



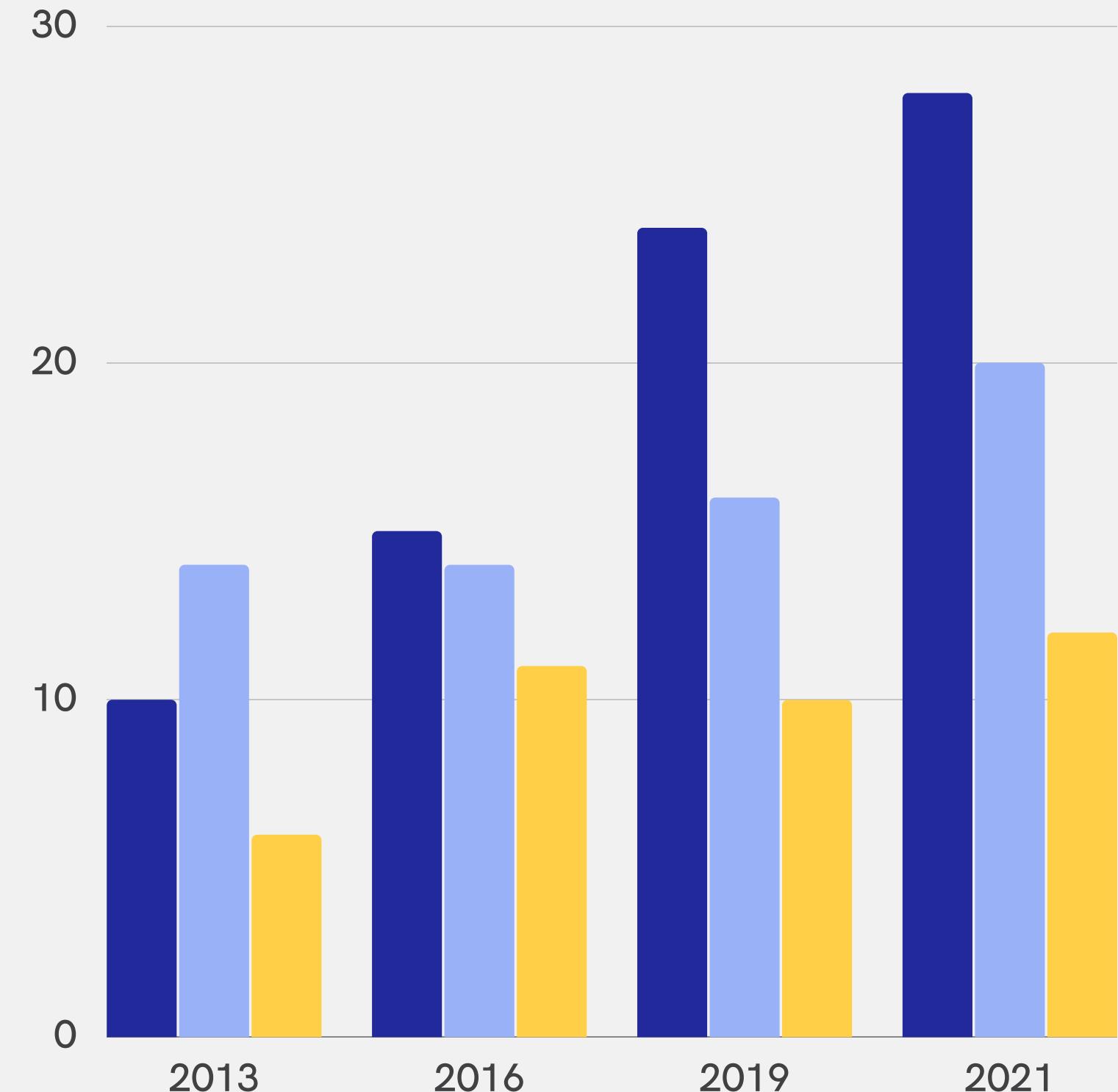
SSIP-2022

Student Dropout Analysis

Team ID: TM000112

Problem Statement: PID048

- Dropout is one of the most serious problems in INDIA.
- That leads to lower literacy rates in the country
- Therefore, We have come up with a solution to examine the causes of school dropouts.



Factors causing dropouts

(1) Student-Related Factors

- No interest in education
- Getting poor marks in examinations
- They have to help their parents and their families
- Individual problems
- Lack of facilities for education

(2) Family-Related Factors

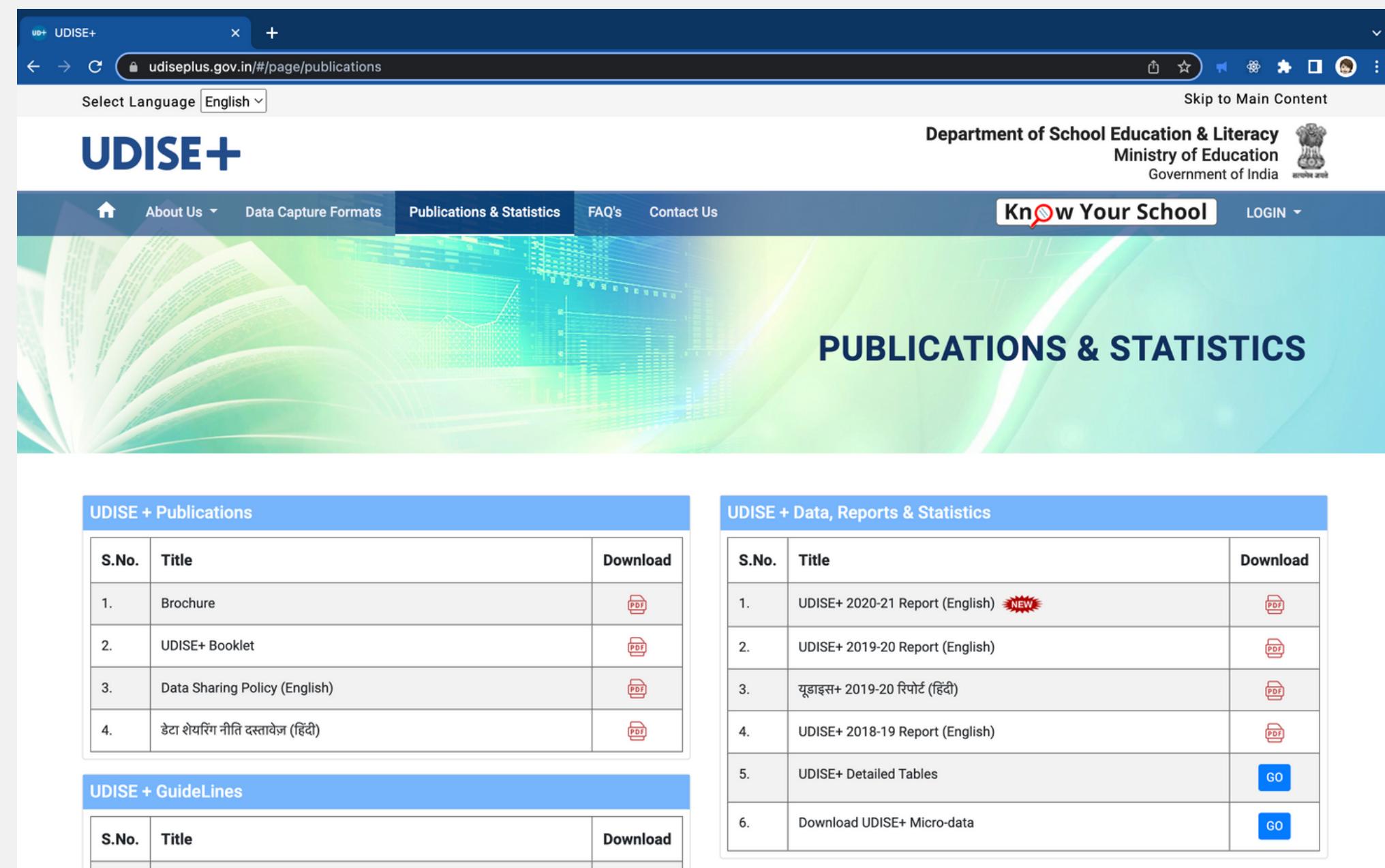
- Impact of family size and siblings.
- Parents' occupational level
- Poverty
- Environment of home
- Lack of parents' education

(3) Infrastructure-Related Factors

- Poor classrooms/facilities
- Lack of faculties
- High education fees
- Less support from govt

Loopholes in existing system

- No prior focus on the tracking of dropout rates.
- There isn't any dedicated solution that can provide detailed insight into the dropouts of students.
- Lack of data to process and analyze the information/insights.
- To analyze the reason for the dropout, no previously innovative methods or machine learning modules exist.



The screenshot shows the 'Publications & Statistics' section of the UDISE+ website. The top navigation bar includes links for Home, About Us, Data Capture Formats, Publications & Statistics (which is the active tab), FAQ's, and Contact Us. A search bar labeled 'Search' is also present. The main content area features a large banner with the text 'PUBLICATIONS & STATISTICS'. Below the banner are two tables: 'UDISE + Publications' and 'UDISE + Data, Reports & Statistics'. Both tables have columns for S.No., Title, and Download link.

S.No.	Title	Download
1.	Brochure	PDF
2.	UDISE+ Booklet	PDF
3.	Data Sharing Policy (English)	PDF
4.	डेटा शेयरिंग नीति दस्तावेज़ (हिंदी)	PDF

S.No.	Title	Download
1.	UDISE+ 2020-21 Report (English) <small>NEW</small>	PDF
2.	UDISE+ 2019-20 Report (English)	PDF
3.	यूडाइस+ 2019-20 रिपोर्ट (हिंदी)	PDF
4.	UDISE+ 2018-19 Report (English)	PDF
5.	UDISE+ Detailed Tables	GO
6.	Download UDISE+ Micro-data	GO

Approach in solving the problem

- The approach is to train the machine learning models and gather the data based on the different details of students & features or main causes of student dropouts.
- Machine learning models are trained on the pre-existing data, and analyzed using different perspectives. Prediction models are created for each new data entry and tested upon data frames.
- Along with predictions, detailed insight analytics are generated using different data-analytics tools & technologies. The analytics models are generated in a real-time integration.

The solution is using the advanced capabilities of machine learning & data analysis to resolve the problem. It includes independent variables:

- Age
- gender
- academic achievement
- family income
- family members
- parent-child relationship
- school environment
- background

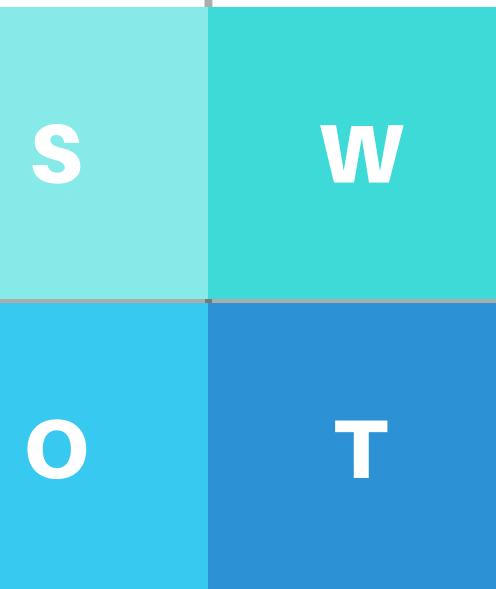
The result showed that there is a **significant relationship between the dropout and student, family, school, and community-related factors.**

STRATEGIC ANALYSIS

SWOT analysis for the project

Strengths

- The system can predict the causes of dropout
- Weaken the social inequalities & improvise education
- **To increase the literacy rate** by reducing the dropout rate
- Provide the GUI-based software
- Provide detailed insights into the dropout-students



Weaknesses

- Wrong information can be shared
- Lack of accurate information
- Dependency upon the stakeholders
(Entering wrong details may cause wrong insights data)

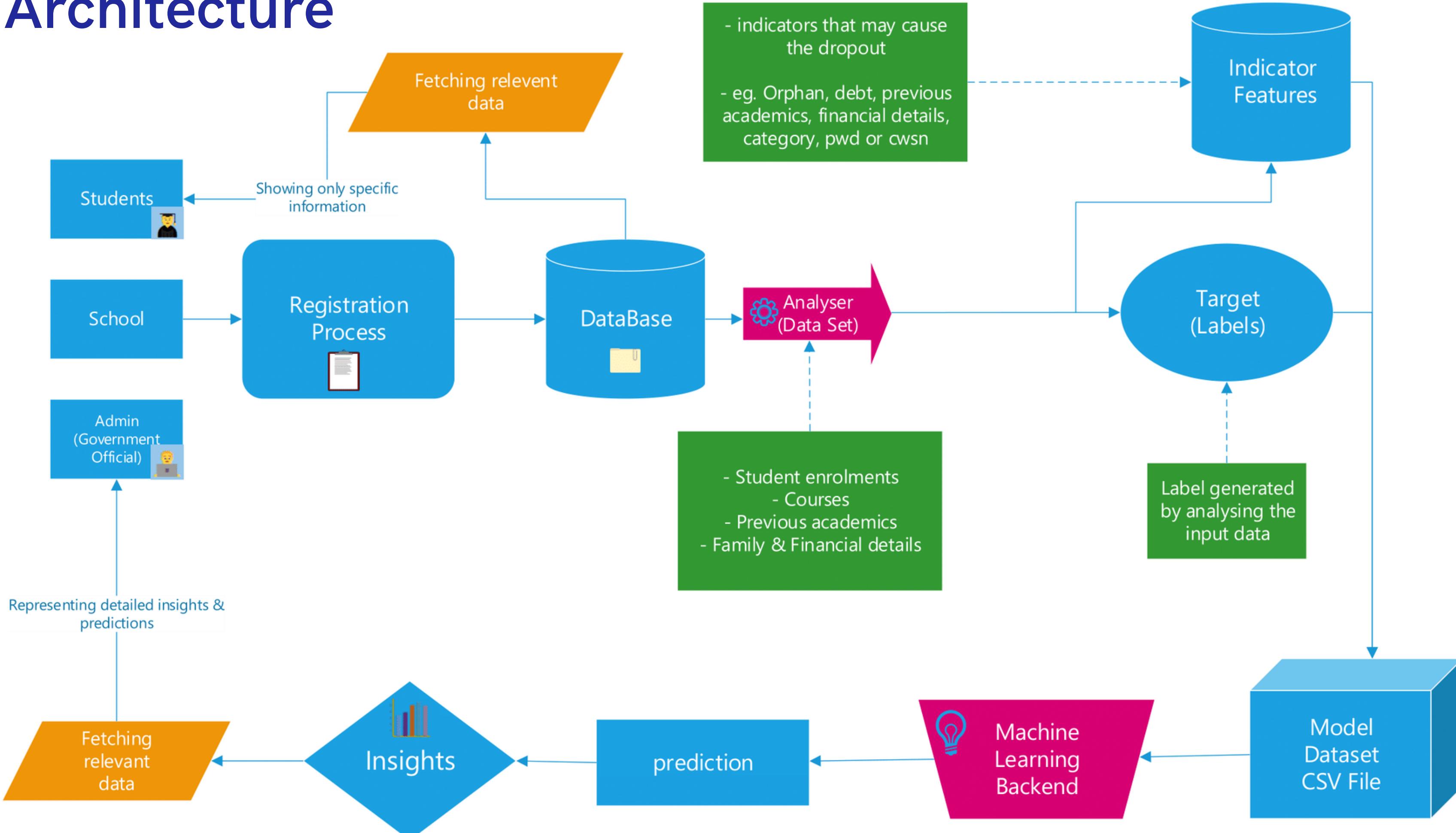
Opportunities

- Such detailed insights into the dropout students can cure existing problems
- To educate every student - by reducing dropout rates
- Increase the literacy rates & improvising upon the causes of the dropouts

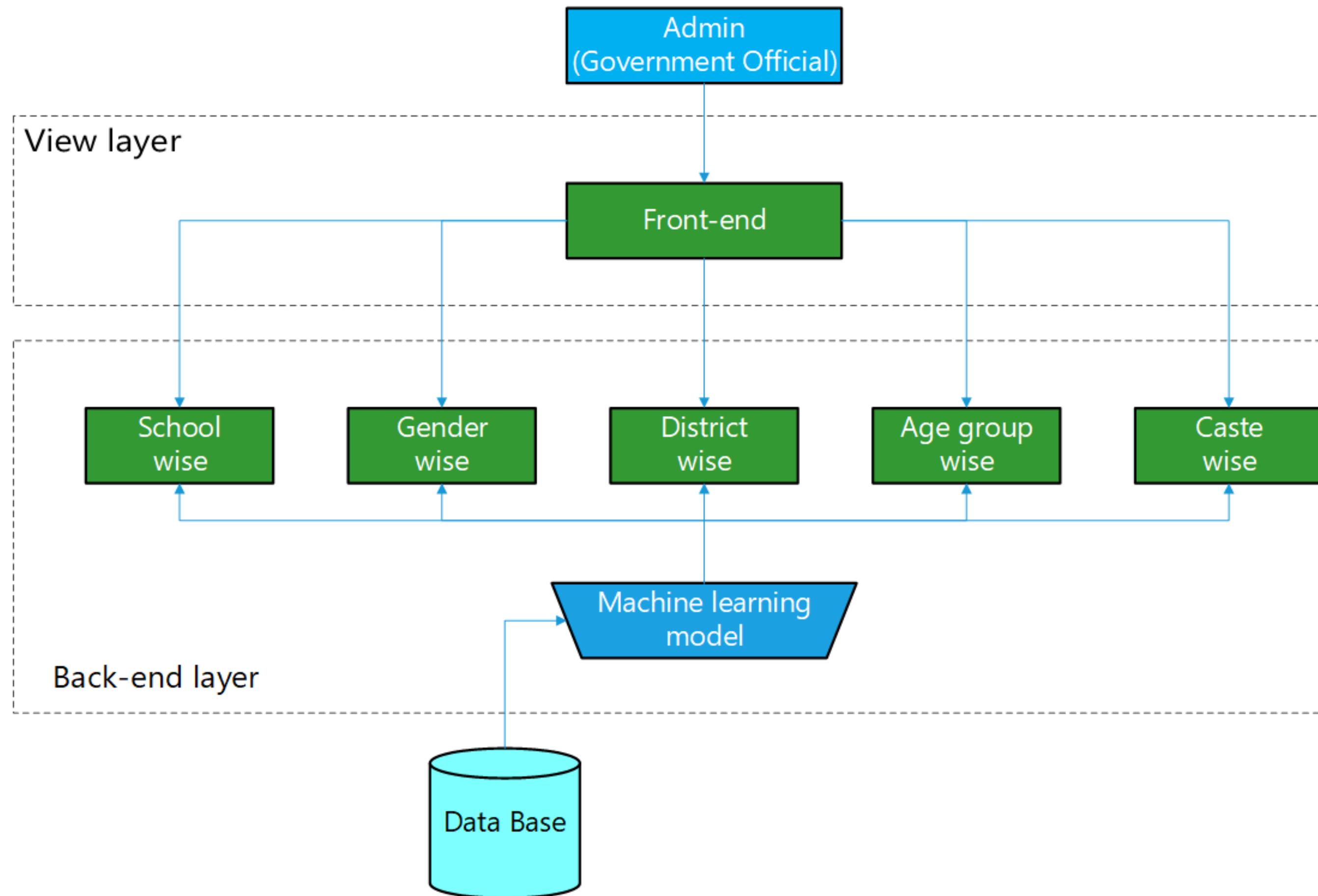
Threats

- Possible security breach

Architecture



Different layers of Admin dashboard



Data Input Forms:

1. Student Details Forms

[Student Details](#) | [Family Details](#) | [Financial Details](#) | [Caste Details](#) | [Academic Details](#)

Student Details

First name Father's name Last name

Date Of Birth: Age:

Gender: Male Female

Orphan: yes no

Aadhar No.

Contact No.

Contact Mail Id.

Disctrict :

Mother
Tongue

CWSN: yes no

Nationality

No. Of Siblings: 1 2 3

Drug addiction: yes no

2. Parent Details, Financial Details, Caste & Category Details

Parent Details		
Father's name	Mother's name	Guardian's name
Contact No.		
Aadhar No.		
Father's Occupation: <input type="radio"/> 1 - working <input type="radio"/> 0 - non-working		
Mother's Occupation: <input type="radio"/> 1 - working <input type="radio"/> 0 - non-working		
Father's Qualification: <input type="button" value="0 - primary"/>		
Mother's Qualification: <input type="button" value="0 - primary"/>		
Financial Details		
Family Annual Income: <input type="button" value="0 - (0 to 2,50,000)"/>		
Debt: <input type="radio"/> 1 - yes <input type="radio"/> 0 - no		
BPL beneficiary: <input type="radio"/> 1 - yes <input type="radio"/> 0 - no		
ews: <input type="radio"/> 1 - yes <input type="radio"/> 0 - no		
Caste & Category Details		
Social Category: <input type="button" value="1 - SC"/>		
Minority: <input type="radio"/> 1 - yes <input type="radio"/> 0 - no		

3. Academic details

Academic Details

School Number

Admission Number

Admission Date

Academic Stream:

Status in previous year:

Previous year Grades

Result in previous year type:

Out of the school child: 1 - yes 0 - no

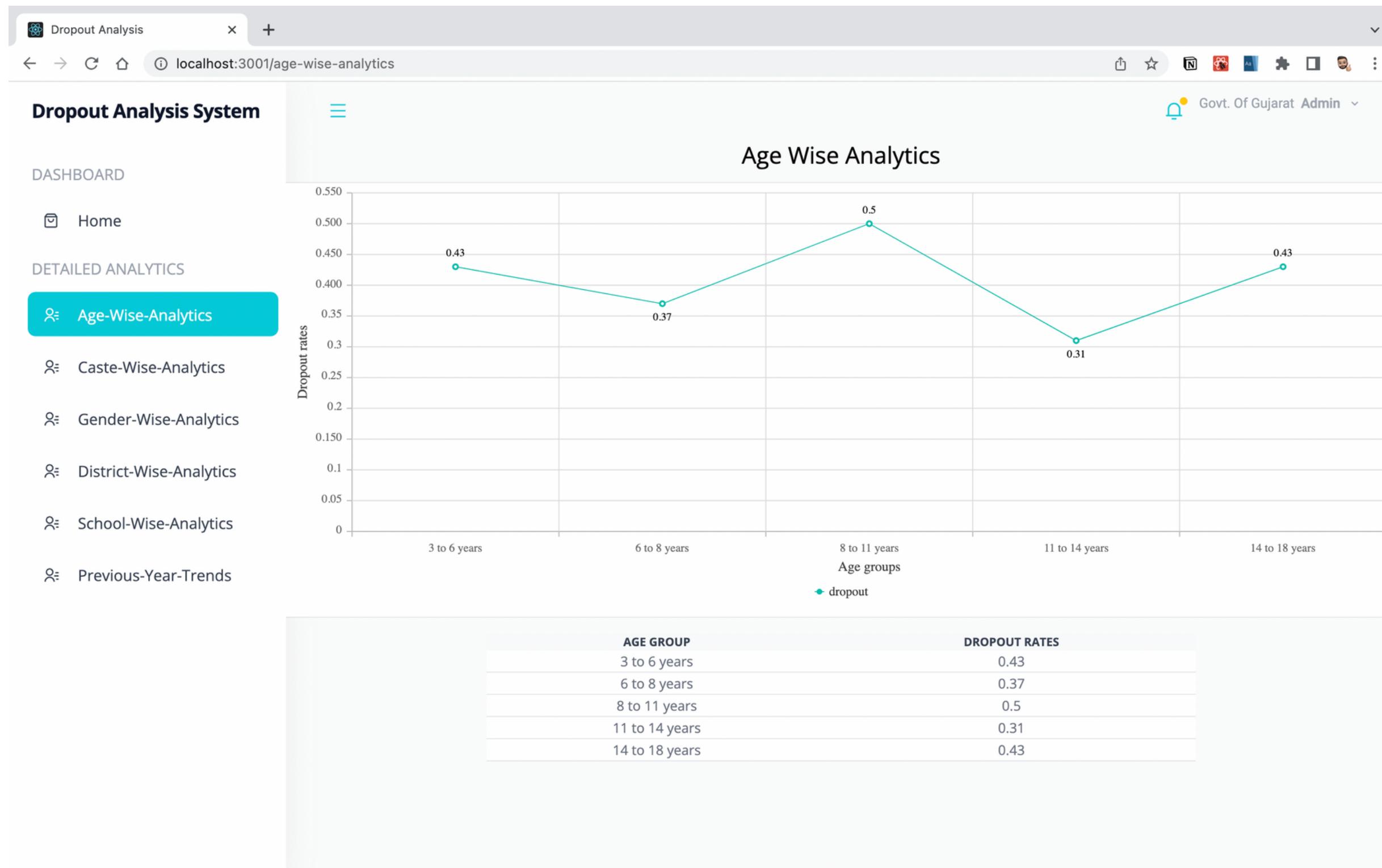
Appeared in previous year examination: 1 - yes 0 - no

Scholarship Holder: 1 - yes 0 - no

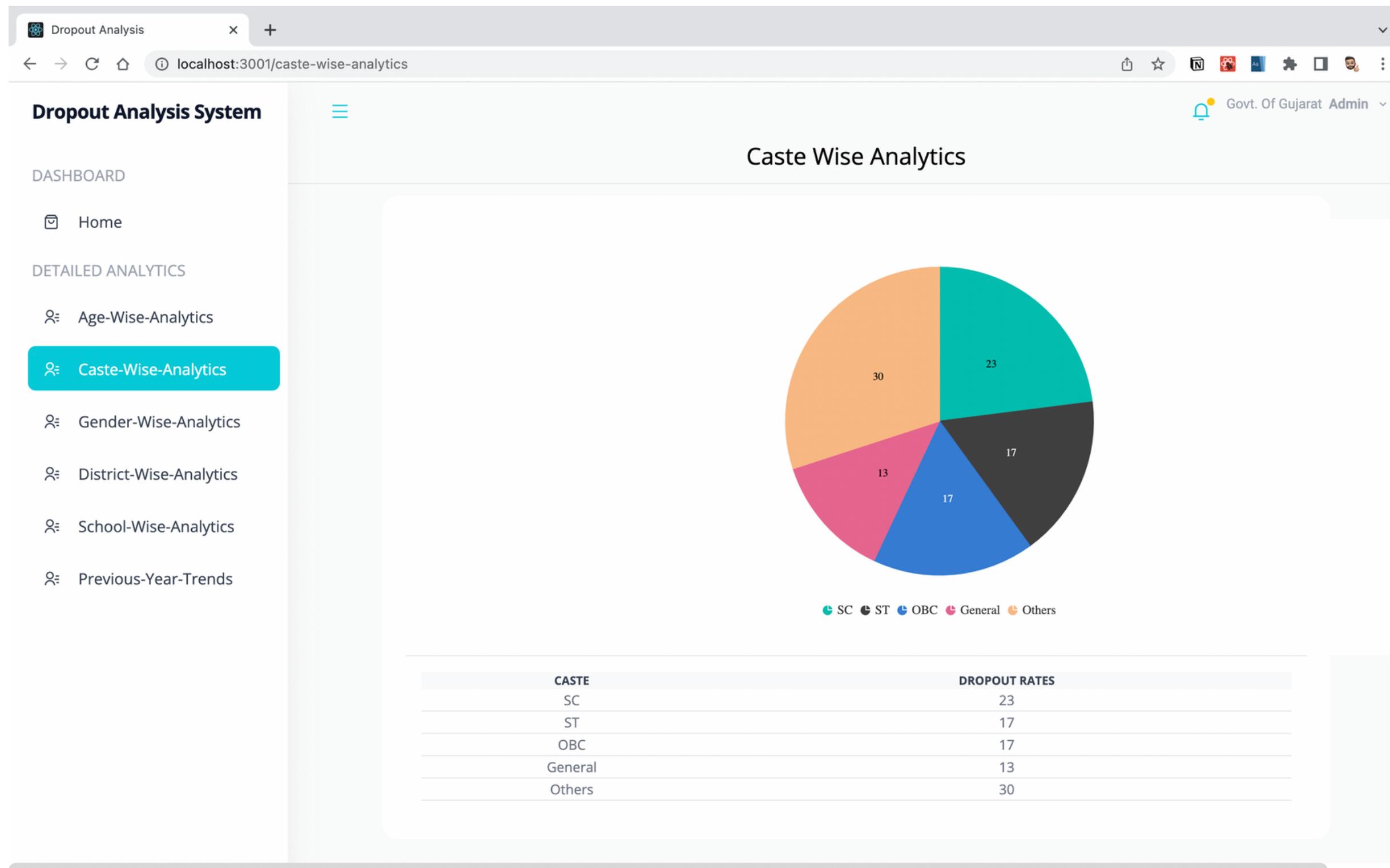
Student is dropped or continued?: 1 - yes 0 - no

Admin Dashboard

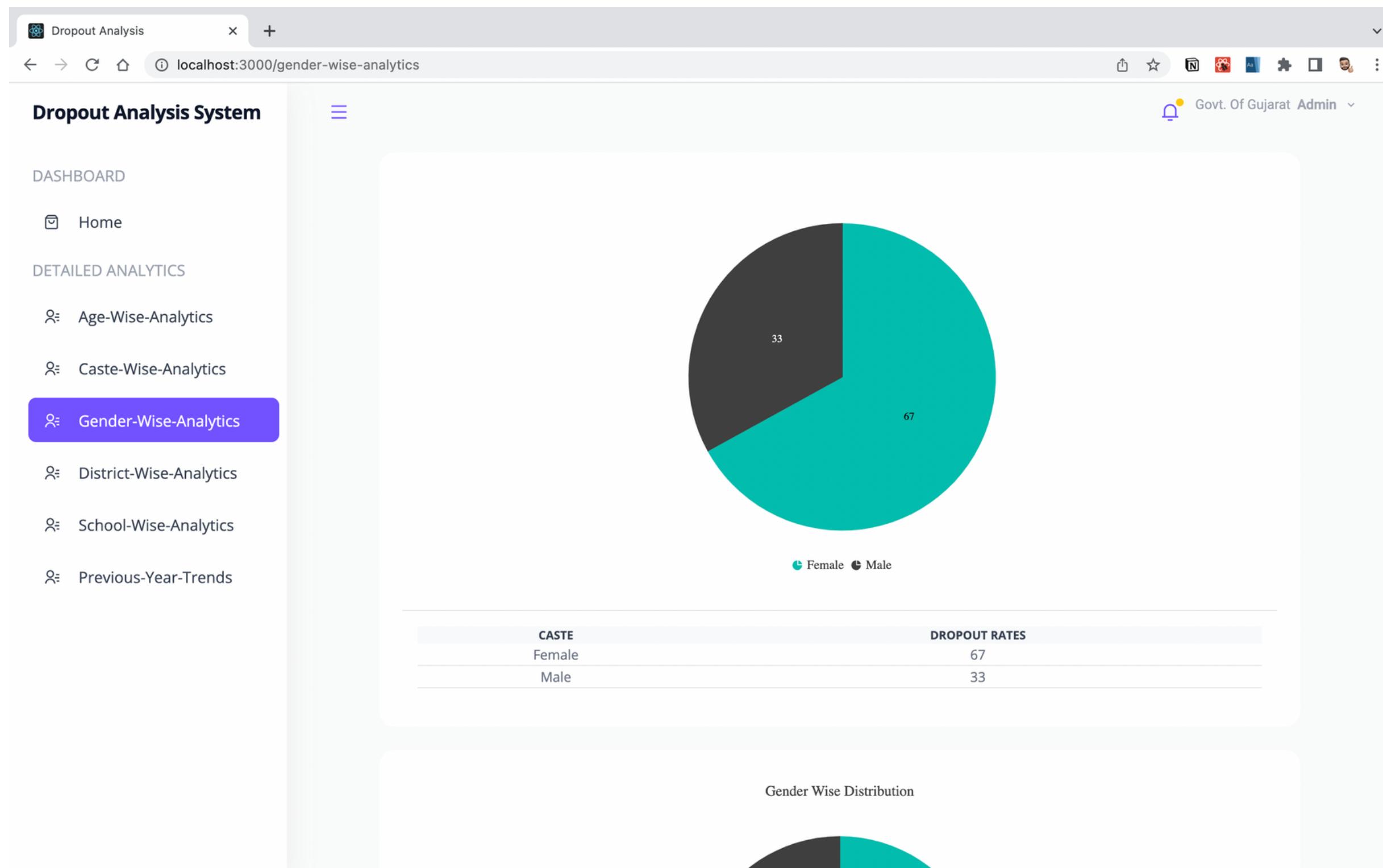
1. Different Detailed Analytics are displayed in the admin dashboard



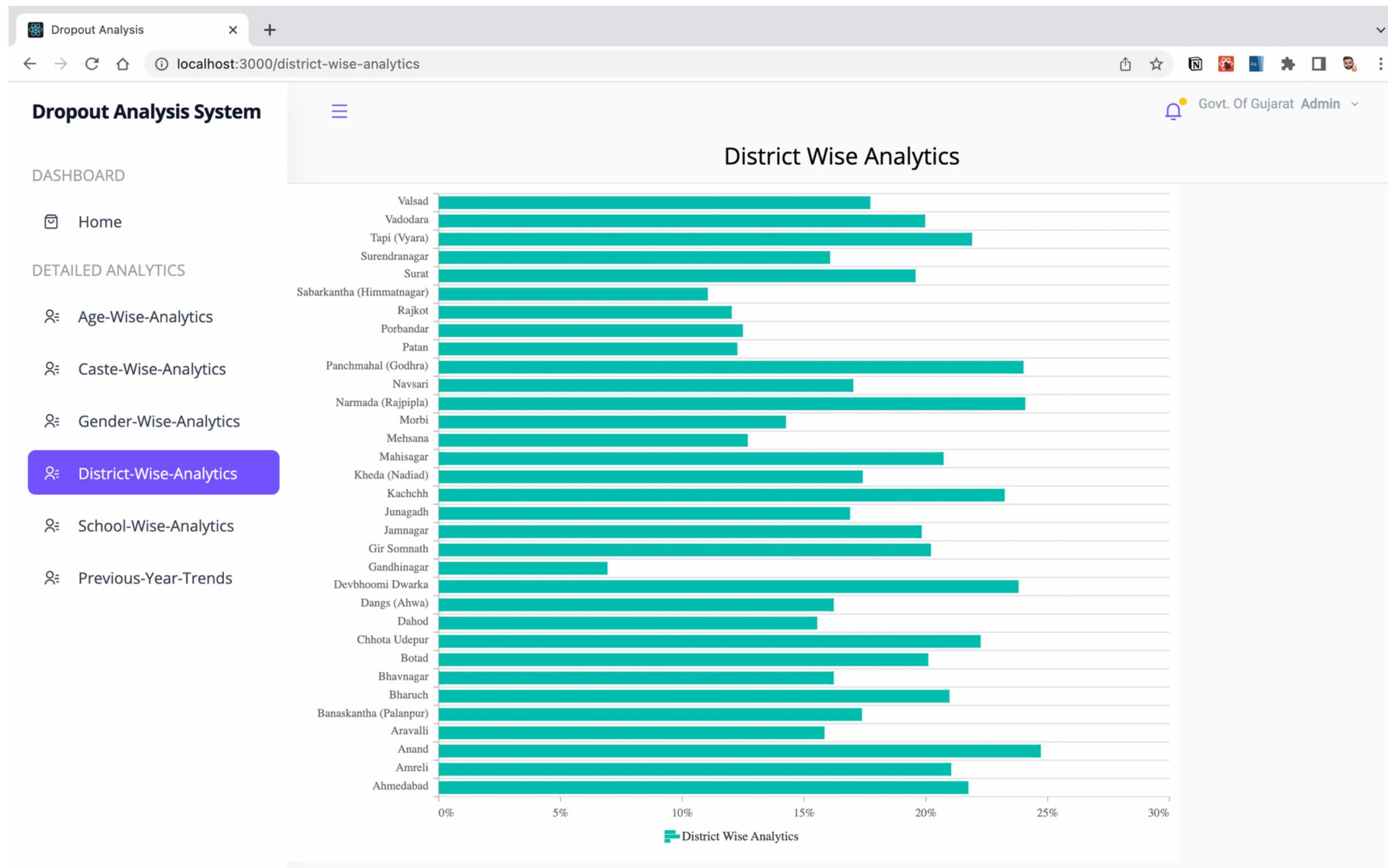
2. Caste Wise Analytics



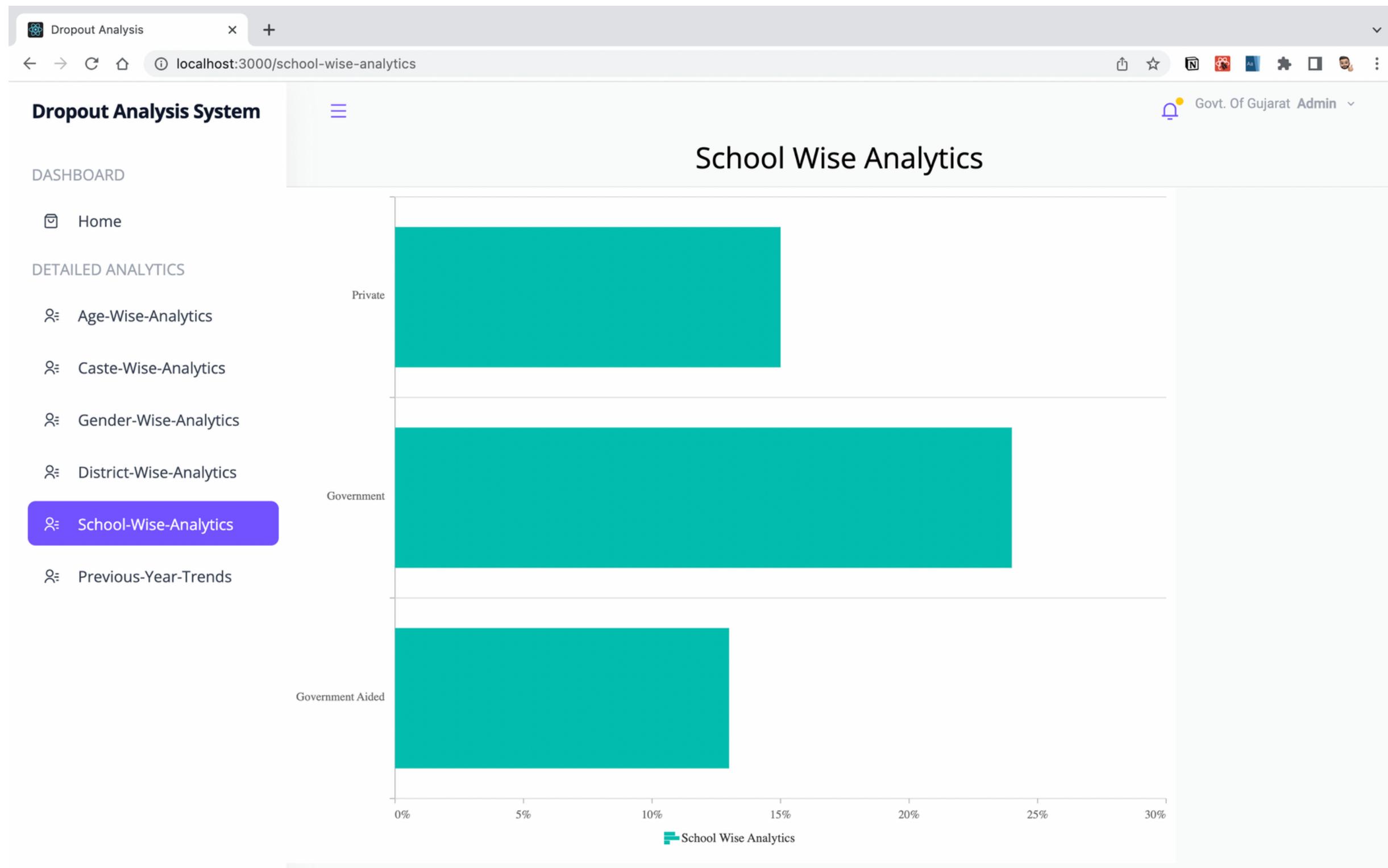
3. Gender Wise Analytics



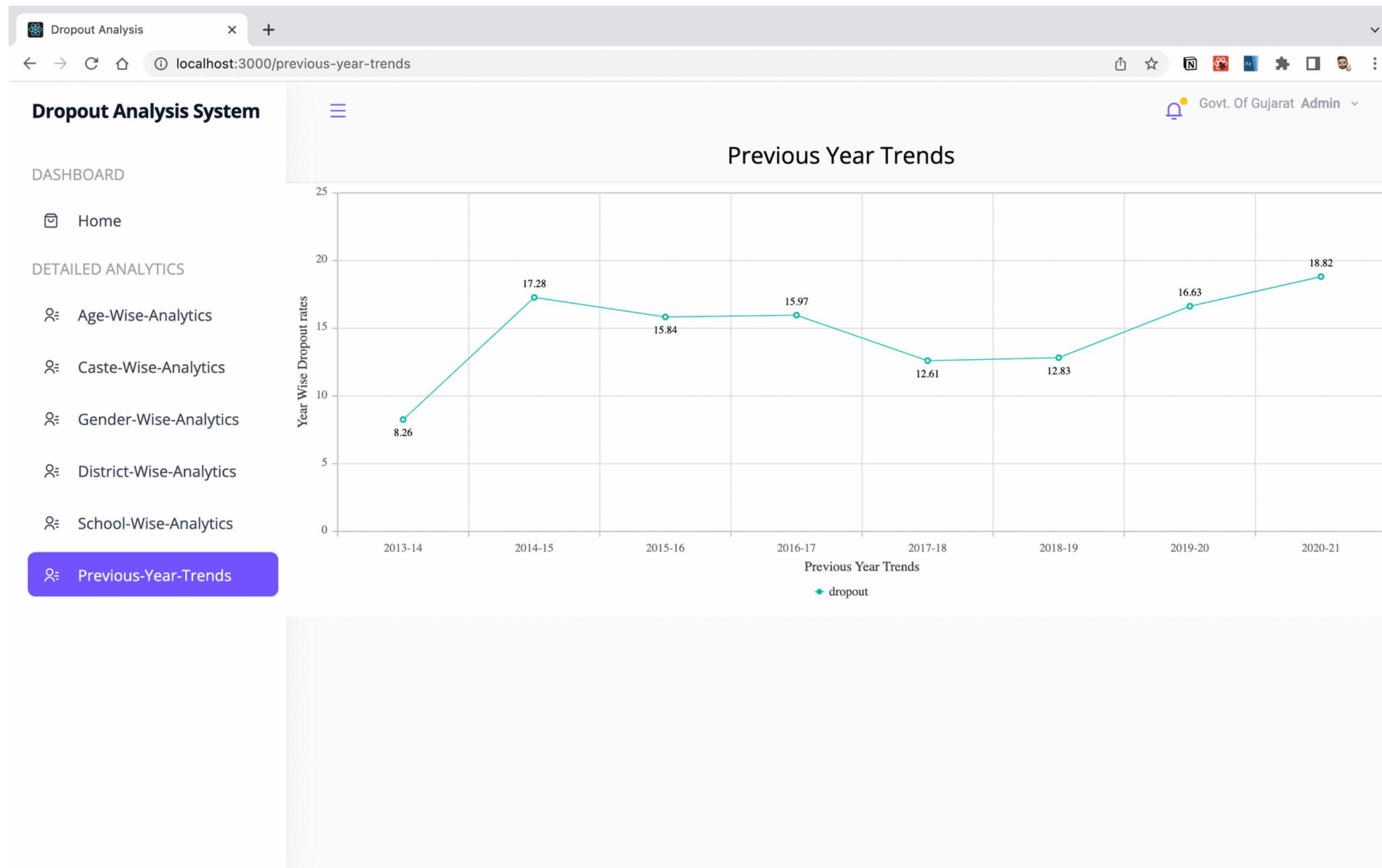
3. Age Wise Analytics



4. School wise analytics



6. Previous year trends



Benefits of the system

- Detailed dashboard for providing easy-to-understand insights on the data. Generating the data analytics using the analytics model.
- Additional feature of providing - a prediction based on the previous trends and generating the
- Important to analyze the sustainability and efficiency of the education system.
- Early dropout prediction helps the organization to retain the students from the respective academic program.
- Being able to predict it could help to alleviate its social and economic costs.

Conclusion

- Having detailed analysis and insight data on the student dropout system will help the education system a lot from many different perspectives.
- By analyzing the data according to different aspects - **official bodies can improvise upon specific areas and increase literacy rates significantly.**
- The different causes of student dropouts can be analyzed and published using an analytics/machine learning model. Afterward, the official bodies can provide possible solutions to resolve the causes of dropouts.