Summary Report on Student Dropout Insights

Overview

This report synthesizes insights from various analyses of student data, focusing on demographics, academic performance, financial factors, and dropout rates. The findings highlight trends that can inform targeted support initiatives to improve student retention and success.

Key Insights

1. **Academic Performance**
- Histograms and box plots indicate that most students have low to moderate parental education levels, impacting their academic performance, which clusters around specific grades.
- The correlation heatmap reveals strong positive relationships between curricular unit approvals and grades, particularly between the first and second semesters.

2. **Dropout Rates**

- Approximately 1,500 students fall into the Dropout category, indicating a significant number who did not complete their education.
- The scatter plot shows that while some students with lower admission grades achieve satisfactory first-semester performance, ongoing academic support is crucial to prevent dropout.

3. **Financial Factors**

- A mix of scholarship holders exists among students, with financial stability linked to tuition payment status.
- The correlation matrix suggests that while higher admission grades correlate positively with student success, factors like GDP and tuition fees have weaker associations with dropout likelihood.

4. **New Hypothesis testing.**

- Null Hypothesis (H0): There is no significant association between tuition fees status and student dropout (i.e., students with unpaid fees are equally likely to graduate as those with fees up to date).

- Alternative Hypothesis (H1): There is a significant association between tuition fees status and student dropout (i.e., students with unpaid fees are more likely to drop out).

- Conclusion: Students who do not have their tuition fees up to date are significantly more likely to drop out compared to those who have paid their fees. so we accepted the alternative hypothesis.

Recommendations

- Interventions should focus on providing ongoing academic support to maintain student engagement and performance, particularly for those at risk of dropping out.
- Addressing financial barriers and ensuring timely tuition payments could further reduce dropout rates.

Conclusion

The analyses underscore the importance of academic performance as a critical determinant of student retention. Targeted support initiatives, informed by these insights, could significantly enhance student success and reduce dropout rates.