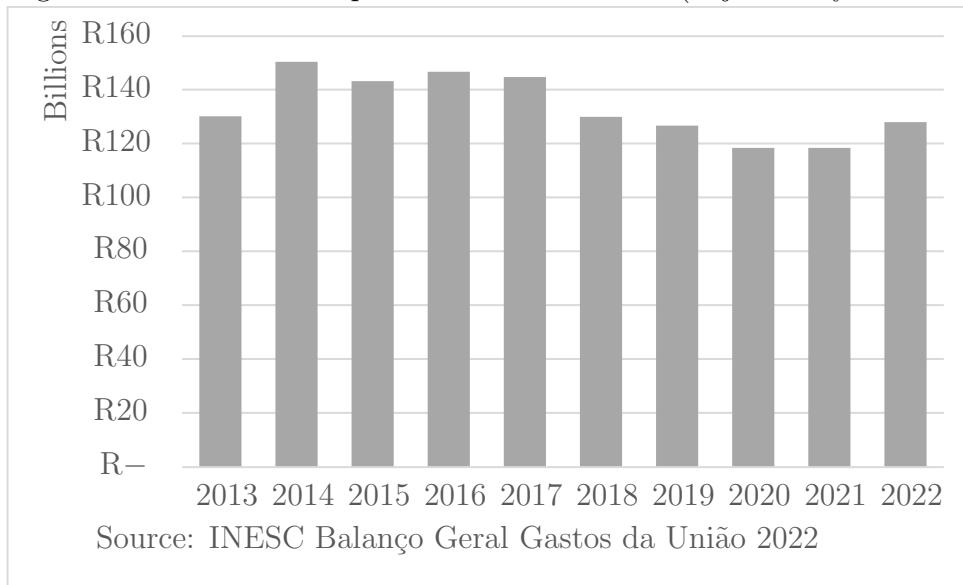
In fact, the government is reducing spending in education by 2.5% every year for the past ten years as seen on Figure 5 (29). This situation is completely against the trend of OECD countries, which are on average increasing education expenditure by more than 2% every year. Even when considering the decrease in overall number of students, these budget cuts are net negatives toward the average spend per student and threaten the continuity of service in many public institutions.

School sizes should also be considered to understand better the types of challenges these institutions face. Private and public schools have an average of 12 classrooms, or 1 class for each year of school from primary to secondary education. These figures are expected given that the majority of schools are small or medium-sized, ranging from zero to 500 students. Private schools tend to be smaller, with over 70% of them having less than 200 students.

Public schools tend to be bigger in size and availability given there is more demand for its services. However, there is still a significant number of schools with more than 500 students, which can be considered large (Figure 6). These schools might offer more

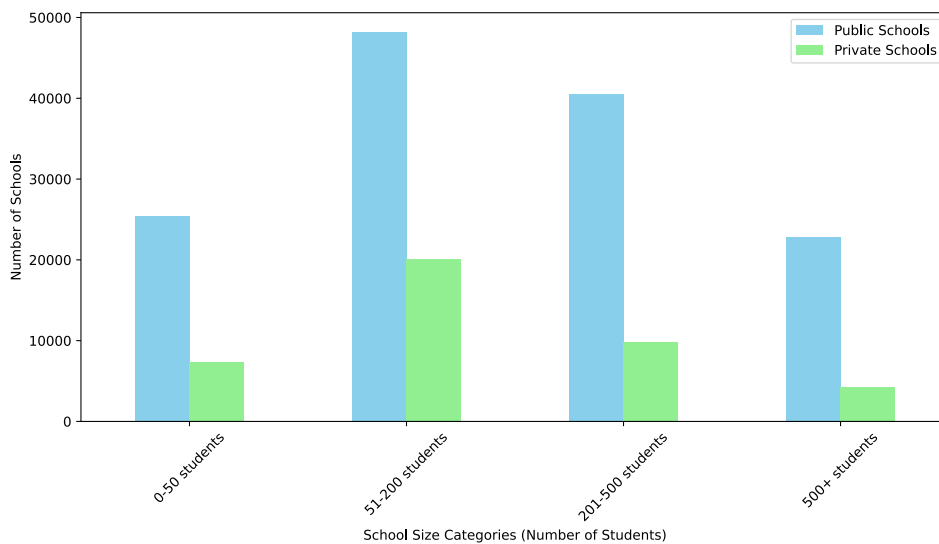


Figure 5: Government expenditure in Education (adjusted by inflation)



extra-curricular activities and be in larger cities than average. However, it is not possible to say with certainty if larger schools offer a better learning experience to its students given the limitation in the dataset.

Figure 6: Distribution of schools by type and size



When considering economic incentives for school sizes, it is clear that smaller schools have advantages. Brazil has three types of corporate tax regimes. The first, 'Simples Nacional', is destined for small and medium sized businesses that have yearly revenues under R\$ 4.8 million (approximately US\$ 900.000), with corporate tax rates ranging between 6-33%. The others, 'Lucro Presumido' and 'Lucro Real', share corporate taxes of up to 34%, with extra 20% contribution towards social security. Payroll is the highest

expense for private schools, being around 60% of expenditures, followed by rent (10%) and taxes (8%) (30). The net profit margin of private schools is around 15% (31), which is under the average of 20-30% of the services sector.

The private school segment suffered heavy losses during the Covid-19 pandemic, with almost 50% of small and medium schools being at the risk of bankruptcy (31). Their revenue was impacted by more than 40% during quarantine, which caused the permanent closing of almost 10% of institutions during 2020. To keep operations going, schools gave an average discount of 25%, which is still being passed on to the consumer, with tuition adjustments above inflation (32).

Considering the demographic challenge private schools face, coupled with a high dependency on human labor which is getting increasingly more expensive over the years, average tuition is poised to continue rising in the next decades. Given the inelastic characteristic of private schooling demand (33), families will have to increase their expenditure share in educational services, going beyond the current 5% for urban households (34).

During the 2000s there was a large increase in the Brazilian per capita GDP during the commodities boom, going from around 3.000 USD in 2002 to 13.600 USD in 2011. This great advancement in economic activity increased the average income and created a lot of demand for private educational services for the new middle and upper class families that were finally able to afford it. Total share of enrollments in private institutions went from 8% in 2000 to 18% in 2022.

The growth rate in demand has shrunk after 2011, given that Brazil is suffering from a decrease in GDP per capita since that year (Figure 7), and share of private institutions is stagnant at 18% from 2016 onward. A further increase in share of private education will need to be paired with a raise in average disposable income for families, so that they are able to consume educational services at a higher amount.

Looking at education from a business standpoint, the low margins of the segment can be explained by the limitations in demand and pricing due to a low national per capita income. Developed nations such as the United Kingdom and United States have average private school tuition upwards of \$11,000 per year, while institutions in emerging countries can charge much less (Table 5).

When comparing the size of the Brazilian educational market to other Latin American countries, it is possible to identify that Brazil is average among its peers (Figure 8) in terms of private share. The only nation with a ratio of private to public higher than one is Chile, because of its long-standing educational vouchers program. (35)

Figure 7: Real GDP vs enrollments in private basic education (%)

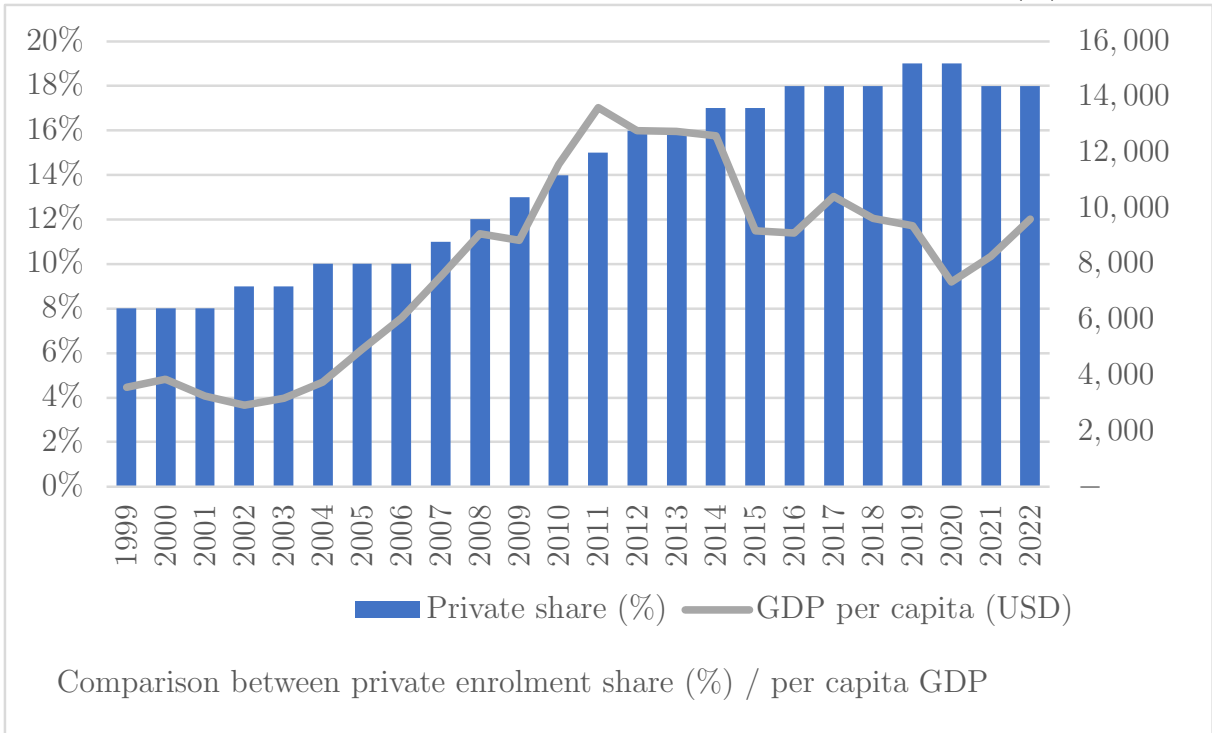
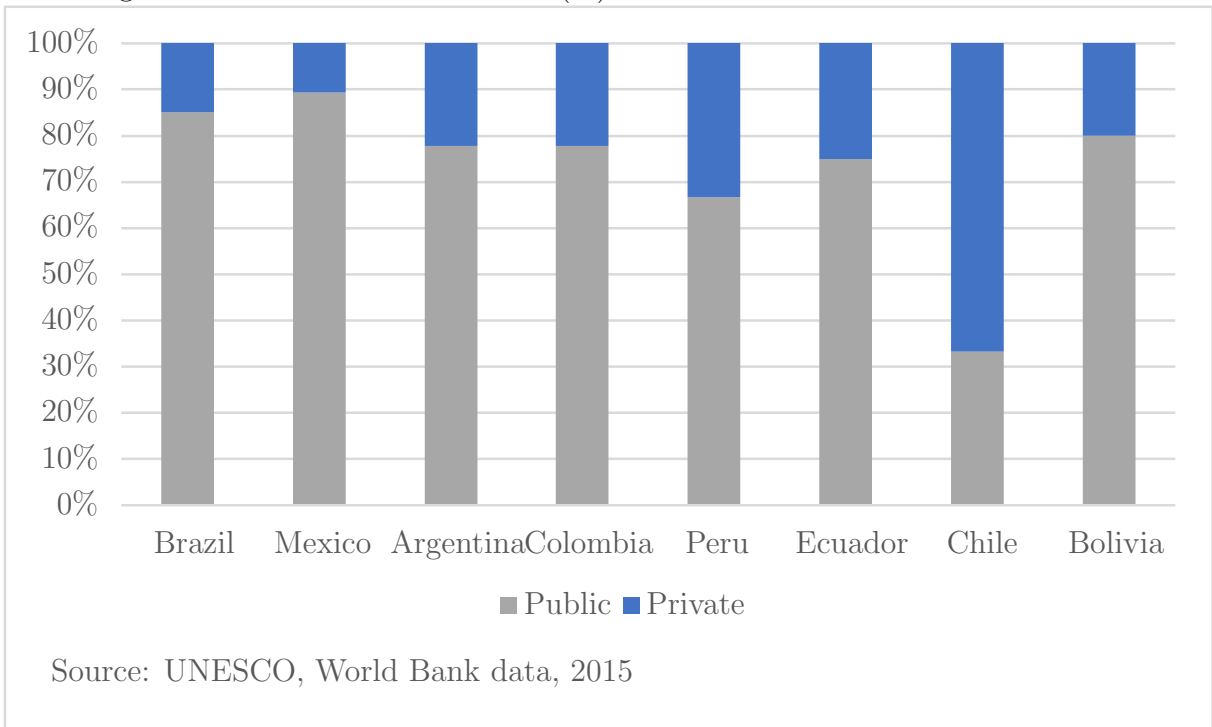


Table 5: Average enrollment and yearly tuition fees, select countries comparison

| Countries      | Average enrollment | Average tuition fee per year |
|----------------|--------------------|------------------------------|
| Brazil         | 250                | \$2,000                      |
| United Kingdom | 325                | \$11,000                     |
| United States  | 150                | \$11,000                     |
| China          | 425                | \$3,000                      |
| India          | 250                | \$1,000                      |

Figure 8: Private education share (%) in K-12 schools across Latin America



## 3 MAIN ISSUES

### 3.1 Income inequality

The Brazilian education system faces numerous challenges. Its dual structure of public and private institutions mirrors the socio-economic inequalities within the country that has one of the highest Gini indexes in the world, currently standing at 52% after its latest scoring in 2022 (36). This index measures the extent to which income distribution is skewed towards the top, going from 0 (complete equality) to 100 (individual monopoly). To put this result into perspective, Norway's index is 28%, while South Africa's is 63%. These systems operate in parallel and cater to different segments of the population, portraying the differences between access and educational outcomes in today's society.

One of the most significant issues within the public school system is the disparity in access and quality between regions. Even when considering one of the richest cities of the nation, São Paulo, there's a serious lack of resources for many municipal schools (17). The vast majority of the student population is enrolled in public institutions, which are often underfunded and offer inadequate infrastructure. It is not uncommon to have free slots of classes during the day because teachers were late or did not show up. Even those teachers who work diligently suffer from the shortage of essential resources such as textbooks, laboratory equipment and classroom infrastructure. Teacher training programmes are also needed to keep them up to date to the furthest scientific developments and classroom techniques.

In contrast, private schools generally have better access to resources and infrastructure. Their main source of funds is tuition fees paid integrally by the parents. With this money they are able to invest in superior facilities and offer higher salaries to attract more motivated teachers. Under these circumstances, students at these schools have a more conducive learning environment and are able to have better academic outcomes. Private schools also score consistently more in international assessment exams than public schools, but are well below OECD countries average, which might indicate some deficiencies in

the system as a whole.

Besides the clear gap in infrastructure between both systems, it is unclear to some academics if the reason private school students do better in standardised exams is due to the type of operation of the school or if other factors such as the average household income, family structure and parent engagement play a larger role. Even among private schools there's a considerable divide between the average institution that serves mostly middle-class families and the elite schools that cater to the wealthy.

Teacher quality and professional development is different between public and private institutions. While public school teachers have job stability and might receive higher base salaries depending on the institution and region they work, they suffer from challenging work conditions with larger class sizes and limited access to development opportunities and career growth. Teacher turnover is very high especially at problematic schools (37) and young people are increasingly less interested in the career. In contrast, private schools might offer more competitive salaries for star teachers and better working conditions, attracting more qualified and experienced professionals. Private institutions have more flexibility to invest in professional development programs for teachers and staff, as well as implement new teaching techniques to improve student performance.

Moreover, school evasion is especially present at public schools. One attempt to lower this metric was to implement the system of continuous progression: students would not fail if they did not achieve the learning outcomes for the year, only if they reached the end of a cycle (e.g. between primary and secondary education). This system receives a lot of critics given that failing students are able to continue with their classes despite being far behind others, and then suddenly realise that they will need to retake classes to get back up to speed. Other academics claim that not failing students is actually better, because if they fail and get behind their original class the chance of evasion grows dramatically, which would be even worse than the possible gain the student would have if they were held behind.

A new program called Pé-de-Meia was setup to incentivise low-income public-school students to finish their studies (38). The program creates a savings account for each high school student and the federal government deposits R\$ 200 every month plus R\$ 1000 at the end of every year. The student must meet minimum attendance and graduate to have access to these funds, which can get up to R\$ 9200 (or U\$ 1650) per student. With this money, graduating students will be able to fund their future endeavours after school and join college, if that is their plan. This initiative is a part of the government effort to

lower inequality and support continuous learning for students, lowering evasion especially during the later years of high school.

Another different aspect of public and private schools is their governance structure, which directly impacts the effectiveness of the administration and accountability. Both types of institution are overseen by the Ministry of Education (MEC) and subject to the same rules and regulations, but public schools are subject to additional layers of bureaucracy and might suffer from political influences at nominating administrators. This extra red tape hinders the schools' ability to respond quickly to local needs and challenges, which further aggravates the problem. Private schools, on the other hand, operate with more autonomy and are directly accountable to parents and regulators, as well as other local stakeholders. This leads to more efficient management practices and enforcement of rigorous performance assessments to ensure a higher learning outcome for its students. This flexibility allows private schools to implement innovations more quickly and adapt their learning program to the demands of the students and the market faster than their public counterparts. The environment is positive and geared towards a culture of accountability and continuous improvement.

Addressing these issues requires a comprehensive approach that includes larger investments in public education, governance structures that minimize corruption and make it harder to embezzle public funding, as well as policies to reduce socioeconomic segregation and allow for a higher degree of class mobility. Only this way, educational targets set by the 2030 SDG can be achieved and Brazilian education will have a positive change for its students. It is paramount that a more equitable education system is up and running and allows for every student to have the opportunity to succeed.

### **3.1.1 Regional disparities**

The distribution of public funds is another problem. The Brazilian government allocates a significant portion of its budget to education, but these funds are unevenly distributed among regions and cities (Table 6). It is not uncommon to see wealthier municipalities with extra support and resources while poorer cities suffer with the lack thereof. This local disparity accentuates the divide between public and private schools and creates zones in which parents are unable to find good public alternatives, being forced to go private. Even when funds are enough, public education is a common target of corruption schemes and fraud (39). Government inspection agencies estimate that from 2003 to 2016 more than R\$ 4 billion were lost due to illegal activities.

Table 6: Education expenditure by state 2022 (per capita, BRL)

| State | Expenditure (BRL) |
|-------|-------------------|
| RO    | 1392.95           |
| AC    | 2493.53           |
| AM    | 2234.82           |
| RR    | 2031.28           |
| PA    | 661.13            |
| AP    | 2145.62           |
| TO    | 1365.89           |
| MA    | 539.58            |
| PI    | 764.95            |
| CE    | 583.07            |
| RN    | 693.88            |
| PB    | 627.95            |
| PE    | 705.22            |
| AL    | 638.62            |
| SE    | 847.76            |
| BA    | 795.04            |
| MG    | 783.59            |
| ES    | 788.35            |
| RJ    | 569.34            |
| SP    | 1169.49           |
| PR    | 1017.35           |
| SC    | 792.66            |
| RS    | 703.35            |
| MS    | 996.20            |
| MT    | 1292.28           |
| GO    | 819.15            |
| DF    | 2155.08           |

It is possible to identify the differences in educational expenditures for every state, with Acre (AC) being the first with almost R\$ 2500 per capita, and Maranhão (MA) the least with only R\$ 583 per capita. These stark differences affect not only school infrastructure but also teacher salaries, creating excellence bubbles in some states while leaving gaps in others.

Even though there is a high overall taxation in Brazil, the way taxes are distributed is unique. Most of the amount collected goes to the federal government, which then redistributes it to the state and municipalities. Local taxes account for only 5% of total, which explain the lack of resources especially in poor regions, where there is very little state income from property taxes. These cities suffer from a chronic lack of resources, sometimes spending more than 100% of their budget with payroll only and not having enough money for maintenance and investments. A new framework of distribution of federal government



resources could be proposed to guarantee a minimum level of investment in education for every one of the municipalities.

### 3.1.2 Teacher shortage

The teaching career is losing its attractiveness every year. In 2024, there has been a national teacher strike that lasted more than 60 days, in which teachers claimed for better work conditions and salary increases given they had not received salary adjustments for years (40). Teachers in Brazil have a starting salary of less than 50% of OECD average, and they make only 78% of the expected income for someone with the same educational background (41).

Teaching degrees (licenciaturas) are becoming predominantly remote over the last decade, going from 28% in 2012 to 60% in 2022 (Table 7)(9). This is double the average of 30% for all courses. Furthermore, distance learning students have lower performance in national higher education exams such as ENADE, scoring only 86% of their in presence counterparts in 2021 (42), evidencing the lower quality of teaching in these courses.

| Year | Teaching courses | All courses |
|------|------------------|-------------|
| 2012 | 28.2%            | 9.2%        |
| 2016 | 33.4%            | 14.6%       |
| 2019 | 49.7%            | 17.9%       |
| 2022 | 60.2%            | 30.3%       |

Table 7: Evolution of share of remote teaching courses

This situation creates a pervasive cycle that perpetuates inequalities in disadvantaged regions, where 70% of school staff identify as common the fact that teachers have to give classes for which they are not qualified to do, and 60% relate that teacher absence at work is a significant issue (43).

In fact, only 60% of teaching roles in basic education are filled with professionals that are qualified in that specific area of knowledge (9). The lack of adherence to the teacher's national minimum wage in some municipalities due to budget restrictions further complicates the attractiveness of the profession, as well as the prevalence of hiring teachers with short-term contracts instead of full-time employees with benefits. The reduced number of interested applicants, especially for positions with low amount of classes in the same school, causes the shortage of qualified professionals.

## 3.2 Infrastructure

A critical factor that affects the quality of education is school infrastructure. Public schools are particularly susceptible to disparities in access to basic necessities such as electricity, drinkable water and adequate sanitation facilities. These discrepancies are aggravated when considering public schools in rural areas, which are often under served in terms of educational facilities.

Infrastructure is the focal point of the SDG target 4.a, which considers if the school infrastructure is accessible to students that have mobility issues. The columns from the dataset (Table 8) that are more relevant to our analysis are the number of accessible bathrooms, ramp availability and presence of special rooms.

| <b>Metric</b>       | <b>Description</b>                                 |
|---------------------|--|
| PNE bathrooms       | Presence of bathrooms accessible by wheelchairs    |
| Accessibility ramps | Presence of ramps for people with reduced mobility |
| Special room        | Presence of rooms for Special Education.           |

Table 8: Accessibility metrics for schools

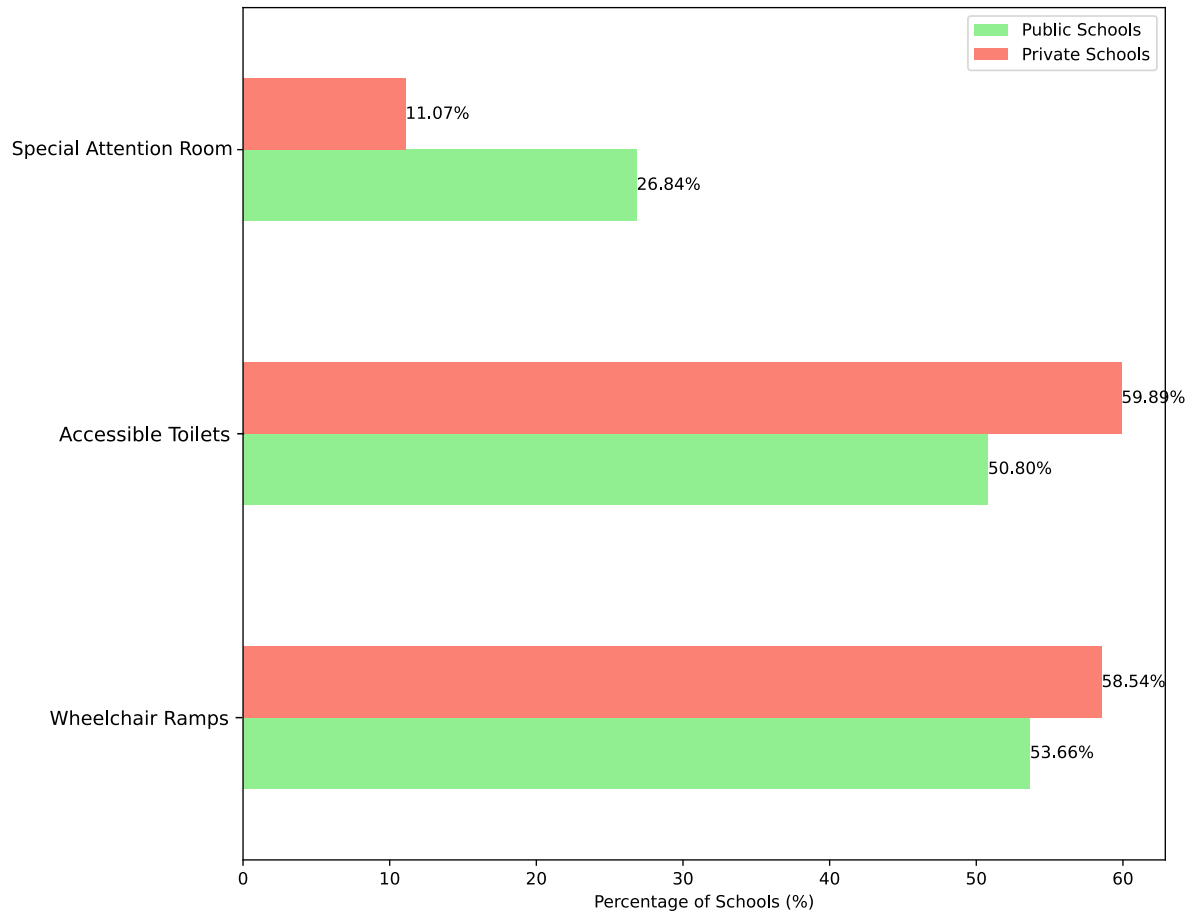
The results, unfortunately, are not surprising. In Figure 9 it is possible to see that less than 60% of schools have accessible toilets or wheelchair ramps. Even at private schools these numbers are not much better, with only an to 10% advantage in accessibility metrics when comparing to public schools.

Given these alarming numbers, it is not difficult to understand the issues that wheelchair users face to continue schooling. These poor infrastructure conditions might contribute to the evasion of students with disabilities in higher number than average. Even the most basic rights are not available to these students, and the levels of service are far away from the mandated minimum. Brazil is not on track to achieve SDG goal 4.a in a satisfactory way.

When considering Special Education Rooms, public schools are ahead of their private counterparts, but even if the infrastructure exists, that does not mean these rooms are actually being used for special education, nor that there are enough teachers to serve students in need. The majority of teachers report that there is a profound lack of resources and training towards special needs education (44). Non-Governmental Organizations (NGOs) such as APAE try to fill the gap created by government services. These organizations offer educational and health services for people with intellectual disabilities.

Second, let's analyze school infrastructure data. Five different indicators will be

Figure 9: Accessibility requirements in schools



considered (Table 9).

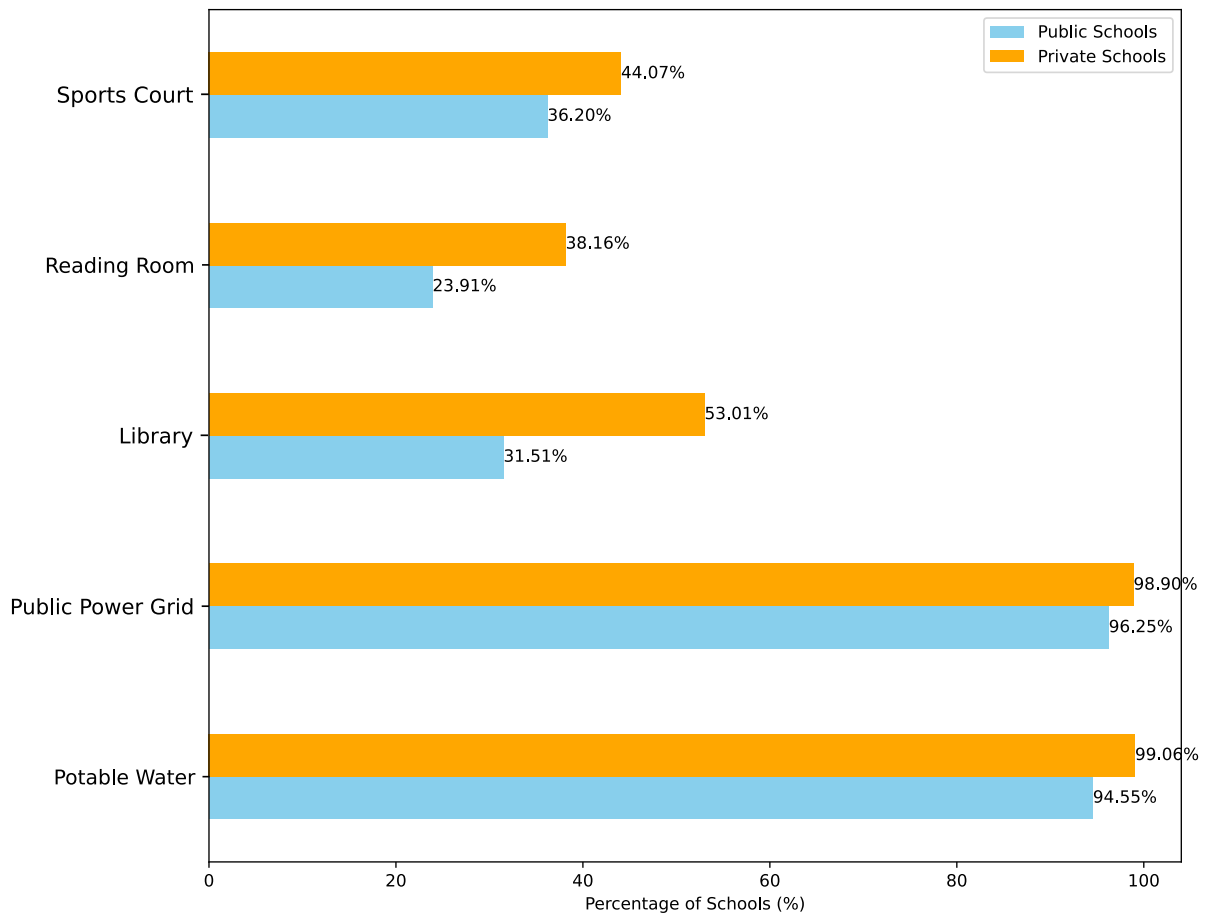
| Indicator     | Description                          |
|---------------|--------------------------------------|
| Potable water | The school offers drinkable water    |
| Power         | The school offers power and lighting |
| Library       | The school offers library services   |
| Reading Room  | The school offers reading rooms      |
| Sports court  | The school offers a sports court     |

Table 9: Infrastructure metrics for schools

The first two indicators serve as a reminder that sometimes even very basic services are not being provided due to lack of resources in some regions. It is sad that access to electricity and drinkable water are not universal in 2024. Unfortunately, there are still about 5% of schools without these basic conditions (Figure 10).

When considering other essential infrastructure services such as a library, reading room and sports court, there are even less schools that provide access to these services.

Figure 10: Infrastructure quality level by school type

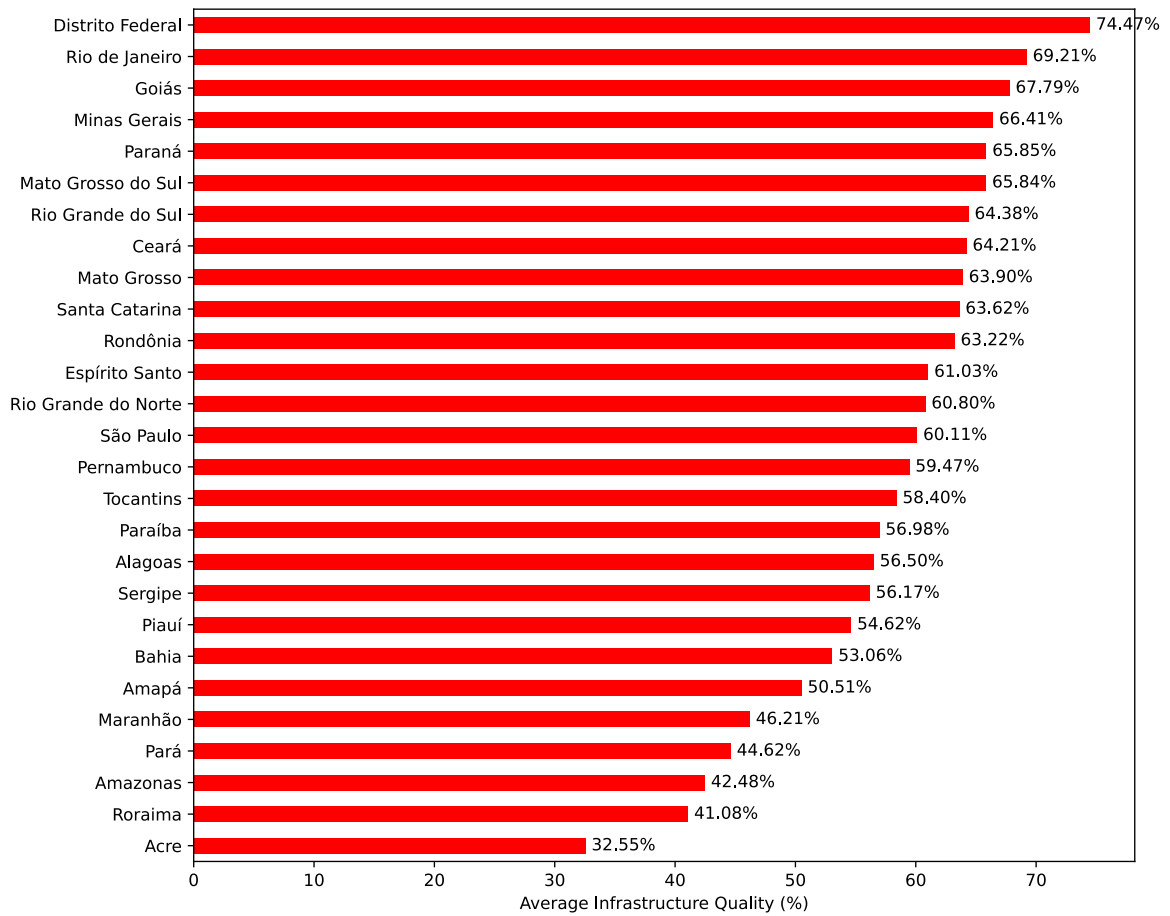


Private schools are ahead by a larger margin (over 20% in case of libraries), but still do not reach 60% of coverage. How can Brazil expect to win any medals in the Olympics if less than 40% of its schools has a sports court? This stark reality is often depressing.

Given the inequality that is present in Brazil, it is also interesting to analyze the different levels of infrastructure in each of the states of the federation. To more clearly identify the level of services in each state, an average of the frequency of the five metrics is reached by multiplying their results, which is then calculated by each state. (Figure 11)

The Brazilian states that have the least infrastructure in their schools are Acre, Roraima, Amazonas, Pará and Maranhão. These states are all in the North and North-eastern regions, which are known for their weaker economies and shortage of government resources. It is not surprising to see that most of the schools there have no sports court, reading room nor library, and a great deal of the population does not have access to basic services such as potable water and power.

Figure 11: Infrastructure quality level by state (public and private)

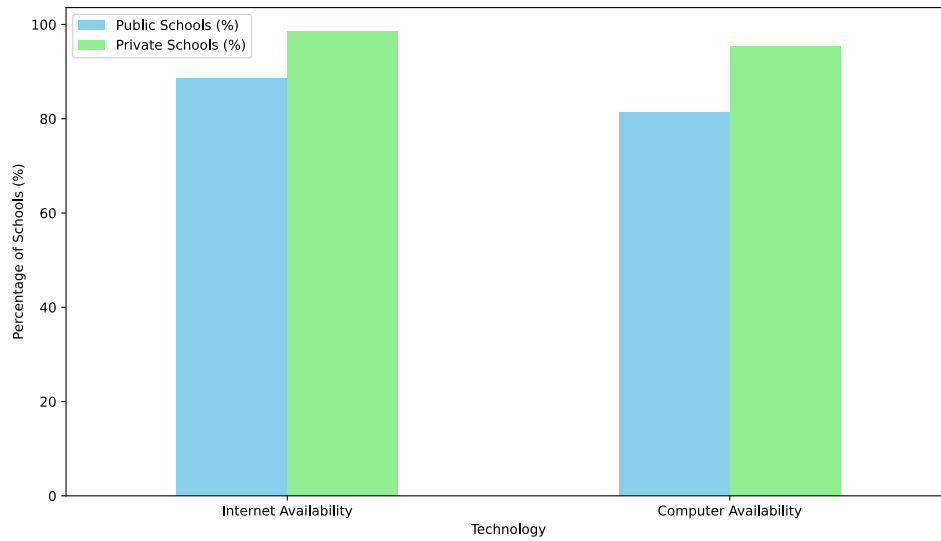


This dichotomy reflects the inequality that is present in Brazil, a country that is still unable to offer good quality education to all of its citizens. Basic human rights are being neglected, going completely against goal 4.2 of 2030 SDGs, which state that all children should have access to quality care and education.

In today's world it is necessary that children are capable of using technology tools to be prepared for the workforce. SDG target 4.4 covers this aspect by considering the availability of technology in schools. Figure 12 shows technology availability data divided by school type, if they are public or private. The results are similar, with a small gap of 10-15% between public and private regarding internet access and the presence of computers at school. At least there is good coverage, even if not universal, regarding internet access in schools.

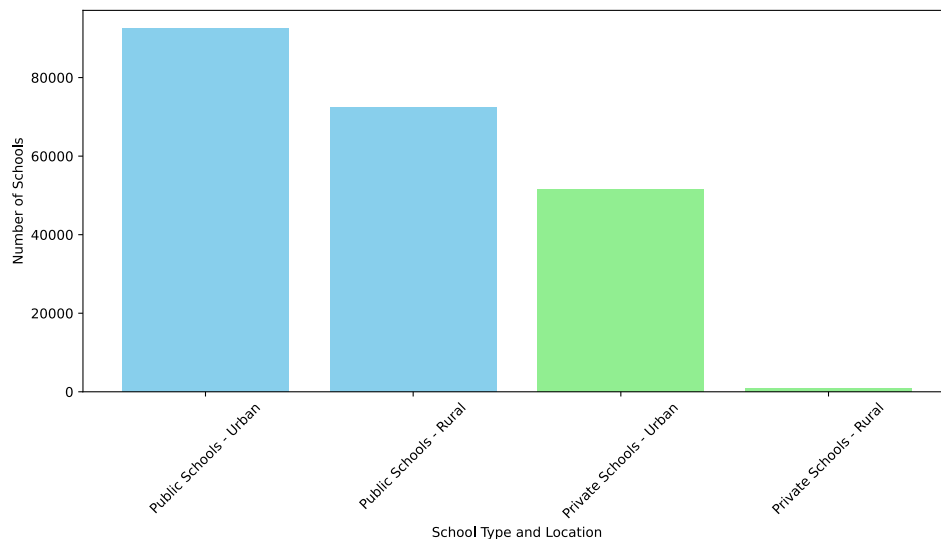
A good point of view to understand better if the inequalities in resources and infrastructure are concentrated in cities or not is to view the spatial distribution of schools (Figure 13). We can clearly see that there are almost no private schools in rural areas. In

Figure 12: Technology availability in schools by type



that sense, are children in rural areas poorer than children in urban areas? Are parents in rural areas less willing to pay for private schools? Do the majority of teachers and administrators live in urban areas and they prefer to walk to work? Or is the Brazilian transportation network inefficient and hard to reach, especially in rural areas? These are all relevant questions whose answer might explain the lack of private schools in rural areas.

Figure 13: Distribution of schools by location and by type

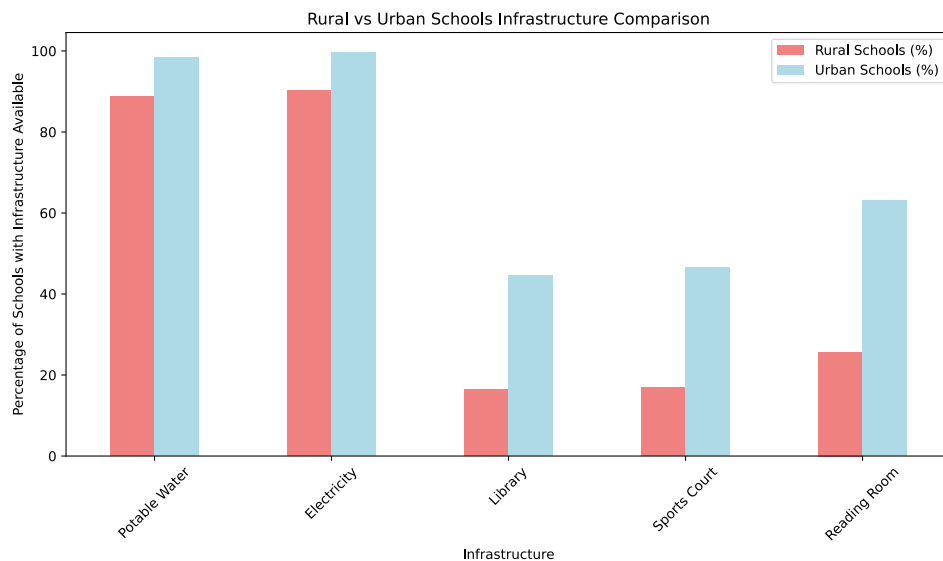


In Figure 14 we can identify the infrastructure gaps between urban and rural schools. Unfortunately, rural schools are behind urban schools in all aspects, even when considering that rural areas land is cheaper and thus, the average school has more space to build a

sport court. Library and reading rooms also fall behind by more than two times less the frequency in rural areas. The only areas in which there is a lower difference are electricity and drinkable water, but even those have about a 10% gap between rural and urban schools. In general urban schools have worse infrastructure than their urban counterparts.

This reality is not present only in Brazil. It is common for rural areas to be underdeveloped in relation to their urban counterparts, and average income in rural areas to be lower (45), especially in countries where agrarian reforms were not implemented. With the advancements of technology, now it is finally possible to have internet access in remote areas through satellite signals at a fair price. These changes will take time, but they can be rather positive towards the improvement of education for rural students and families, given that they will have access to study materials in their smartphones and laptops, if they have these resources.

Figure 14: Availability of school infrastructure by location



### 3.3 Violence

Violence reports in schools were up 50% in 2023 (46). Teachers report the feeling of helpless, given that they cannot act upon these issues without fear of retaliation. The consumption and sale of drugs in schools, especially by teenagers (47), further complicate the security problems that students face.

The majority of students reported suffering from any type of violence during their school years (48). Physical violence is more common in primary school, while psychological

violence such as bullying or discrimination is more common when students are older.

Public institutions, which serve primarily lower-income families, suffer from gang and drug-related violence at higher rates than private schools. The type of violence also changes from each school type, with psychological violence being the most frequent in private schools. This segregation among school types further reinforces social stratification and limits social mobility, given that it continues poverty cycles and ‘brands’ students with a negative stigma.

The presence of violence affects teacher health and relationship with students. The stress generated by the lack of security can make teachers less engaged to do their jobs (49) and further exacerbate the problem of staff shortages in lower-income regions.

There is a conflict of rights, given that students need to have an education, but teachers and school staff also have the right to feel safe in their work environment. Generally, private schools deal with extreme cases of violence by expelling the student from the institution, while public schools do not have that prerogative. Even if a student reaches a point of unsustainable behaviour, public schools have to conduct a thorough examination with defense rights and at most, recommend the transference to a different public institution.

### 3.4 Student conclusion rates

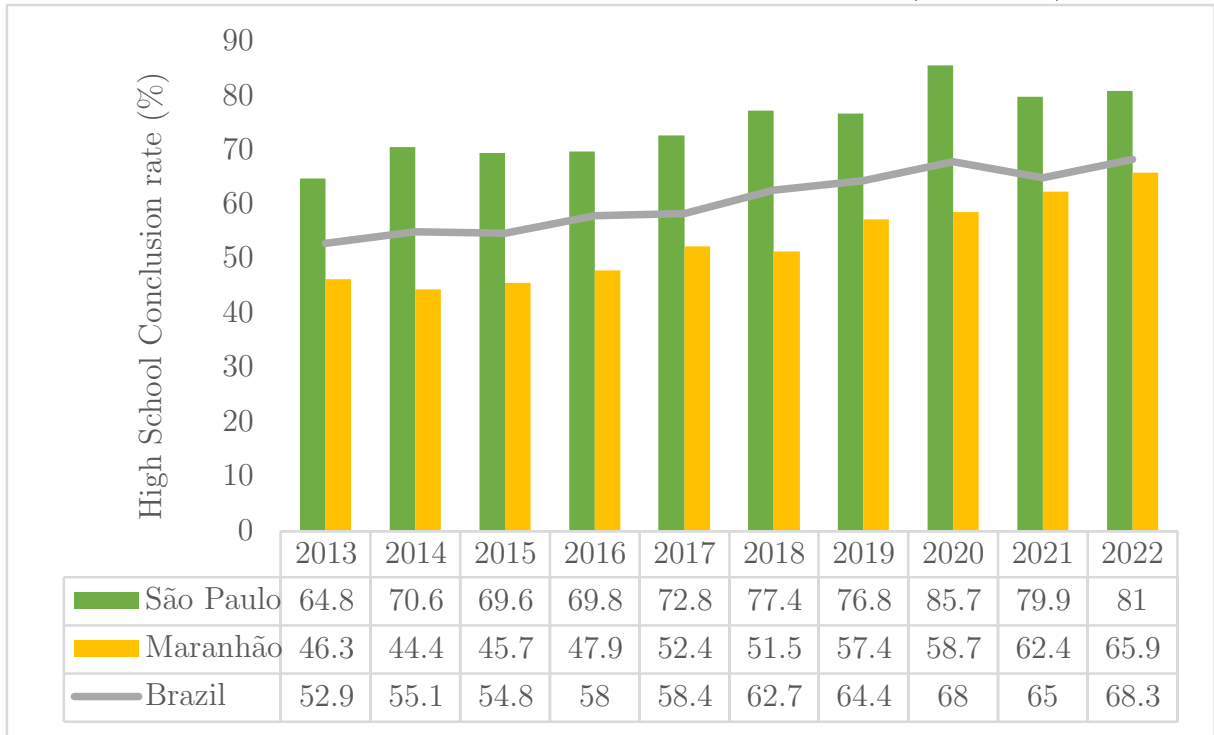
Ideally, students should stay in school until they graduate. This indicator is tied to dropout rates, which are more frequent during high school. It is also interesting to compare if this statistic changes considering two different Brazilian states, both São Paulo and Maranhão, with polar opposite income levels. Let’s consider the evolution of this data to check if these indicators are improving or not over the last decade.

In Figure 15 it is possible to see the statistics for conclusion rate in each state and the evolution over the years.

There is evidence that the high school conclusion rates are improving in both states. Maranhão went from having only 46.3% of its students graduating in 2013 to 66% in 2022. It is still far away from perfect, given that over a third of students drop out before high school is over, but at least is evolving in the right direction. São Paulo is also improving in that aspect, going from a conclusion rate of 65% in 2013 to over 81% in 2022, which is much better, but still below OECD countries average. A difference of 16% in conclusion rates means that an extra 288 thousand students are graduating every year



Figure 15: Comparison of high school conclusion rates (SP &amp; MA)



in São Paulo, considering that there is about 1.8 million high school enrolments every year in the state.

Again, we are reminded that Brazil is an extremely unequal country. A 16% difference in high school graduation rate is immense, especially considering that most of these students drop out due to having to help family at work, to pregnancy or other external factors. These adverse conditions explain why the HDI varies so much between regions in Brazil, following less fortunate municipalities that have fewer economic resources to spend on education.

## 4 FUTURE IMPLICATIONS

### 4.1 2030 Agenda for Social Development

The 2030 Sustainable Development Goals were defined by the United Nations in 2015 to serve as a target that countries could strive to become in 2030. From a total of 17 goals, Brazil still needs to continue working on many of them to achieve the set outcomes. In this chapter we will analyse how Brazil is doing regarding goal 4 “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. To achieve this objective, we will take a look at two different databases: the Brazilian School Census 2023 from INEP and the National High School Exam 2023, and then compare the findings with qualitative information obtained through research and analysis of journals and articles about education.

#### 4.1.1 Education goals

The educational goal suggested by SDG is broken down into ten different targets (Table 10). Each target has a subset of indicators that allows for regulators and policymakers to quantify how close they are to reaching the target. These indicators provide tangible ways to measure the statements from the targets, but to transform them from wishes into actionable provisions is still the task to each country.

#### 4.1.2 Progress

Now it is time to consider a dataset comprising of the results of the last National High School Assessment (ENEM) in 2023. We will continue the study between urban and rural schools to see if we can get more insights on the topic. In Figure 16 it is possible to identify that there is a gap in performance between urban and rural schools, especially in writing, which can get up to a 7% difference in score. To better understand the scores, the data was normalized, given that scoring for this exam is non linear and not every

| Target | Description   |
|--------|---|
| 4.1    | Ensure all girls and boys complete free, equitable, and quality primary and secondary education.                      |
| 4.2    | Ensure all girls and boys have access to quality early childhood development, care, and pre-primary education.        |
| 4.3    | Ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education.    |
| 4.4    | Increase the number of youth and adults who have relevant skills for employment, decent jobs, and entrepreneurship.   |
| 4.5    | Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training. |
| 4.6    | Ensure that all youth and a substantial proportion of adults achieve literacy and numeracy.                           |
| 4.7    | Ensure that all learners acquire knowledge and skills needed to promote sustainable development.                      |
| 4.a    | Build and upgrade education facilities that are child, disability, and gender-sensitive.                              |
| 4.b    | Expand the number of scholarships available to developing countries.  |
| 4.c    | Increase the supply of qualified teachers through international cooperation.  |

Table 10: SDG Goal 4 Summary of Targets

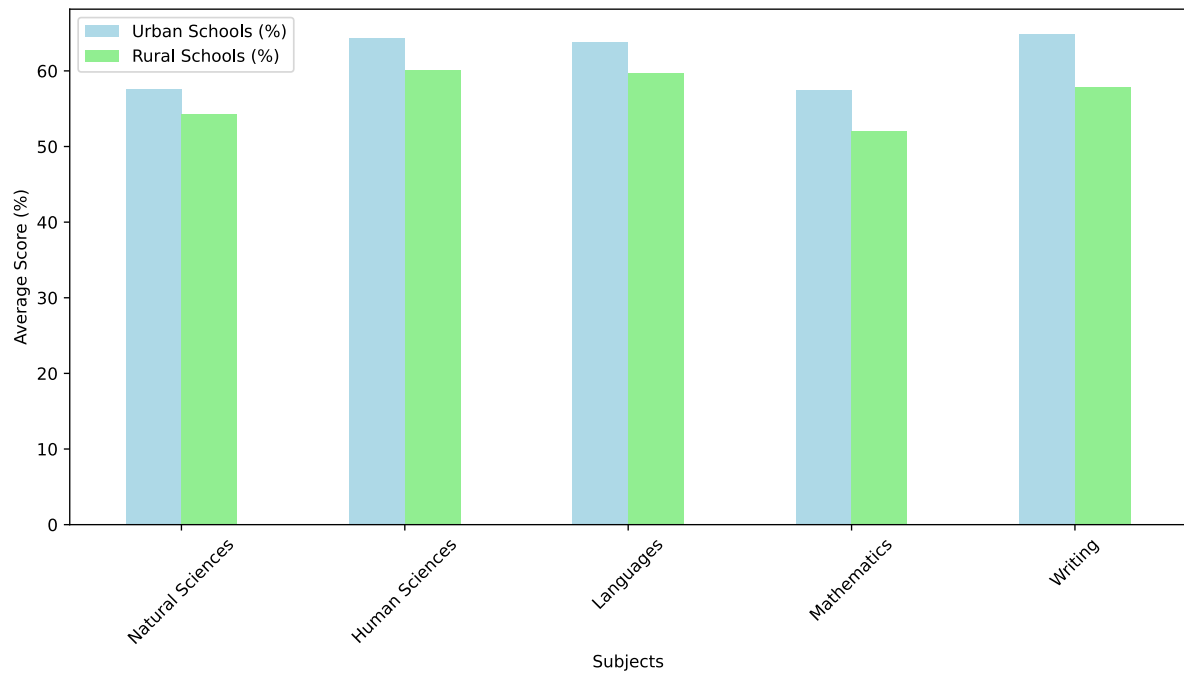
subject has the same maximum nor minimum scores.

To better understand what is causing the difference between rural and urban schools, we can check the performance between private and public schools. We have seen before that rural schools are predominantly public. If there is a significant difference in results between school types, that might explain part of the gap which was identified.

The results show that there is also a gap in exam performance between public and private school students (Figure 17). This difference is especially larger in the writing subject, where students with private school background outperform public school students by 17%. Other disciplines have smaller gaps that range from 7-13%, being the second largest the gap in the Mathematics section of the exam.

It is not good to identify such a difference between school types, because it means that children of lower socioeconomic background parents might have difficulties at accessing higher education, given that the results of the ENEM national assessment are used to rank students so that they can pick and choose higher education courses.

Figure 16: School performance in 2023 National Assessment (ENEM) by location



In fact, some students focus completely on studying for this exam during high school given its importance. It is not uncommon to have students waiting one or two years after high school to retake the entrance exam and have more chances to access better universities.

The distribution of scores for the Mathematics subject can be seen in Figure 18. To give a point of comparison, the lowest score anyone can have is zero, and the max was 956.8 in 2023. The exam uses a normalization technique to improve student grade if he gets difficult correctly while minimizing the effect of guessing. That is the reason why the grades are different for each subject. To be accepted for an engineering degree at University of São Paulo, a regular student would need to get a weighted average of 814 in 2023, which would put them on the top 1% threshold of students.

It is interesting to look at this data because it is a snapshot in time of the average student's performance. After considering the demographic data in the first step of our analysis, now we can double check if a lack of infrastructure or a higher presence of public schools in a state contribute to its results in national assessments. In Figure 19 it is possible to visualize that states with lower than average income do tend to have lower scores in ENEM, but even though the infrastructure quality varies immensely from one state to the other, the results have a much lower variance.

Figure 17: School performance in 2023 National Assessment (ENEM) by type of school

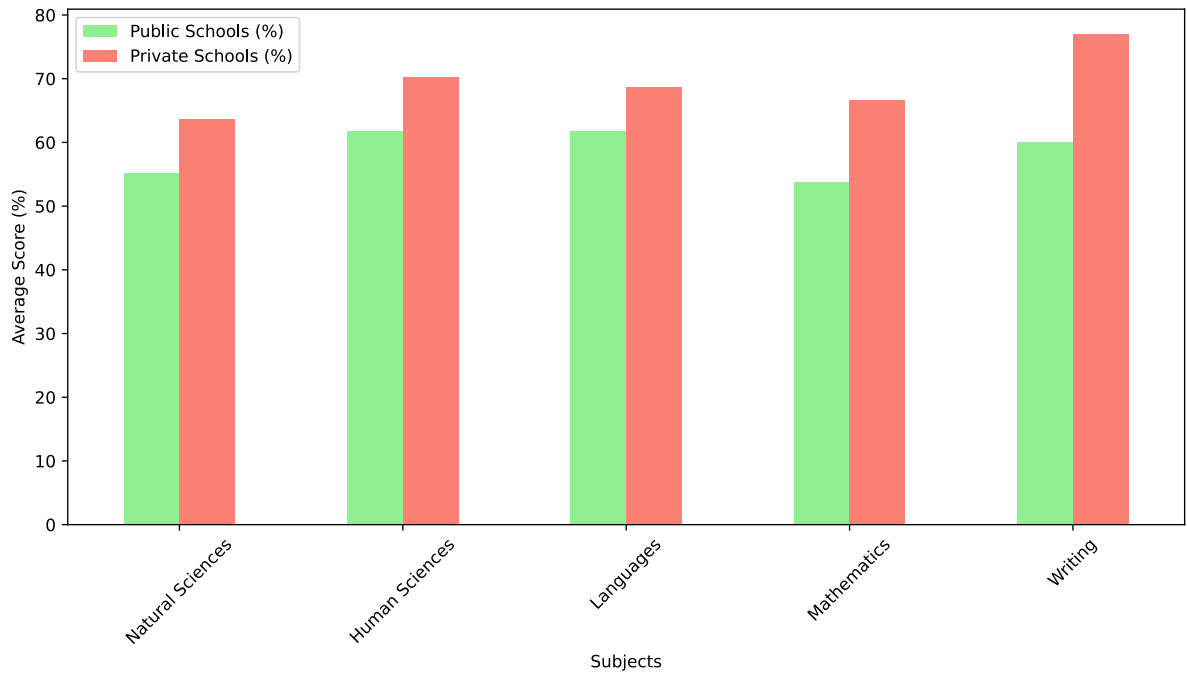
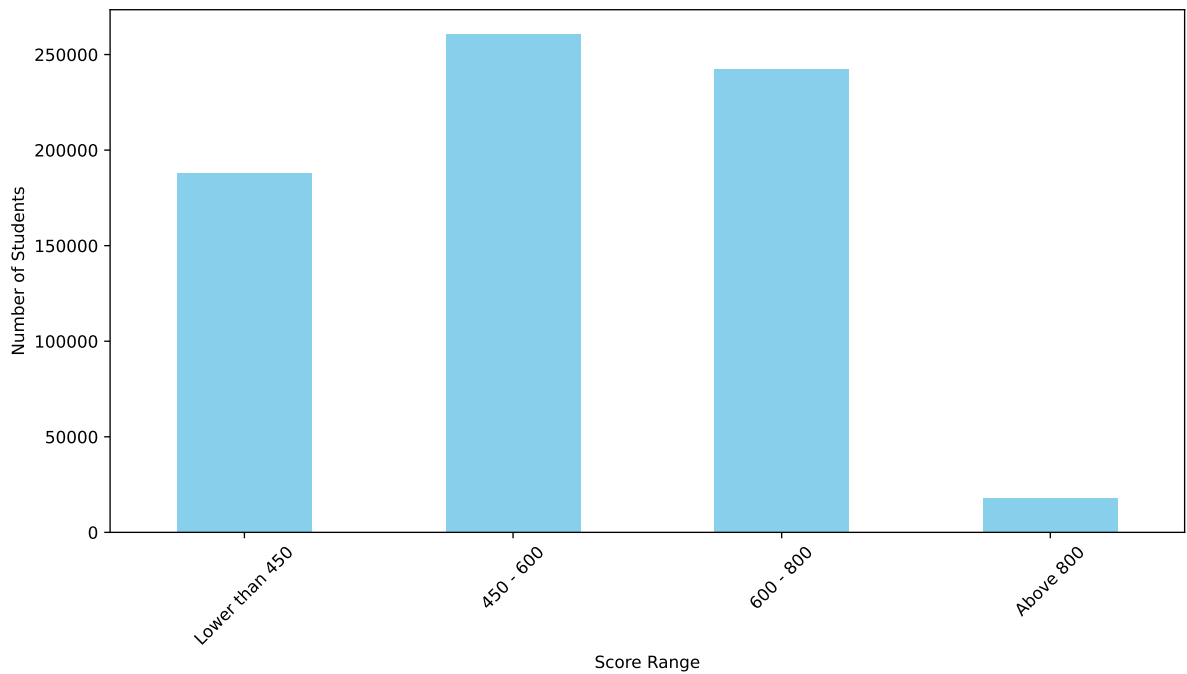


Figure 18: Mathematics performance distribution in 2023 National Assessment (ENEM)

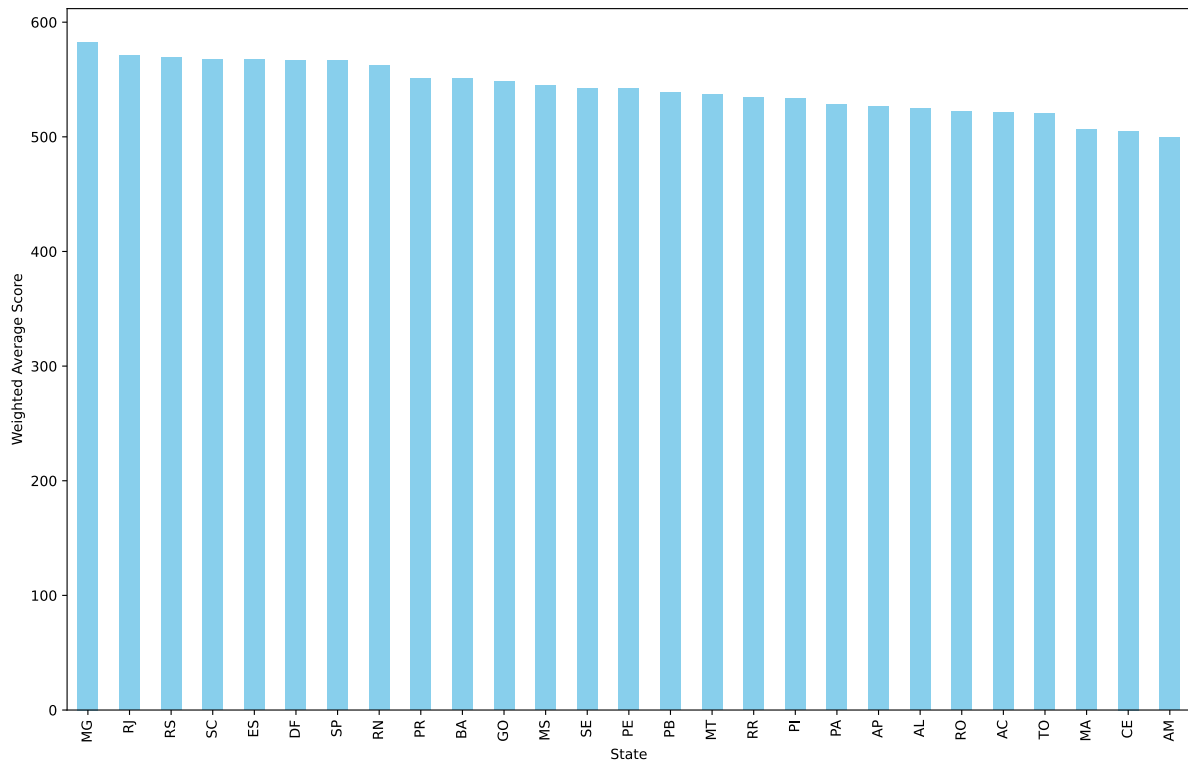


One hypothesis for this result is that students who lack infrastructure the most tend to drop out much before the end of high school and they do not have the necessary resources

to study for the university entrance exam (ENEM). Let's hope that government policies such as Pé-de-Meia could nudge students towards finishing high school and give them incentives to continue their studies through higher education.

Considering the data from both datasets, it is possible to identify that Brazil is not on track to meet the 2030 SDG educational goals. A considerable amount of students are lacking basic infrastructure and school access. Even worse are data from an accessibility standpoint. Brazil needs to figure out a way to improve the efficiency of its policies and make changes to its education resource allocation towards fixing these inequalities.

Figure 19: Overall performance distribution in 2023 National Assessment (ENEM) by state



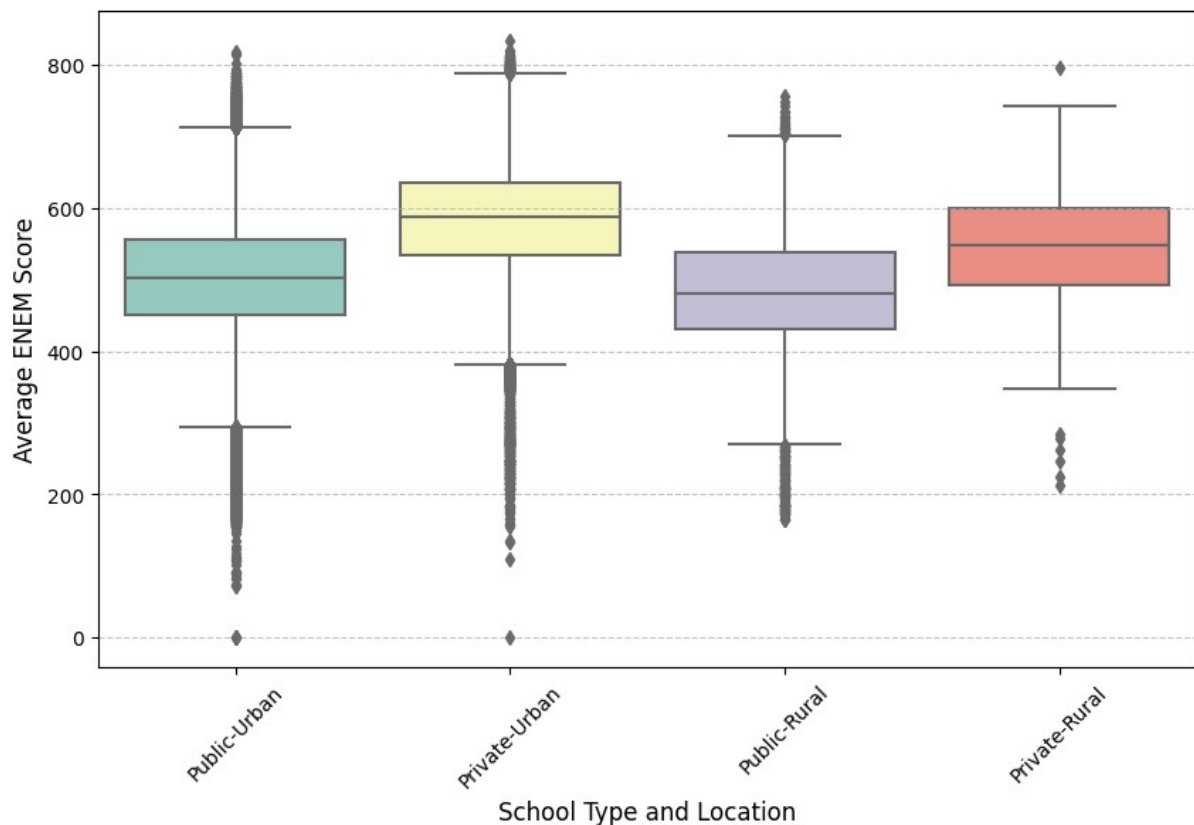
To better understand and investigate the impact of school type (public vs private) and location (urban vs rural) on student performance at ENEM, a regression analysis technique was employed to assess the significance of these factors. This way, it is possible to go beyond the mere qualitative analysis.

Around 700 thousand student records from the 2023 edition of the exam were used to calculate the average ENEM score of each test taker. For this calculation the mean score between the four areas of the exam was considered, being them Natural Sciences, Human Sciences, Languages and Mathematics. Two independent variables were selected,

respectively school type and location, to run a multiple linear regression model with the purpose to estimate the relationship between these variables and ENEM performance.

The regression results indicate that both school type and location do affect ENEM scores (Figure 20). The R-squared value of the model is .19, suggesting that 19% of the variance in scores is explained by the school type and location. The coefficient for school type is -80 (with a p lower than 0.001), indicating that students in public schools score approximately 80 points lower than those in private schools, on average, holding other factors constant. Location also affects the scoring, with a coefficient of -18 (p lower than 0.001). These results confirm the hypothesis and the aggregated data referenced before that public and rural schools are associated with lower ENEM scores.

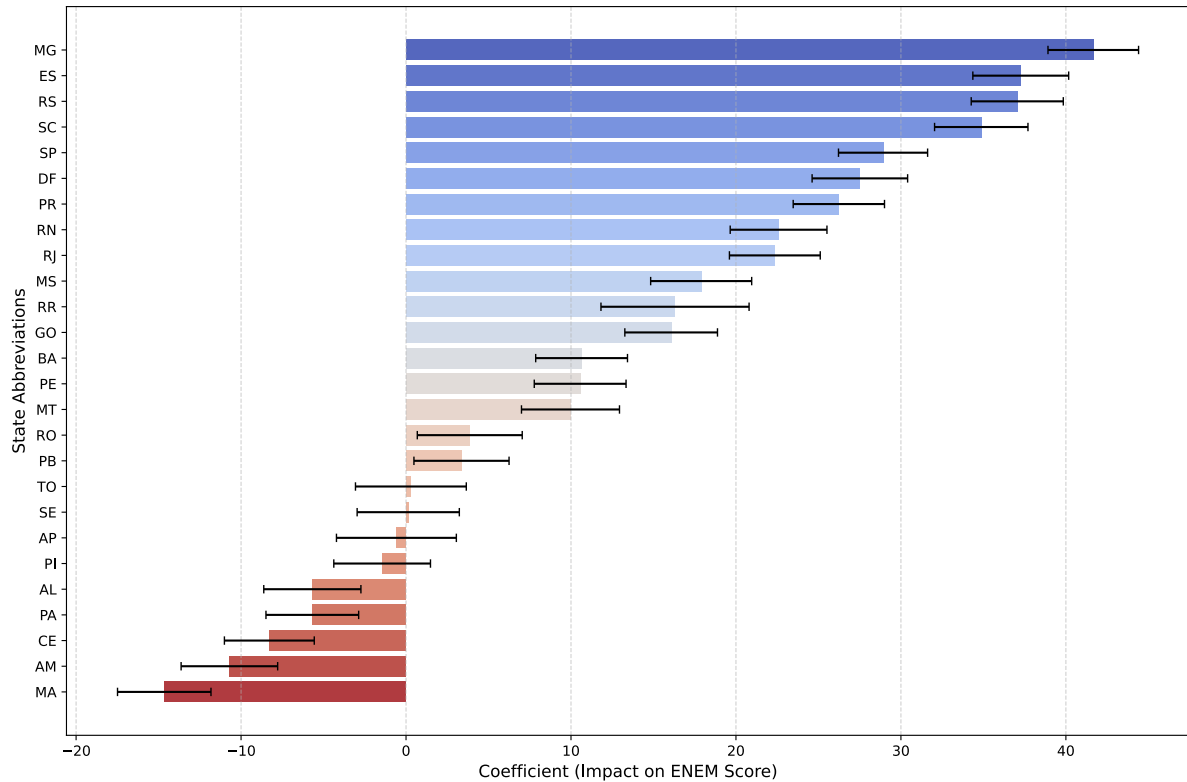
Figure 20: Impact of School Type and Location on Average ENEM Scores



Existing literature is aligned with the findings from the regression, which show consistent disparities in educational outcomes between schools depending on their type and location (Figures 21 and 22). As mentioned in the Main Issues chapter, the significant negative association between public school attendance and ENEM scores does reflect the current resource constraints and lack of infrastructure.

Likewise, the lower performance observed in rural areas can be attributed to geo-

Figure 21: Impact of student origin state on average ENEM scores



graphical challenges that limit access to quality educational resources, as well as a preponderance of public institutions in remote locations given the low expected economic return of providing these services for private institutions.

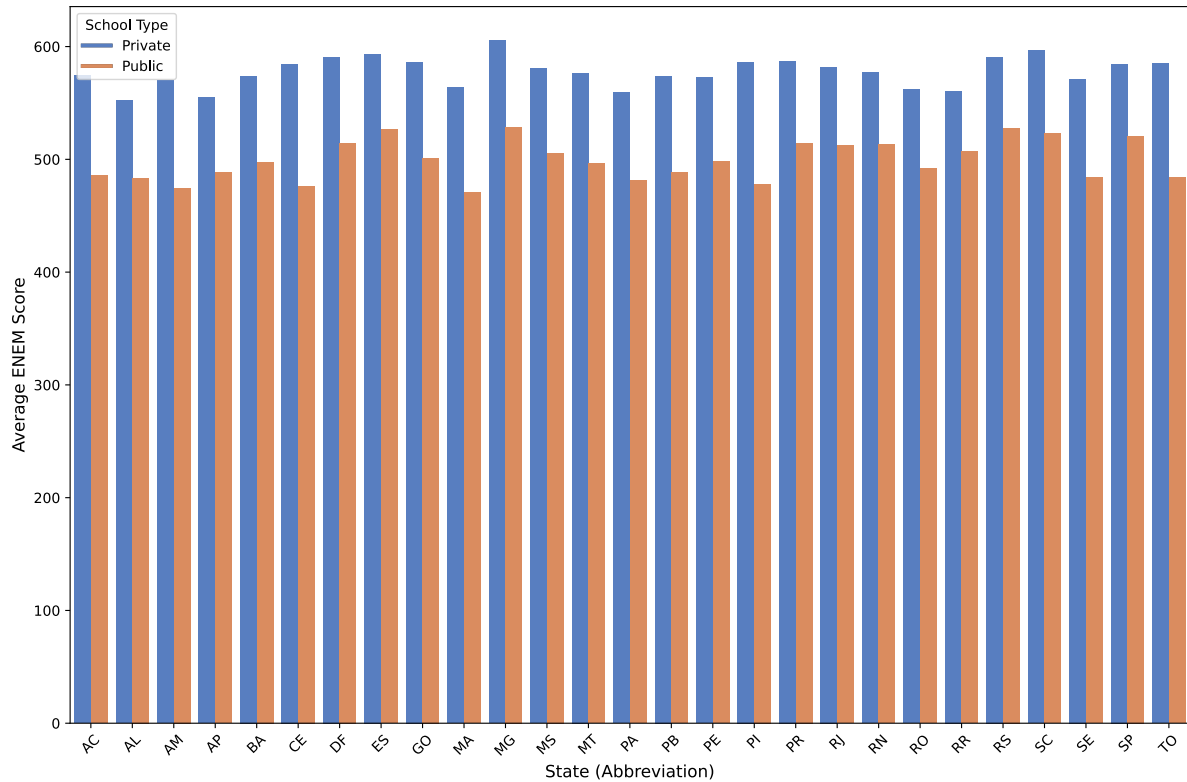
The results obtained highlight the importance of targeted interventions in undeserved schools to address these disparities and enhance academic performance of the students, lowering overall inequality.

Due to limitations in the number of variables in the dataset, important information was unobserved that could greatly influence ENEM scores such as household income and family structure. When looking at the literature on this topic, family income bracket is a good predictor of performance in standard exams. OECD 2022 PISA data indicate that the top 20% students in terms of socioeconomic status score on average over 100 points higher than the bottom 20% in the PISA assessment.

Future research could incorporate these variables to enhance the model's explanatory power. Moreover, the exploration of the effects of school type and other demographic factors could provide a deeper understanding of the challenges faced by students in public and rural schools.



Figure 22: Public vs. Private School performance by state



## 4.2 Growth and innovation opportunities

Significant investments in the Brazilian private educational sector were made in recent years, aligning with a broader trend across Latin America that private sector growth is outpacing its public counterpart.

Some key factors influence this shift in strategy, being the most relevant the clear lack of quality in public education and a rising demand for bilingual schools from the middle class. Income growth of the upper-middle-class population, going from 15 to 30% of the population in recent decades, as well as an increased affordability of tuition when comparing to international schools.

Historically, international schools were restricted to a very affluent segment of the population, given their average yearly tuition of 15,000 USD. Bilingual schools offer access to English language instruction while charging only half of the tuition, becoming a viable alternative for a higher percentage of the populations.

There are challenges for the continuous growth of the segment, represented by limitations in qualified teachers and high cost of capital to deploy new operations. New

technologies are being developed to improve learning systems and reduce dependence on individual teacher performance for achieving learning outcomes. Recorded classes and teacher training support help school administrators to reshape their pedagogical approach with fewer resources.

STEM education is also a source of differentiation for private providers, given that there is regulatory support to offer extra classes beyond the common curriculum. Some schools have integrated robotics and programming classes to boost student engagement and encourage innovation.

However, infrastructure issues such as the lack of access to computers and poor internet connectivity still hinder broader adoption of these new tools, especially in the public sector that faces a resources shortage. The lower school size when comparing with international counterparts such as the UK or China also contributes for a reduced economy of scale when applying new program changes.

Even though there has been a recent consolidation of the segment, especially when considering private higher education, the vast majority of primary and schools are individually operated. Under 5% of enrollments fall within organized networks with more than one institution.

Online platforms for higher education are already becoming the majority of enrollments, bridging gaps in educational resources and providing access to high-quality content regardless of geographic location. This can help address inequities that marginalized communities face and provide more inclusive school environments, enabling these students to pursue higher education.

A greater recognition and appreciation of the teacher career is necessary to encourage these educators to invest in training to integrate their new technologies into current workflows and attract new professionals. Continuous professional development programs are essential to effectively leverage digital tools and learning resources into the classrooms.

Brazil, along with other developing countries, suffer from a severe skill shortage which impacts its economic competitiveness and productivity. While most of the market is focused on standard education, there are also growth and innovation opportunities in technical and vocational training. Technology changes create a critical need for skills-based education to prepare students and workers for high-demand professions in STEM and healthcare areas. The development of specialized training programs can support Brazil's economic growth and provide possible career pathways for young people.

Moreover, a higher government focus on education should be required to improve educational outcomes, given the research and development of these innovations require significant investment. Ensuring the financial sustainability and educational initiatives support is key to guarantee a future growth in the sector.

A targeted increase in federal funding could address these systemic issues by enabling investments in teacher training and modernizing school facilities. The government should make sure that students across all regions, regardless of socioeconomic status, have access to a quality learning environment.

Enhancing federal funding for public schools also aligns with Brazil's broader goals of reducing educational inequality and fostering economic development. Such an approach could also promote social mobility by improving academic outcomes, ensuring that all Brazilian students have the opportunity to achieve their potential and contribute to the nation's growth.

## 5 CONCLUSION

This thesis provided a comprehensive analysis of the private education market in Brazil and its origins. Through an established process of quantitative and qualitative data, it was possible to reveal significant insights on how the sector developed over the years and what government policies were the most impactful. The demand for private schools in Brazil continues to grow to satisfy the latent need for high-quality education, driven by rising average income. However, there are still challenges to achieve international quality standards and ensure equitable access to education for a wider range of students.

Brazil's socioeconomic disparities are especially present in the education market, and these issues end up propagating ahead to a point in which students reach working age unprepared to join the workforce. This situation intensifies social mobility problems and contributes to the well-known Brazilian social ladder's 'sticky floor'. Future governments have the responsibility to pave a better pathway for students to develop relevant skills for employment and social mobility.

Private institutions generally outperform public schools on standardized tests and other educational indicators, with regional disparities and school type significantly influencing these outcomes. There is a lack of service, particularly in rural and underserved areas, where public schools are often the only available option. Moreover, the resource gap in infrastructure between public and private schools is substantial, which indicates the continuous need for private schools to fulfill the demand for high-quality education generated by government failure.

In conclusion, this thesis offers a comprehensive view of the private education sector in Brazil, highlighting both its contributions and its limitations. While private education plays a crucial role in the country's educational system, it is clear that challenges related to access and quality must be addressed to ensure equity among its students.

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