Stochastic Modelling and Computational Sciences

A DESCRIPTIVE AND INFERENTIAL STATISTICAL STUDY OF AHSEC PASS STUDENTS IN MAJULI FOR THE YEARS 2019 AND 2020

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ABSTRACT
The study explores the academic performance of students who passed the 12th final exam under Assam Higher Secondary Examination (AHSEC) in Majuli district during the years 2019 and 2020. Focusing on division-wise results, the study aims to identify trends in academic performance and evaluate year-wise variations. Using secondary data from the AHSEC website, the analysis compares overall performance across the two years and across different academic streams (Arts, Science, and Commerce). The findings reveal notable fluctuations in division-wise results, suggesting possible influences such as educational support systems, student preparedness, and external factors like the COVID-19 pandemic in 2020. This study highlights the need for targeted academic interventions and offers insights for educators and policymakers seeking to improve higher secondary education outcomes in Majuli.

INTRODUCTION
Education is a key driver of individual empowerment and societal progress. In the context of developing regions like Assam, access to quality education and academic performance at the secondary and higher secondary levels are important indicators of social development(Öztürk, 2001). The Higher Secondary Examination conducted by the Assam Higher Secondary Education Council (AHSEC) serves as a significant academic benchmark for students in the state (Kumari et al., 2013: Bedi et al., 2006) . The performance in this examination often determines a student's future trajectory in higher education, employment, and overall growth. Therefore, an in-depth analysis of the performance of students in the AHSEC examination can offer meaningful insights into the educational dynamics of a region.

Majuli, declared as a district in 2016, is renowned for its cultural richness and ecological uniqueness as the world's largest inhabited river island. Despite its cultural prominence, Majuli faces numerous challenges, particularly in the field of education, due to geographical isolation, frequent floods, limited infrastructural facilities, and socio-economic constraints (Sarma et al.,2004). As a result, students in this district often encounter barriers that impact their academic performance. Understanding their academic outcomes can help reveal underlying issues and inform efforts to improve the quality of education in such remote areas. This study focuses on analyzing the pass results of AHSEC students in Majuli for the academic years 2019 and 2020. It examines the performance of students based on year and academic stream—namely Arts, Science, and Commerce. The study employs both descriptive and inferential methods to identify patterns and significant differences in results across these variables. Such an approach not only allows for a clearer understanding of performance trends but also helps to evaluate whether observed differences are due to chance or reflect real disparities in educational outcomes. The choice of these two consecutive years is intentional, as it allows for the observation of short-term changes and their potential causes—be they policy-related, socio-economic, or environmental. The COVID-19 pandemic, which began in 2020, may also have had an impact on academic performance, adding relevance to the comparison between these years.

SIGNIFICANCE OF THIS STUDY
This study holds significant value in understanding the educational landscape of Majuli, a remote and culturally rich district of Assam. By focusing on the performance of AHSEC pass students over two consecutive years—2019 and 2020—it provides crucial insights into the academic outcomes of students at the higher secondary level, a critical stage that shapes their future educational and career paths. One of the key contributions of the study lies in its relevance to regional educational planning. Majuli faces several developmental and infrastructural challenges due to its geographical isolation and vulnerability to natural calamities like floods. These factors often

negatively influence the learning environment and accessibility to quality education (Saikia et al.,2019). By analyzing year-wise, gender-wise, and stream-wise performance data, the study helps identify patterns and disparities that may be rooted in these local challenges. The findings can guide educational authorities, school administrators, and policy planners to design region-specific strategies to bridge performance gaps and improve overall educational outcomes. Secondly, the comparative approach between 2019 and 2020 adds further importance to this study. The year 2020 marked the onset of the COVID-19 pandemic, which significantly disrupted the education system globally, including in rural districts like Majuli. The study may reveal the extent to which the pandemic impacted student performance, access to education, and the effectiveness of remote or alternative learning methods introduced during that period. Lastly, this research may serve as a reference for future comparative or longitudinal studies in other districts of Assam or similar rural settings across India. It can also be useful for NGOs, educators, and development agencies working in the field of rural education. In essence, this study is not only a statistical examination of academic performance but also a tool for educational diagnosis and development. It provides a foundation upon which policies and practices can be built to ensure equitable, inclusive, and quality education for students in Majuli and beyond.

OBJECTIVES OF THE STUDY

1. To analyze the overall performance of AHSEC pass students in Majuli for the years 2019 and 2020.

2. To study the stream-wise (Arts, Science, Commerce) performance of students in both years.

3. To provide suggestions for improving academic performance and educational planning in the district of Majuli.

METHODOLOGY

This study is based on secondary data collected from the Assam Higher Secondary Education Council (AHSEC). It focuses on the pass results of students from Majuli district for the years 2019 and 2020. The data includes stream-wise performance statistics. A descriptive approach was used to identify trends and patterns, while inferential analysis helped determine the significance of differences across groups and years. The findings aim to provide insights into academic performance in a rural educational setting.

RESULTS AND DISCUSSION

In **2019**, a total of **1817 candidates** appeared for the Higher Secondary Examination. Out of these, **1587 students passed**, resulting in a **pass percentage of 87.34%**. Among the successful candidates, **250 students secured first division**, **603 obtained second division**, and **734 passed with third division marks**. This indicates that while a substantial number of students achieved first and second division, the largest share of students passed in the third division.

In **2020**, the number of students who appeared for the examination increased to **2028**, showing a rise of over 200 students compared to the previous year. A total of **1745 students passed**, with a slightly lower **pass percentage of 86.04%**. The number of students achieving **first division decreased to 244**, and those securing **second division fell to 555**. However, **third division pass numbers rose significantly to 946**, making it the most common result category for that year.

Table1: Number of total passed candidates Division-wise

Year	Candidate Appeard	Candidate Passed in Division			Total Pass	Pass percentage
		1st	2nd	3rd		
2019	1817	250	603	734	1587	87.34
2020	2028	244	555	946	1745	86.04

This comparison shows that although **more students passed in 2020**, there was a **decline in the number of students securing higher divisions** (first and second), and a **notable increase in third division results**. The slight drop in pass percentage (from 87.34% to 86.04%) may be linked to the challenges faced by students in 2020, especially due to disruptions caused by the COVID-19 pandemic.The shift in division-wise results suggests

that while students managed to pass, **overall academic performance quality may have declined**, with fewer students excelling and more students performing at the minimum qualifying level.

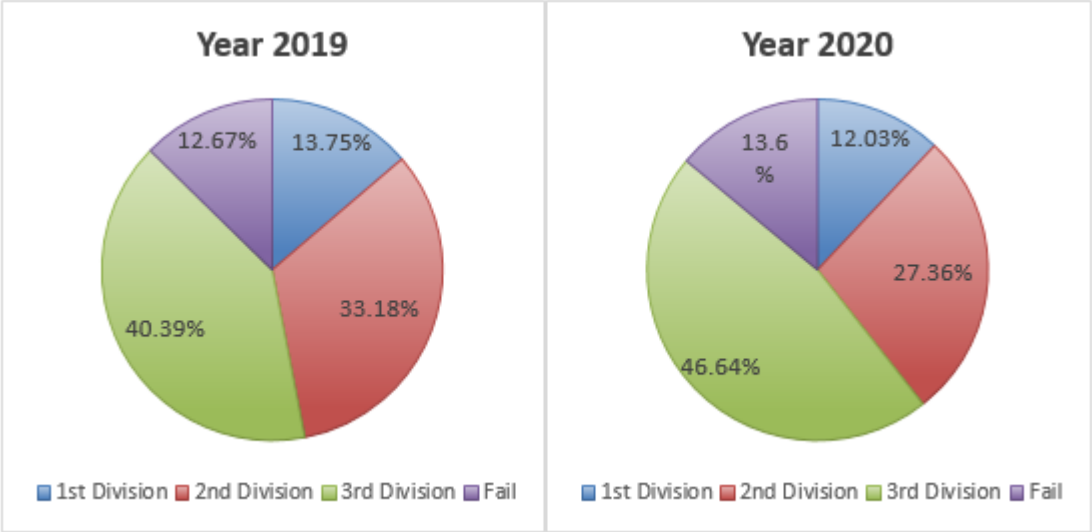

Fig: Pie-Chart for percentage wise passed candidates with divisions and failed candidates

Table2: Number of total passed candidates Division-wise in Arts stream

Year	Candidate Appeard	Candidate Passed in Division			Total Pass	Pass percentage
		1st	2nd	3rd		
2019	1589	155	526	701	1382	86.97
2020	1755	163	434	894	1491	84.96

Table3: Number of total passed candidates Division-wise in Commerce stream

Year	Candidate Appeard	Candidate Passed in Division			Total Pass	Pass percentage
		1st	2nd	3rd		
2019	27	07	05	12	24	88.89
2020	27	03	10	14	27	100%

Table4: Number of total passed candidates Division-wise in Science stream

Year	Candidate Appeard	Candidate Passed in Division			Total Pass	Pass percentage
		1st	2nd	3rd		
2019	201	88	72	21	181	90.05
2020	246	78	111	38	227	92.28

The Higher Secondary Examination results of Majuli district for the years 2019 and 2020 reflect both consistency and subtle shifts in academic performance across the Arts, Commerce, and Science streams. In the Arts stream, 1589 students appeared in 2019, with 1382 passing and a pass percentage of 86.97%. In 2020, the number of candidates rose to 1755, and 1491 passed, though the pass percentage slightly dropped to 84.96%. While more students passed in 2020, a shift from second to third division was observed, indicating a possible decline in performance quality. In the Commerce stream, 27 students appeared in both years. In 2019, 24 passed (88.89%), while in 2020 all 27 passed, achieving a 100% pass rate. However, the number of first division holders decreased, with more students passing in second and third divisions. The Science stream showed the strongest performance. In 2019, 181 out of 201 passed (90.05%), and in 2020, 227 out of 246 passed (92.28%). Although the pass percentage improved, the number of first division holders slightly declined. Overall, while Majuli maintained a

high pass rate, the increasing number of students passing in lower divisions suggests the need for stronger academic support and stream-specific interventions.

SUGGESTIVE MEASURES

To address the emerging challenges in academic performance among Higher Secondary students in Majuli, especially the increasing trend of lower division passes, several suggestive measures can be considered. Strengthening academic support for weaker students through remedial classes and mentoring can help improve individual performance. Enhancing the quality of teaching by organizing regular training programs for teachers is also essential, particularly in remote areas where educational resources are limited. Infrastructure development, including better classrooms, science laboratories, and digital facilities, can significantly enhance the learning environment. Following are the some of the measures that is pointed out:

1. Strengthen Academic Support Programs

Provide remedial classes and mentoring for academically weaker students, especially those consistently placed in the third division.

2. Improve Teaching Infrastructure

Upgrade school infrastructure in remote areas with better classrooms, laboratories, and digital learning tools to create a conducive learning environment.

3. Stream-Specific Guidance and Counseling

Offer career and academic counseling tailored to each stream (Arts, Commerce, and Science) to help students choose subjects based on their interests and abilities.

4. Teacher Training and Capacity Building

Conduct regular training programs and workshops for teachers to improve their subject knowledge, pedagogy, and student engagement strategies.

5. Parental Involvement and Community Awareness

Encourage parent-teacher meetings and community participation to promote a supportive educational atmosphere at home and within the village.

6. Bridge the Digital Divide

Provide access to online learning materials and ensure availability of smartphones/tablets and internet connectivity in rural households, especially post-COVID.

7. Motivational and Peer-Learning Initiatives

Introduce student clubs, peer-group learning models, and motivational talks to keep students inspired and engaged.

8. Regular Assessment and Feedback

Conduct regular internal assessments with proper feedback to help students track progress and address learning gaps early.

CONCLUSION

The present study highlights the academic performance of Higher Secondary students in Majuli district over the years 2019 and 2020, focusing on division-wise results across Arts, Commerce, and Science streams. The analysis reveals that while the overall pass percentage remained consistently high, there was a noticeable shift in the quality of performance, with a growing number of students passing in the third division, particularly in the Arts stream. Although the number of first division holders remained relatively stable in Science and declined in Commerce, the increase in total pass numbers suggests that more students are completing their higher secondary education, which is a positive sign.However, the decline in higher divisions in some streams indicates the need for targeted academic support and systemic interventions. Factors such as limited infrastructure, socio-economic challenges, and the disruptions caused by the COVID-19 pandemic in 2020 may have contributed to these

outcomes. To address these issues, the study recommends a multi-pronged approach involving teacher training, improved infrastructure, digital access, parental involvement, and regular academic monitoring. Overall, this study serves as a useful indicator of academic trends in a rural and geographically sensitive district like Majuli, offering insights that can inform policy decisions and educational planning at the local level.

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