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Determinants Of Baccalaureate Failure: The Case Of Students In The "S2" Stream

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Abstract: In Senegal, school failure remains a worrying reality, as shown by the high level of school attrition despite the administrative measures put in place to limit it. According to DPRE statistics (2022), the dropout rate stands at 10.3% in elementary education, 6.8% in lower secondary education and 8% in upper secondary education. In addition, completion rates are 65.1% in elementary, 41.9% in lower secondary and 28.3% in upper secondary education. Thus, out of 100 pupils enrolled in the introductory course (CI), only 65 reach sixth grade, 42 reach the second year of upper secondary (seconde) and 26 continue on to higher education.

In this context, the present study examines the 2024 baccalaureate results of S2-stream candidates in the Pikine-Guédiawaye Academy, Senegal, using a database of 5,198 registered candidates. The analysis relies on descriptive statistics, cross-tabulations and graphical representations. Of the 5,198 registered candidates, 5,090 were present and 108 were absent. Of the 5,090 candidates present, 3,071 passed and 2,019 were failed (ajournés), a pass rate of 60.3% and a failure rate of 39.7%. The results describe differences between groups of candidates but, given the descriptive nature of the analysis, they cannot on their own establish causal relationships or identify independent determinants of failure.

This study thus aims to better understand the characteristics and factors associated with success or failure among S2-stream candidates in the baccalaureate in Senegal.

Keywords: baccalaureate; S2 stream; school failure; school success; Senegal; grade; Excel; SPSS.

1) Context

The economic and scientific evolution of humanity is progressively establishing the 21st century as that of the emergence of the knowledge economy. This economy is based on the predominance of knowledge as the driving productive force in the socio-economic development of nations. This new trend in economic evolution opens promising prospects for underdeveloped countries with limited natural resources such as ours.

Hence, more than in the past, Education, for a country that aspires to emergence, is a strategic sector that requires the particular attention of everyone.

This is undoubtedly what Senegal's successive governments have understood by allocating to it a significant share of the operating budget. From Léopold Sédar SENGHOR to Macky SALL, by way of Abdou DIOUF and Abdoulaye WADE, the announced budget allocations have varied from 33% to more than 40%.

However, despite these massive and judicious investment efforts in education and training to build a critical mass of high-quality human resources, it must be noted that more than half a century after independence, our education system is still confronted with serious performance crises. Neither the questions related to access, still less those related to the quality of education, have yet been resolved.

Our School is therefore ill-suited, because it meets neither the needs and expectations of the population (sometimes the object of rejection) nor the imperatives of the country's economic and social development.

Worse still, the Senegalese school has faced recurrent and multiple crises since the 1970s, crises which, intensifying from 2000 onwards, have considerably affected the quality of teaching and learning. The Senegalese school has thus entered a zone of turbulence from which it struggles to extricate itself. Barely a month goes by without it experiencing disruptions due to strike movements. Several hypotheses could explain this situation.

[Note: the original sentence beginning here is garbled — it opens with a stray "É,".] After more than 15 years of a public policy of Education Volunteers and Part-Time Teachers (Vacataires), based on patronage in recruitment and on very cut-rate initial training, sometimes non-existent, our education system will long continue to bear the disastrous effects of this governmental laxity in terms of quality.

Hence the importance of our study, which aims to determine the factors that favor failure in the baccalaureate examinations.

2) THEORETICAL FRAMEWORK

2.1 JUSTIFICATION OF THE RESEARCH

Analysis of overall results by stream in the 2022 BAC

No.	Stream	Present	Passed	Pass rate	Share of candidates by stream
1	L2	70,965	37,494	52.83%	48.62%
2	L'1	42,986	18,644	43.37%	29.45%
3	S2	22,270	13,830	62.10%	15.26%
4	L-AR	5,101	2,737	53.66%	3.50%
5	STEG	2,524	1,604	63.55%	1.73%
6	LA	589	417	70.80%	0.40%
7	S1	491	477	97.15%	0.34%
8	T1	261	191	73.18%	0.18%
9	T2	209	116	55.50%	0.14%
10	S2A	201	149	74.13%	0.14%
11	STIDD	107	28	26.17%	0.07%
12	S3	77	75	97.40%	0.05%
13	S4	58	41	70.69%	0.04%
14	G	41	17	41.46%	0.03%
15	S5	33	22	66.67%	0.02%
16	L1a	16	16	100.00%	0.01%
17	F6	10	10	100.00%	0.01%
18	L1b	8	8	100.00%	0.01%

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No.	Stream	Present	Passed	Pass rate	Share of candidates by stream
19	S1A	2	2	100.00%	0.00%
	Total	**145,949**	**75,878**	**51.99%**	**100.00%**

The analysis of results by stream shows that the small-enrollment streams, with the exception of streams G and STIDD, achieved the best performances. This is the case for L1a, F6, L1b, S1A, S3, S1, S2A, T1, LA, S4 and S5.

Also, nearly half of all candidates, 48.62%, are enrolled in stream L2, 29.45% in L'1 and 15.26% in S2. The candidates of these three streams represent 93.33% of the total number of candidates. The remaining 16 streams share only 6.67% of the candidates.

We also note a national pass rate of more than 50% in 2022. Although one can also see a failure rate of nearly 50%, there is nonetheless reason to be pleased this year, since the figure has hovered between 30 and 40% for nearly a decade.

All these observations undoubtedly raise the nagging question of the orientation of our students.

This is to say that the quality indicators of our education system are, for the most part, in the red.

This diagnosis also concludes that the education system is ill-suited, inefficient and ineffective, a view shared by almost all stakeholders and the population. These are so many questions that justify the choice and relevance of the subject "The determinants of failure in the baccalaureate".

2.2 RESEARCH PROBLEM

Education, as we have said, is a fundamental determinant in life. It is not only associated with the acquisition of knowledge, but also with the acquisition of skills that enable better integration into working life and society. It has progressed considerably in recent years, thereby contributing to a large extent to the economic growth of countries.

However, even though more and more students complete their secondary studies and go on to higher or university education, many still drop out and leave the education system without the skills they would need to succeed in adult life. They thus have a real handicap in terms of professional opportunities and chances in everyday life.

In Senegal, school failure is a reality. As we showed a little earlier, the high rate of school attrition, despite administrative limiting measures, confirms it. According to DPRE statistics (2022), the dropout rate is 10.3% in elementary, 6.8% in lower secondary and 8% in upper secondary. The completion rate is 65.1% in elementary, 41.9% in lower secondary and 28.3% in upper secondary. That is, out of 100 pupils enrolled in CI, only 65 reach 6th grade, 42 reach seconde and 26 gain access to higher education.

In view of these results, is the Senegalese school not a school of failure? What can explain the scale of these failures in the Senegalese school?

These are so many questions that justify the choice and relevance of the subject "The determinants of failure in the baccalaureate". Our analysis will be confined to the results of the 2024 session in the S2 stream (the Experimental Sciences stream, whose dominant subjects are Mathematics, Physical Sciences and Life and Earth Sciences) in Senegal, where the demand for quality seems to be a concern of the public authorities.

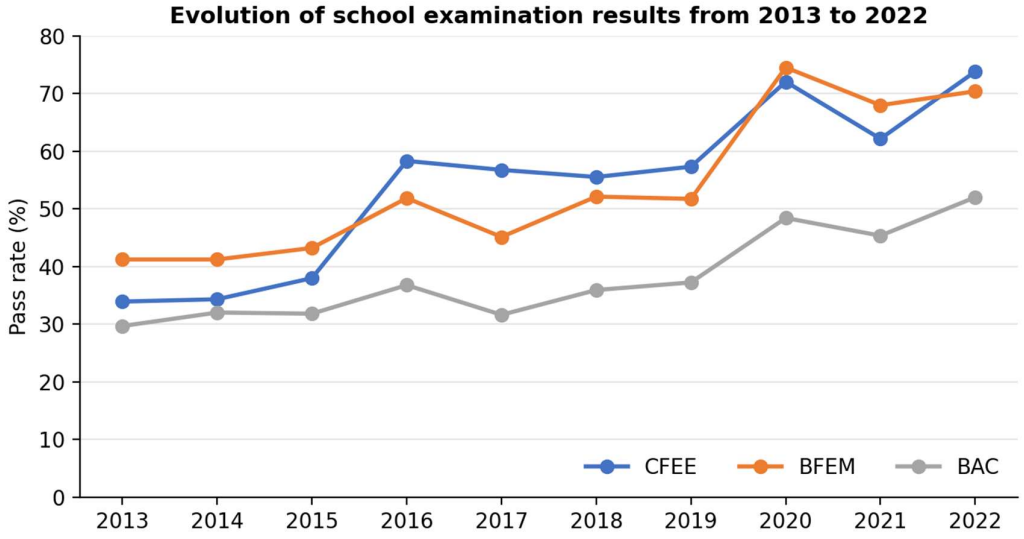
Indeed, the study of the evolution of results in the various school examinations from 2013 to 2022 (see the table below) shows that results evolve in fits and starts and rarely exceed a 50% pass rate, with the exception of the CFEE and the BFEM between 2020 and 2022. (See the table of analysis of overall results by stream.)

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SOME ELEMENTS FOR ANALYZING SCHOOL RESULTS

Evolution of school examination results from 2013 to 2022

Exam	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CFEE	33.90%	34.30%	37.97%	58.30%	56.74%	55.51%	57.30%	72.04%	62.14%	73.80%
BFEM	41.20%	41.20%	43.20%	51.85%	45.11%	52.11%	51.71%	74.51%	67.96%	70.38%
BAC	29.66%	32.00%	31.80%	36.75%	31.60%	35.90%	37.22%	48.40%	45.33%	51.99%



Evolution of school examination results, 2013–2022

So in one decade we note a considerable leap in these various examinations: 39.90 percentage points for the CFEE, 29.18 for the BFEM and 22.33 for the BAC.

A paradoxical finding, since results are seen to be better especially during years of disruption when instructional time is most badly affected: 2016 with the strikes, 2020 with COVID-19 and 2022 with strikes for the respect of agreements; but in spite of everything, efforts remain to be made.

Does this state of affairs regarding results in the various school examinations, the BAC in particular, not sufficiently prove that school failure is not only a reality but above all a structural problem of our education and training system?

Yet the economic and social consequences of very high school failure can be dramatic for a country: high unemployment, increased crime, lack of social cohesion, a lower economic growth rate, and even less active participation in the life of the community.

Since education is an essential means of making a society fairer, the government cannot afford to give up, for economic or social reasons, establishing an equitable, inclusive and quality education system.

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But inequities in education remain significant, despite the size of the budget allocated to it. This is why combating school failure at all levels must be an imperative for all actors in the system, given that these failures cost Senegalese taxpayers dearly. It is also by reducing school failure that social spending can be drastically reduced and equity achieved. In fact, inequity in education is not inevitable. Through targeted measures and practices, we can move towards more equitable education systems that exclude no one.

This explains why, in this article, we have focused on the determinants that could explain this high failure rate of students in the baccalaureate, particularly those in the scientific streams (S2).

What is important to bear in mind is that the pass rate in school examinations is not only one of the determining criteria of an education system's performance, but also an indicator of the quality of education.

2.3 Research objectives

General objective of the research

The general objective of this research is to analyze the determining variables of failure in the scientific baccalaureate (S2 stream), with a view to contributing to the adoption of strategies to drastically reduce school failure, particularly that linked to examinations, for the quality of the education system.

Indeed, the primary role attributed to Education is to train citizens capable of contributing to the economic, social and political development of their communities (Moisset and Merisier, 2001). To fulfill this mission, education systems must perform well both internally and externally, by ensuring that students entering a given cycle of study can complete it, drastically reducing the failure rate.

Why the choice of the S2 stream? Three reasons can certainly explain it.

First, the S2 stream is one of the scientific and elite streams (alongside Stream S1, the Mathematics and Physical Sciences option), with Experimental Sciences as its option. It is aimed at students of a good scientific level, with a taste for observation, a capacity for synthesis and a good capacity for work. This explains why it is mainly the best students who obtained the BFEM that are directed to it. Its objective is to develop a real scientific culture based on knowledge and an experimental approach to the sciences.

The S2 stream also requires the following conditions:

- a good level in mathematics, physical sciences, life and earth sciences and the French language;
- the ability to make precise observations, to explain and to demonstrate;
- a love of research and a passion for scientific research;
- the ability to work continuously over a long period.

As for the opportunities opened up by the S2 baccalaureate, they are numerous: the holder of the S2 baccalaureate can choose any course of study (scientific or not), pursue higher education in science and technology, medicine or physical and sports activities. Equipped with a solid general culture, rigorous and methodical, S2 baccalaureate holders also succeed in law, economics, the humanities…

Next, of the 19 streams present at the 2022 BAC (and the same observation holds almost every year for other years), the S2 stream is 3rd in terms of the number of registered candidates (22,270) after stream L2 (70,965) and L'1 (42,986). And in terms of pass rates, it obtained 62.10%, somewhat above the national average of 51.99% (see the table Analysis of overall results by stream in the 2022 BAC).

Finally, the Program for Improving the Quality, Equity and Transparency of Education and Training (PAQUET-EF), in its strategic orientations, aims to promote the teaching of mathematics, science and technology in lower and upper secondary

education. In this vein, the public authorities have instructed a set of reforms, including the revision of timetable allocations and the generalization of physical sciences in all 4th-grade classes, but above all the design and implementation of school projects for the promotion of learning success in mathematics and the sciences (PE PREAMS), which is intended to address the human capital training component of the Plan Sénégal Émergent (PSE).

Specific objectives

This study also has a threefold interest: first for any researcher and education specialist, then for the Ministries in charge of Education and Training in Senegal, and finally for all actors and partners of the Senegalese education system.

Addressing such a subject is important, because it will allow us to **deepen** our knowledge in a specific area of the evaluation of statistics and of econometrics. Indeed, **defining** the determining variables of failure in school examinations is necessary for the quality of the education system insofar as, owing to globalization, the quality of teaching is a guarantee of a country's development. Consequently, the school, in order to meet the challenge of competitiveness on the national and international markets for trained human resources, will be able to **rely on** this analysis of the explanatory variables of failure in the scientific baccalaureate.

The interest of this study for the Ministries in charge of Education and Training in Senegal lies in the fact that it will enable them to **better understand** school failure, to better grasp the determinants of this failure and thus to **better approach** in-depth reforms for a quality education system.

Finally, for all actors of the Senegalese education system, this study will be a tool enabling them to **better understand** the problems of school failure, but also and above all to **better master** the factors that determine it, for a better reform of the management of the school system.

3) METHODOLOGICAL FRAMEWORK

3.1 APPROACH TO THE STUDY OBJECTIVE

3.1.1 Definition of concepts

School failure can be defined either as the failure of a school system to provide the services that allow a student to learn effectively, or as the failure of a student to move up to the next grade and, sometimes, to remain in the system; these two aspects are intrinsically linked (Psacharopoulos, 2007). All countries, whether Western or developing, are confronted with the problem of school failure and dropout, which is its most visible manifestation. Indeed, students who leave the education system before completing the elementary, lower secondary or upper secondary cycle are very numerous.

School failure manifests itself mainly in developing countries such as Senegal through failure in school examinations.

Determinants are the multitude of factors that can explain this phenomenon. They are factors specific to students, such as learning difficulties and educational needs; sociocultural factors linked to the family and socio-economic context of students; and institutional factors specific to schools, such as insufficient resources, incoherent curricula or ineffective teaching methods, and the lack of training or insufficient number of teachers.

3.1.2 Considerations on the baccalaureate

The database we will work on is extracted from the database of the Office du Baccalauréat, which is responsible for organizing the bac in Senegal. As a reminder, the baccalaureate is a diploma of the Senegalese education system that has the dual particularity of marking the end of secondary studies and of opening access to higher education. It is thus the first university degree.

The general baccalaureate is made up of four stream groups and several options for each of them.

Table 1: Streams and options in the general baccalaureate

STREAMS	OPTIONS
Literary streams	L1 - option 1a - ancient languages and civilizations (L1a); L1 - option 1b - ancient languages and civilizations (L1b); L'1 - option 2 - modern languages and civilizations (L'1); L2 - social and human sciences; LA - Arabic option - languages and social sciences
Scientific streams	S1 - Mathematics and physical sciences; S2 - Experimental sciences; F6 - Chemistry; S1a - Fundamental sciences - Arabic option; S2a - Applied sciences - Arabic option
Technical and technological streams	S3 - Science and techniques; S4 - Agriculture and environment science and technology; S5 - Agri-food product science and technology; T1 - Mechanical manufacturing; T2 - Electrotechnics / electronics
Management streams	G - quantitative techniques of economics and management

This national examination comprises nine to ten compulsory written and oral tests, as well as optional tests. For example, the table below summarizes the various tests for the S2 baccalaureate.

Table 2: The tests of the S2 Baccalaureate

BAC TESTS	COEFF.	OUT OF	DURATION
French	3	60	4h
Philosophy	2	40	4h
History – Geography	2	40	4h
English	2	40	2h
Mathematics	5	100	4h
Physical Sciences	6	120	4h
SVT (Life and Earth Sciences)	6	120	4h
Physical Education	–	–	–
Total		520	

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3.1.3 Organization of the baccalaureate

Organizing the baccalaureate requires many months of preparation: drafting the tests, organizing the centers and juries, supervising the tests and marking the papers, and announcing the results all mobilize the staff of the Office du Baccalauréat and the various school administrations involved. Thus, several actors are involved in organizing this examination.

3.1.3a Registration for the BAC

Candidates for the Senegalese Baccalaureate come from public or private lycées and from general and vocational schools, and sometimes from candidates who attend no school at all.

Every baccalaureate candidate must provide, at registration, a complete file with all the required documents.

3.1.3b Drafting the tests

The papers handed to candidates in July are the culmination of a process that begins more than a year earlier.

Indeed, the Office du Baccalauréat sends letters to seasoned teachers, chosen from across the territory, to ask for proposals for papers. These proposals concern the main papers of the 1st and 2nd groups and the backup papers for the regular and replacement sessions.

Once the proposals have been made, committees for drafting and choosing papers are set up, chaired by an inspector general of national education. The members of these committees are lycée teachers, proposed by the competent inspection bodies and chosen from schools that are representative in their diversity. Participation in these committees is not remunerated. The composition and work of these committees are strictly confidential.

Each committee drafts several papers, which can be modified if necessary to take amendments into account. At the end, the final choice of papers is made.

A few days before the tests, the papers are printed, sealed in envelopes, packed in trunks and stored in secure premises before being delivered to the examination centers until the time of the test concerned.

3.1.3c The examination centers

The examination centers are the schools chosen to host the examination juries.

The head of the examination center is usually the principal (proviseur) of the school that hosts the candidates, assisted in his tasks by one or more deputies. He is thus the key actor in the preparation and conduct of the tests.

His responsibilities are varied:

- storing the papers in the days preceding the tests;
- preparing the premises and distributing candidates within the rooms;
- organizing supervision by members of the teaching staff and, exceptionally, any other education personnel;
- welcoming candidates and ensuring that the tests run smoothly;
- distributing the papers and allocating the scripts among the markers;
- organizing the secretariat of the juries;
- organizing the 2nd-group tests;
- handing out transcripts to candidates;
- handling appeals.

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3.1.3d The admission juries

At the baccalaureate, the admission jury is made up of the chair, the secretaries and the markers.

Jury chairs are chosen from among university professors, lower and upper secondary inspectors, trainers at the CRFPE, or very experienced teachers. They then undergo training in the management of examination centers.

As for the markers, they are appointed from among the teachers of the various subjects. They must have at least five years' seniority, be of category A in the hierarchy and teach in lycées.

After being numbered to ensure anonymity, the scripts are delivered to the markers. On average, teachers mark about a hundred scripts, but philosophy teachers may have to mark more. They have on average one week to return the scripts and marks to the deliberation center. They are also required to follow very precise marking schemes and in theory must spread their marks from 0 to 20.

Markers used to take the scripts of the candidates they marked home with them, but since 2016 marking has been done on site.

The admission jury declares admitted the students who have an average greater than or equal to 10/20, invites students who obtained between 8 and 10 to sit the oral make-up exam, and finally "fails" (recale) candidates with an average below 8/20.

The jury may possibly rescue certain students or allow others to obtain a distinction: this is where the school record (livret scolaire) can prove valuable… Of course, only candidates whose average is very close to the required mark can benefit.

The jury is sovereign in its deliberation, that is, no challenge is possible. However, unsuccessful candidates file numerous complaints against the jury's decisions every year and frequently claim that their teacher examined their draft and that they deserved more, etc. Until the close of the session, any complaint falls under the authority of the Jury Chair.

The chair is under no obligation to grant these requests unless there is a glaring clerical error (for example a sheet overlooked by the marker).

The Office du Baccalauréat charges no fee for access to one's scripts.

3.1.3e The tests

The tests are divided into two groups: the first-group tests and the second-group tests.

The first-group tests

At the end of the first-group tests, if the candidate has obtained:

- an average below 8/20: he or she is failed (ajourné);
- an average of 10/20 or more: he or she is declared admitted;
- an average at least equal to 8/20 and below 10/20: he or she is authorized to sit the oral tests of the second group.

Finally, distinctions are awarded only to candidates who pass the baccalaureate at the first group of tests. Très bien (with highest honors): average greater than or equal to 16/20; Bien (with high honors): average greater than or equal to 14 and below 16; Assez bien (with honors): average greater than or equal to 12 and below 14.

The second-group tests: the make-up tests

The candidate admitted to sit the 2nd-group tests is authorized to retake two dominant subjects and one non-dominant subject. Only the best mark obtained by the candidate in each subject is taken into account. He or she passes by obtaining an average of 10/20 or more across all the tests.

3.1.3f The school record (livret scolaire)

Juries must, during deliberations, systematically consult the school record and take it into account, especially if the gaps

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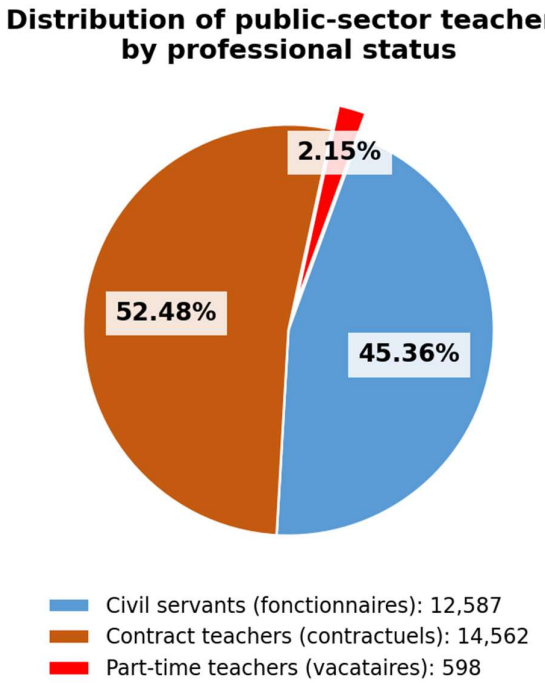
between the marks obtained in the examination and those of the school year are large. Examining this document must have a positive effect, never the reverse.

3.1.3g The replacement session

There is a replacement session in October for all candidates who, because of a justified absence linked to an event beyond their control, were unable to sit all or part of the June tests. The replacement session includes no physical education and sports (EPS) tests, no optional tests, and no tests or parts of tests organized in schools outside the session at the end of the school year. Where applicable, the marks obtained in the regular session (EPS and optional tests) are carried over and taken into account in the replacement session.

3.1.4 Level of teachers from 2015 to 2022

Graph 1: Distribution of public-sector teachers by professional status. Source: DPRE, RNSE 2015.



Distribution of public-sector teachers by professional status

In 2015, of the 27,747 teachers in the lower and upper secondary cycle, 54.64% were either contract teachers or part-time teachers (vacataires) (see the graph alongside).

But we note a clear improvement (see the table alongside).

Teachers in general secondary schools in 2022

Level of qualification and certification of general secondary teachers

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Table 118: Percentage of qualified and certified teachers in general secondary education in 2022

Academy	Total: Number	Total: % qualified	Total: % certified	Public: Number	Public: % qualified	Public: % certified
Dakar	3,644	100.0%	55.8%	994	100.0%	98.0%
Diourbel	1,350	100.0%	79.7%	819	100.0%	95.5%
Fatick	2,011	100.0%	85.9%	1,501	100.0%	93.5%
Kaffrine	404	100.0%	94.3%	372	100.0%	95.4%
Kaolack	1,802	100.0%	88.1%	1,242	100.0%	93.5%
Kédougou	256	100.0%	94.1%	242	100.0%	95.9%
Kolda	719	100.0%	94.3%	616	100.0%	94.5%
Louga	1,038	100.0%	87.1%	908	100.0%	95.2%
Matam	751	100.0%	89.7%	678	100.0%	91.0%
Pikine-Guédiawaye	4,524	100.0%	36.6%	1,120	100.0%	95.8%
Rufisque	1,305	100.0%	66.4%	583	100.0%	97.4%
Saint-Louis	1,764	100.0%	86.4%	1,346	100.0%	92.7%
Sédhiou	831	100.0%	89.9%	746	100.0%	95.0%
Tambacounda	740	100.0%	86.8%	480	100.0%	94.0%
Thiès	4,377	100.0%	84.3%	2,558	100.0%	96.4%
Ziguinchor	1,303	100.0%	84.1%	1,131	100.0%	93.5%
National	**26,819**	**100.0%**	**72.8%**	**15,336**	**100.0%**	**94.8%**

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Source: School census 2022 – DPRE/MEN

In 2022, the number of teachers in general secondary schools nationwide is 26,819, all of them qualified. However, only 72.8% of them are certified.

The academies of Dakar (55.8%) and Pikine-Guédiawaye (36.6%) record the lowest rates of certified teachers, unlike those of Kolda and Kaffrine with 94.3%.

In the public sector, in 2022, there are overall 15,336 teachers, all of whom are qualified and 94.8% of whom are certified. At the academy level, these teachers are all more than 90% certified.

3.1.5 School attrition

The high rate of school attrition, despite administrative limiting measures. According to DPRE statistics (2022), the dropout rate is 10.3% in elementary, 6.8% in lower secondary and 8% in upper secondary. The completion rate is 65.1% in elementary, 41.9% in lower secondary and 26.4% in upper secondary. That is, out of 100 pupils enrolled in CI, only 65 reach 6th grade, 42 reach seconde and 26 gain access to higher education.

3.1.5a Completion in general secondary education

The level of completion in general secondary education is measured by the completion rate. It is obtained by dividing the total number of pupils enrolled for the first time in the final-year (terminale) classes of general secondary education by the population of young people of the theoretical age for these classes (18 years).

Completion rate of the general secondary cycle

Table 120: Completion rate of the general secondary cycle in 2022

Region	Boys	Girls	Total	Parity index (PI)
Dakar	28.4%	36.1%	32.3%	1.27
Diourbel	13.9%	15.5%	14.7%	1.11
Fatick	24.4%	31.9%	28.1%	1.31
Kaffrine	11.4%	10.9%	11.2%	0.96
Kaolack	25.6%	26.0%	25.8%	1.01
Kédougou	19.7%	11.5%	15.7%	0.58
Kolda	16.0%	14.7%	15.4%	0.92
Louga	15.6%	20.6%	18.0%	1.32
Matam	13.2%	19.0%	16.0%	1.45

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Region	Boys	Girls	Total	Parity index (PI)
Saint-Louis	34.3%	37.3%	35.9%	1.09
Sédhiou	22.8%	16.7%	19.9%	0.74
Tambacounda	10.9%	11.1%	11.0%	1.01
Thiès	30.6%	42.2%	36.2%	1.38
Ziguinchor	45.7%	54.9%	50.1%	1.20
National	**24.0%**	**28.8%**	**26.4%**	**1.20**

Source: School census 2022 – DPRE/MEN and Demographic projections 2022 – ANSD

In 2022, the completion rate of general secondary education nationwide is 26.4%. It is higher for girls (28.8%) than for boys (24.0%), hence a parity index of 1.20 in favor of girls.

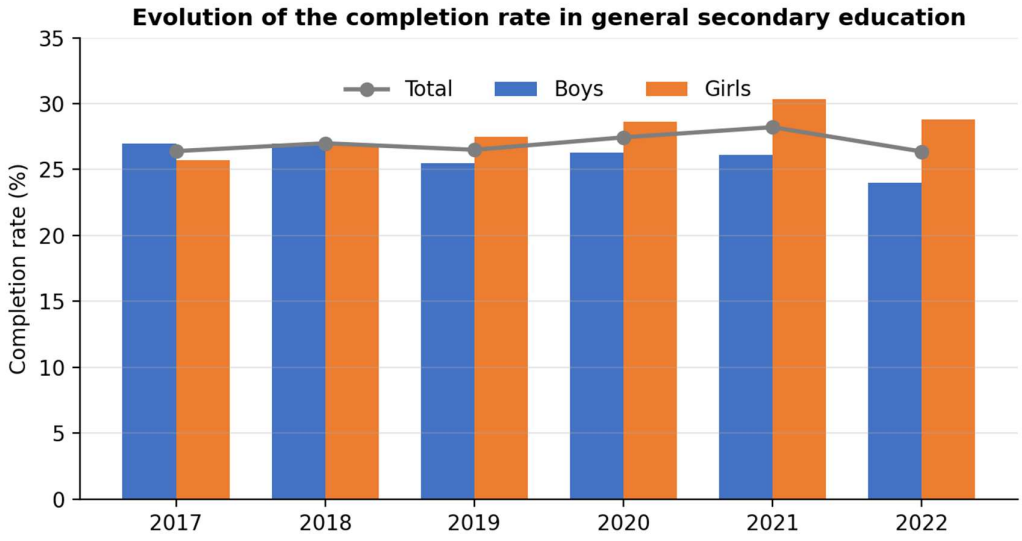
There are disparities between regions, with the highest completion rate in Ziguinchor (50.1%) and the lowest in Tambacounda (11.0%).

The Ziguinchor region records the highest completion rates for both girls (54.9%) and boys (45.7). The lowest rates are recorded in Tambacounda (10.9%) for boys and in Kaffrine (10.9%) for girls.

Evolution of the completion rate of the general secondary cycle between 2017 and 2022

Graph 36: Evolution of the completion rate of the general secondary cycle between 2017 and 2022. Source: school censuses – DPRE/MEN and Demographic projections/ANSD.

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Evolution of the completion rate, 2017–2022

Between 2017 and 2022, the completion rate of general secondary education nationwide went from 26.4% to 28.2%, a gain of 1.8 percentage points. A close reading of the graph reveals slight drops between 2018 and 2019 (0.5) and between 2021 and 2022 (1.8).

By sex, we note that the completion rate of girls has been higher than that of boys since 2019.

3.1.6 Level of evaluation

We also note a considerable lack of evaluation, whereas regular evaluation of internal yields is an important dimension for any education system concerned with effectiveness, that is, with the quality of teaching and learning. It is also rightly said that evaluation is the twin sister of school governance.

In our view, a notable deficit in the culture of evaluation must be acknowledged in our education system.

In this regard, for the evaluation of school yields, there is within INEADE only a simple division in charge of evaluations. This division lacks motivated and qualified human resources as well as the financial resources to carry out its mission properly.

Yet evaluation is a privileged tool for steering the system so as to increasingly ensure the quality of its services and results. This is why it seems to us necessary to set up a national directorate of evaluation for the constant improvement of teaching and learning and of the steering of the education system.

From our point of view, it is such a structure that is able to regularly deploy the various methodical tools for measuring the system's internal yield, whose results analysis makes it possible to correct, or even to redirect. At present, apart from school examinations, the measurement of the system's internal efficiency is done mainly through national SNERS surveys and, secondarily, through PASEC CONFEMEN to accurately assess the thresholds of learning mastery at the student level. To this are added evaluations within programs and projects that measure the performance of their actions on student levels. Examples are PAQEEB, PADES, LPT, PAAME, etc. We also note, for some years now, citizen evaluations such as Jàngadoo, developed by LARTES/IFAN.

3.1.7 Baccalaureate pass rates in 2022

Academy	Boys	Girls	Total
Dakar	62.78%	61.81%	62.21%
Diourbel	59.12%	50.37%	54.33%
Fatick	49.27%	43.25%	45.84%
Kaffrine	45.69%	35.89%	40.91%
Kaolack	53.72%	46.49%	49.99%
Kédougou	44.46%	35.62%	41.34%
Kolda	39.34%	32.83%	36.41%
Louga	64.64%	52.25%	57.61%
Matam	58.63%	47.50%	52.15%
Pikine-Guédiawaye	58.56%	54.66%	56.25%
Rufisque	56.03%	55.55%	55.75%
Saint-Louis	56.05%	49.63%	52.40%
Sédhiou	47.32%	37.35%	43.13%
Tambacounda	52.29%	44.77%	48.43%
Thiès	56.24%	49.03%	52.11%
Ziguinchor	48.81%	42.74%	45.57%
National	**54.89%**	**49.67%**	**51.99%**

Source: 2022 bac examination statistics / Office du bac

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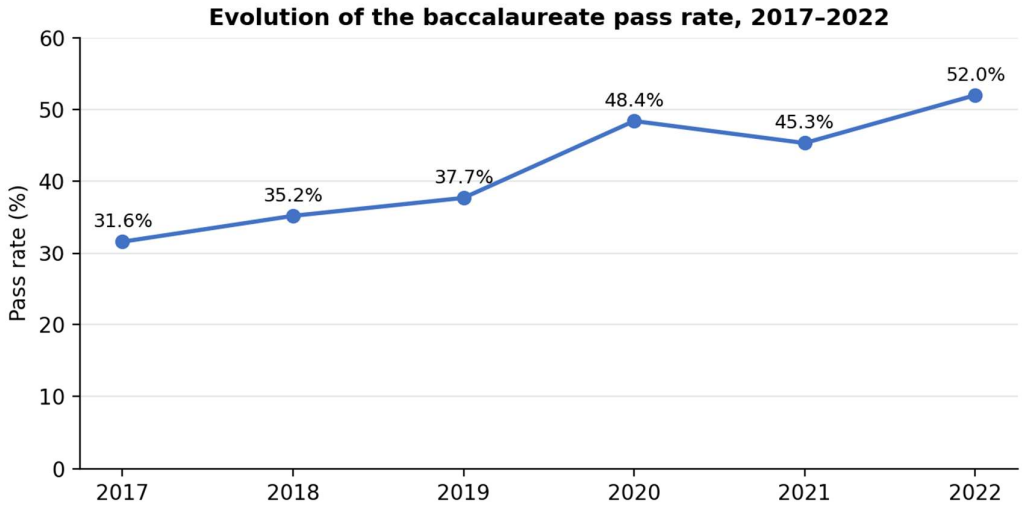
In 2022, the pass rate in the Baccalaureate is 51.99%. It is higher for boys (54.89) than for girls (49.67%).

At the academy level, this situation shows a small dispersion around the national value. The academies of Dakar (62.21%), Louga (57.61%) and Pikine-Guédiawaye (56.25%) record the strongest performances, while those of Kolda (36.41%), Kaffrine (40.91%) and Kédougou (41.34%) have the lowest pass rates.

By sex, in all academies, boys perform better.

3.1.7a Evolution of the baccalaureate pass rate

Graph 33: Evolution of the baccalaureate pass rate between 2017 and 2022. Source: bac examination statistics / Office du bac.



Evolution of the baccalaureate pass rate

Between 2017 and 2022, the baccalaureate pass rate went from 31.6% to 52%, an average annual growth rate (TAMA) of 10.5%. A linear evolution is noted from 2017 to 2020, with a significant jump of 10.7 percentage points in 2020. Between 2020 and 2021, the rate fell by 3.1 percentage points, going from 48.4% to 45.3%. From 2021 to 2022, it rose sharply by 6.7 percentage points, going from 45.3 to 52%.

3.1.8 Baccalaureate pass rates in 2024

Nationwide, the reported pass rate is 48.71. Among the 16 Inspections d'Académie of Senegal, the IA of Dakar comes first with a pass rate of 60.07%, followed by that of the Matam region with 56.56%, and then by those of Pikine-Guédiawaye and Rufisque with a rate of 53%. Next, in fifth position, comes the Louga region with 50.88%. The lowest pass rates in the 2024 baccalaureate examination were recorded in Kédougou and Kolda, with 37.79 and 37.43 percent.

However, a considerable drop in the number of candidates admitted compared with 2023 is observed. The total number of admitted candidates in the 2024 Baccalaureate fell from 77,284 in 2023 to 75,462 in 2024, a difference of 1,822 admitted candidates. While the number of admitted candidates fell this year, the number of candidates who obtained a distinction rose sharply this year.

Indeed, the number of distinctions went from 7,642 (145 Très Bien, 1,419 Bien and 6,648 Assez Bien) in 2023 to 9,450 (169 Très Bien, 1,584 Bien and 7,697 Assez Bien) in 2024, that is 1,808 more distinctions.

3.2 Methodology

3.2.1 DISTRIBUTION OF THE STUDY POPULATION

The number of candidates registered for the 2024 Baccalaureate is one hundred fifty-nine thousand four hundred eighty-seven (**159,487**) candidates, of which **58.27%** in the general baccalaureate and **55.12%** in the technical baccalaureate.

The percentage of candidates from the public sector is **53.99%** and that of individual (private-study) candidates is **14.94%**.

Distribution of candidates by stream and by academy:

	L'1	L1A	L1B	L2	LA	L-AR	S1	S1A	S2	S2A	S3	S4	S5	Total
DAKAR	2,390		14	7,704	29	220	186	7	3,913	55	14			**14,532**
DIOURBEL	2,769			3,556	175	1,075	63		1,779	55	15			**9,487**
FATICK	3,317			5,293	16	211	3		1,155	5				**10,000**
KAFFRINE	1,133			1,825	121	227	4		392	6				**3,708**
KAOLACK	3,463	6		5,783	154	745	28		1,526	20				**11,725**
KÉDOUGOU	280			717			3		131		12	14		**1,157**
KOLDA	1,938			2,903	17	2	15		551	2				**5,428**
LOUGA	1,884			3,194	175	675	13		835	58				**6,834**
MATAM	1,389			2,119	47	8	9		383	5				**3,960**
PIKINE-GUÉDIAWAYE	2,605			13,022	154	604	120		5,198	35	35			**21,773**
RUFISQUE	1,218			5,564	33	72	47		1,674	13				**8,621**
SAINT-LOUIS	3,258		5	6,652	46	61	43		1,395		10			**11,470**
SÉDHIOU	1,770			2,393	32	25	5		383	5				**4,613**
TAMBACOUNDA	1,422			2,411	5	18	14		371					**4,241**

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	L'1	L1A	L1B	L2	LA	L-AR	S1	S1A	S2	S2A	S3	S4	S5	Total
THIÈS	9,492	14		12,787	55	1,388	71		4,004	3	14	35	24	**27,887**
ZIGUINCHOR	3,713		15	5,864	5	52	13		952			11	16	**10,641**
TOTAL BY STREAM	**42,041**	**20**	**34**	**81,787**	**1,064**	**5,383**	**637**	**7**	**24,642**	**262**	**100**	**60**	**40**	**156,077**

Source: Office du bac

3.2.2 Design

Software used

Two software packages will be used for data processing. First, we will use the Excel spreadsheet to extract the database from the Office du Baccalauréat. We will then export it to SPSS. With SPSS, we will produce descriptive statistics on our sample and proceed to the analysis and interpretation of the data.

Sample

The database used is extracted from Office du Baccalauréat data for the 2024 session. The national S2-stream population comprised 24,642 candidates. The present analysis covers only the 5,198 S2 candidates registered in the Pikine-Guédiawaye Academy. The results described in this article therefore concern this academy and must not be interpreted as estimates for all S2 candidates in Senegal.

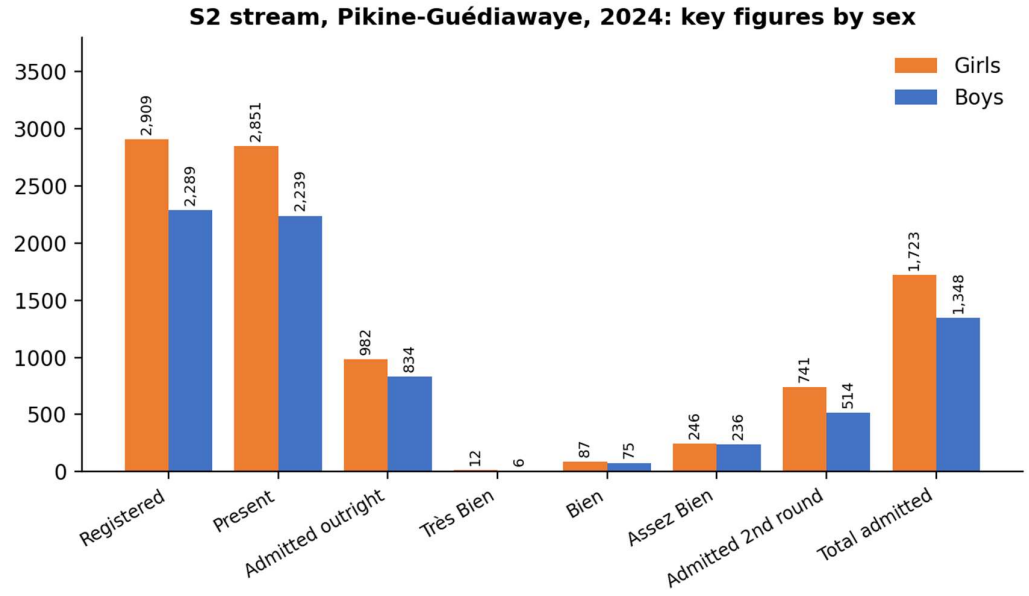
BACCALAUREATE 2024 STATISTICS, PIKINE-GUÉDIAWAYE, S2 STREAM

		S2 STREAM
REGISTERED	Girls	2,909
	Boys	2,289
	Total registered	**5,198**
PRESENT	Girls	2,851
	Boys	2,239
	Total present	**5,090**
ADMITTED OUTRIGHT (first round)	Girls	982

		S2 STREAM
	Boys	834
	Total admitted	**1,816**
MENTION TRÈS BIEN	Girls	12
	Boys	6
	Total TRÈS BIEN	**18**
MENTION BIEN	Girls	87
	Boys	75
	Total BIEN	**162**
MENTION ASSEZ BIEN	Girls	246
	Boys	236
	Total ASSEZ BIEN	**482**
TOTAL DISTINCTIONS		662
ADMITTED 2nd ROUND	Girls	741
	Boys	514
	Admitted 2nd group	**1,255**
TOTAL ADMITTED	Girls	1,723
	Boys	1,348
	Total admitted	**3,071**

Chart of the S2 stream statistics (the original donut chart is redrawn here as a grouped bar chart, by sex).

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S2 stream statistics by sex

Among the candidates present in the Pikine-Guédiawaye Academy, 1,723 girls out of 2,851 were admitted, about 60.4%, versus 1,348 boys out of 2,239, about 60.2%. Pass rates are therefore very close. The raw numbers of admitted candidates are not enough to conclude that girls succeed more than boys, because the denominators must take into account the candidates present at the examination.

In the public sector, 1,955 of the 2,910 candidates present were admitted, a pass rate of 67.2%; 37 of the 2,947 registered were absent. In the private sector, 1,116 of the 2,180 candidates present were admitted, a pass rate of 51.2%; 71 of the 2,251 registered were absent. These differences are descriptive and must not be interpreted as a causal effect of school status, because the composition of students and other uncontrolled characteristics may differ between sectors.

3.2.3 Data analysis and interpretation

This article describes the results of S2-stream candidates in the Pikine-Guédiawaye Academy in the 2024 session of the baccalaureate. Given the use of descriptive statistics and cross-tabulations, the analysis highlights associations and differences in results, but cannot on its own establish the causes of school failure.

3.2.3.a Data analysis

Count of STUDENT_NAME — by school status and sex

Row labels	FEMALE	MALE	Grand total
PRIVATE	1,242	1,009	2,251
PUBLIC	1,629	1,318	2,947

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Row labels	FEMALE	MALE	Grand total
Grand total	**2,871**	**2,327**	**5,198**

Count of STUDENT_NAME — by outcome and sex

Row labels	FEMALE	MALE	Grand total
ABSENT	61	47	108
ADMITTED	1,723	1,348	3,071
FAILED (AJOURNÉ)	1,087	932	2,019
Grand total	**2,871**	**2,327**	**5,198**

Count of STUDENT_NAME — by round and sex

Row labels	FEMALE	MALE	Grand total
1st ROUND	982	834	1,816
2nd ROUND	741	514	1,255
FAILED (AJOURNÉ)	1,148	979	2,127
Grand total	**2,871**	**2,327**	**5,198**

Count of STUDENT_NAME — by distinction and sex

Row labels	FEMALE	MALE	Grand total
FAILED (AJOURNÉ)	1,148	979	2,127
ASSEZ BIEN	246	236	482
BIEN	87	75	162
PASSABLE (pass, no distinction)	1,378	1,031	2,409

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Row labels	FEMALE	MALE	Grand total
TRÈS BIEN	12	6	18
Grand total	**2,871**	**2,327**	**5,198**

SCHOOL STATUS

	Frequency	Percent	Valid percent	Cumulative percent
PUBLIC	2,947	56.7	56.7	56.7
PRIVATE	2,251	43.3	43.3	100.0
Total	5,198	100.0	100.0	

JURY DECISION

	Frequency	Percent	Valid percent	Cumulative percent
Valid: ADMITTED	3,071	59.1	60.3	60.3
Valid: FAILED (AJOURNÉ)	2,019	38.8	39.7	100.0
Valid total	5,090	97.9	100.0	
Missing (system missing)	108	2.1		
Total	5,198	100.0		

ADMITTED

Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
PUBLIC	Mean	11.153	9.315	11.679	11.166	11.030	10.683	11.400	12.033	11.1697
	N	1955	1955	1955	1955	1955	1955	1955	1955	1955

Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
	Std. dev.	2.3568	2.7231	3.0204	2.6680	2.6720	2.4756	2.9535	3.3233	1.21591
	Min	5.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	9.38
	Max	19.0	19.0	20.0	20.0	20.0	19.0	20.0	20.0	16.38
PRIVATE	Mean	11.402	9.787	11.211	10.872	11.241	10.996	12.613	11.321	11.2317
	N	1116	1116	1116	1116	1116	1116	1116	1116	1116
	Std. dev.	2.4253	2.7387	3.1074	2.6572	2.6070	2.5186	3.2886	3.9605	1.32752
	Min	4.0	3.0	3.0	4.0	3.0	3.0	3.0	0.0	9.69
	Max	19.0	18.0	20.0	19.0	19.0	18.0	19.0	18.0	17.19
TOTAL	Mean	11.244	9.486	11.509	11.059	11.106	10.797	11.841	11.774	11.1923
	N	3071	3071	3071	3071	3071	3071	3071	3071	3071
	Std. dev.	2.3845	2.7378	3.0601	2.6674	2.6501	2.4954	3.1338	3.5838	1.25775
	Min	4.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	9.38
	Max	19.0	19.0	20.0	20.0	20.0	19.0	20.0	20.0	17.19

FAILED (AJOURNÉ)

Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
PUBLIC	Mean	8.614	6.896	5.783	4.786	6.342	7.932	9.415	11.667	6.6324
	N	955	955	955	955	955	955	955	955	955
	Std. dev.	2.3964	2.3842	2.8810	2.4055	2.2992	2.6124	2.6150	3.6752	1.37866

Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
	Min	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.27
	Max	18.0	16.0	15.0	16.0	14.0	15.0	18.0	19.0	9.96
PRIVATE	Mean	8.238	6.867	5.094	3.973	5.635	7.683	9.242	10.852	6.0563
	N	1064	1064	1064	1064	1064	1064	1064	1064	1064
	Std. dev.	2.5798	2.3620	2.9481	2.2598	2.2748	2.6538	3.0306	4.1353	1.49561
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23
	Max	18.0	15.0	14.0	15.0	12.0	15.0	18.0	19.0	9.85
TOTAL	Mean	8.416	6.881	5.420	4.358	5.970	7.801	9.323	11.238	6.3288
	N	2019	2019	2019	2019	2019	2019	2019	2019	2019
	Std. dev.	2.5012	2.3719	2.9360	2.3644	2.3129	2.6366	2.8422	3.9445	1.46955
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23
	Max	18.0	16.0	15.0	16.0	14.0	15.0	18.0	19.0	9.96

TOTAL (all candidates present)

Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
PUBLIC	Mean	10.320	8.521	9.744	9.073	9.491	9.780	10.748	11.913	9.6807
	N	2910	2910	2910	2910	2910	2910	2910	2910	2910
	Std. dev.	2.6526	2.8523	4.0640	3.9568	3.3727	2.8327	2.9952	3.4464	2.48133
	Min	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.27

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Status	Statistic	French	Philo.	Maths	Phys. Sci.	SVT	Hist-Geo	English	EPS	Average
	Max	19.0	19.0	20.0	20.0	20.0	19.0	20.0	20.0	16.38
PRIVATE	Mean	9.858	8.362	8.226	7.505	8.505	9.379	10.967	11.092	8.7057
	N	2180	2180	2180	2180	2180	2180	2180	2180	2180
	Std. dev.	2.9597	2.9479	4.3053	4.2429	3.7225	3.0699	3.5855	4.0526	2.94761
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23
	Max	19.0	18.0	20.0	19.0	19.0	18.0	19.0	19.0	17.19
TOTAL	Mean	10.122	8.453	9.094	8.401	9.069	9.608	10.842	11.561	9.2631
	N	5090	5090	5090	5090	5090	5090	5090	5090	5090
	Std. dev.	2.7974	2.8944	4.2358	4.1545	3.5600	2.9431	3.2626	3.7399	2.73358
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23
	Max	19.0	19.0	20.0	20.0	20.0	19.0	20.0	20.0	17.19

3.2.3.b Interpretation of the results

The descriptive tables show differences between categories of candidates. However, the mean marks in mathematics, physical sciences and SVT are directly linked to the jury's decision, since the subject results contribute to the calculation of the examination results. The gaps in marks between admitted and failed candidates therefore do not, on their own, constitute independent evidence that these marks are determinants of failure. A complementary analysis taking into account the decision rules and the structure of the marks would be needed to study their contribution.

Conclusion

In the sample studied in Pikine-Guédiawaye, 3,071 of the 5,090 candidates present were admitted, a pass rate of 60.3%. The 2,019 failed candidates represent 39.7% of the candidates present. The 108 candidates absent out of the 5,198 registered are presented separately and are not counted as failures among the candidates present. These figures concern only S2 candidates in the Pikine-Guédiawaye Academy and do not describe the national pass rate of the S2 stream.

The results underline the value of continuing the analysis of inequalities in baccalaureate outcomes. However, the descriptive data presented are not sufficient to attribute the observed gaps to a specific cause. Complementary analyses incorporating the individual, school and contextual characteristics of candidates would be needed to examine the factors associated with failure

and to distinguish associations from causal effects.

According to the national data cited in the methodology section, the S2 stream had 24,642 candidates in 2024. This figure relates to the national population of the stream, whereas the empirical analysis in this article covers the 5,198 candidates registered in the Pikine-Guédiawaye Academy. The promotion of mathematics, science and technology remains an important objective of education policy, but the results of this study must be interpreted within the geographic and methodological limits of the sample analyzed.

We have shown that the S2 stream is not only 3rd in terms of the number of registered candidates (24,642), but also the one regarded as the engine of the country's economic emergence. Indeed, the Program for Improving the Quality, Equity and Transparency of Education and Training (PAQUET-EF), in its strategic orientations, aims to promote the teaching of mathematics, science and technology.

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[13] Abdramane Cherif Haidara HESAM Université, 2023 Sociologie « Les familles et les acteurs face à l'échec scolaire des enfants à Bamako. »

paragraph; (4) registered girls/boys are 2,909/2,289 in the summary table but 2,871/2,327 in the cross-tabulations; (5) section 3.2.1 gives 58.27% and 55.12% for the general and technical baccalaureate without saying what these percentages measure.