

SEATTLEU

Decoding Enrollment Dynamics:
Unveiling Trends and Drivers of Student Matriculation

AAA

(Awesome Analysts of Albers)

Agenda

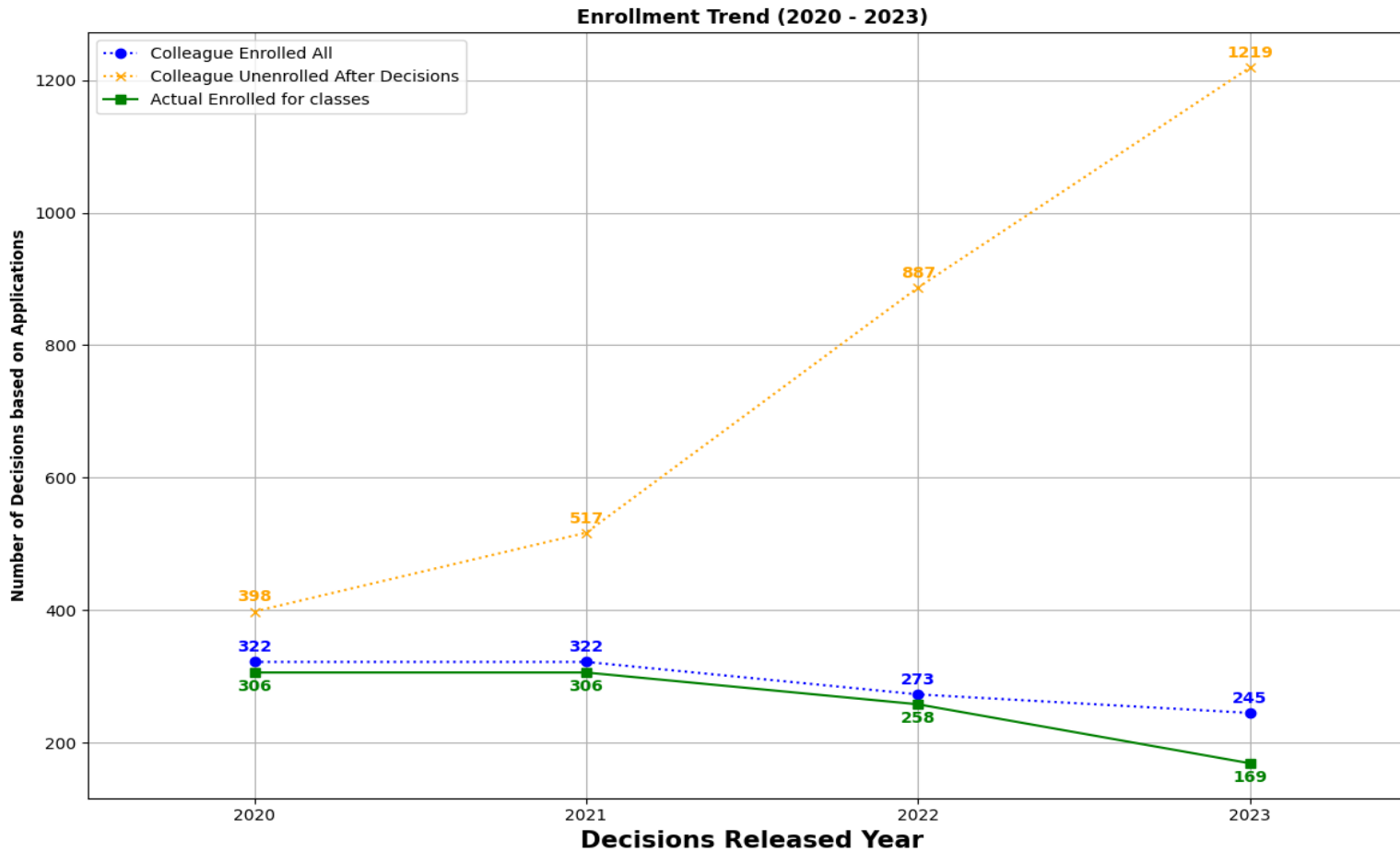
- Trends:
 - Enrollment trend over 4-years.
 - Enrollment trend over 4-years by program categories
- Factors influencing the likelihood of enrollment:
 - Student profile: Demographic factors.
 - Academic factors.
 - External factors.
- Insights achieved from the analysis of the data:
 - Insights related to funds.
 - Key insights.
 - Additional insights (unique)
- Prediction
- Appendix



Disclaimer: All insights are analyzed only on the given dataset with no external data.
All enrollment predictions are subject to vary based on increasing count of applicants, and various external factors.

Trends and Their Shifts

Enrollment trend over the past 4 years:



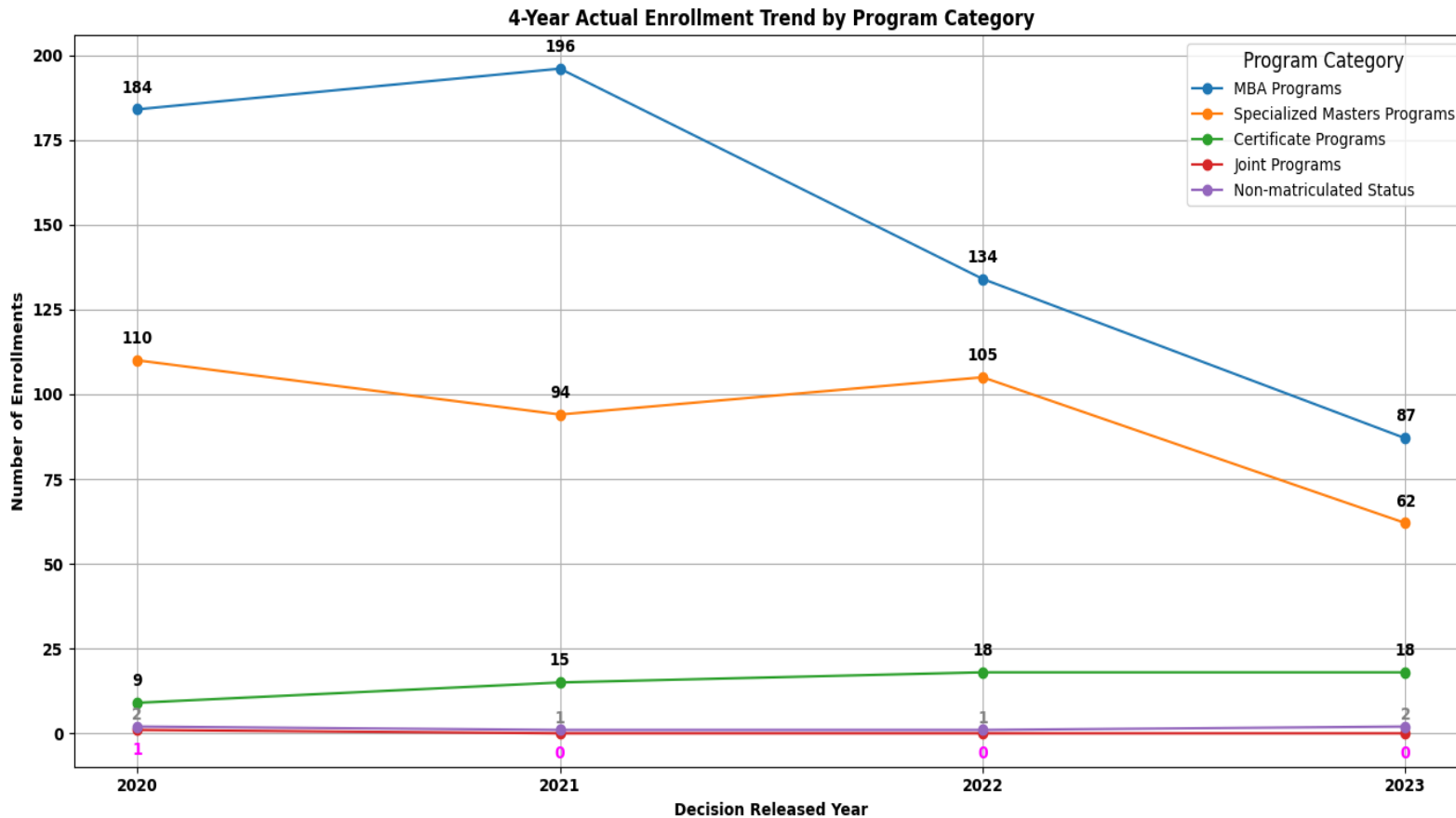
Over the year, there has been a drastic increase of unenrolled students from classes after decision of enrollment.

The number of all enrolled students in Colleague have a decrease over the years.

The students who have actually enrolled for classes have decreased in 2022 and 2023.

Trends and Their Shifts

4-year trend of actual matriculation for each program categories



MBA programs seems to have a significant decrease in the actual matriculation

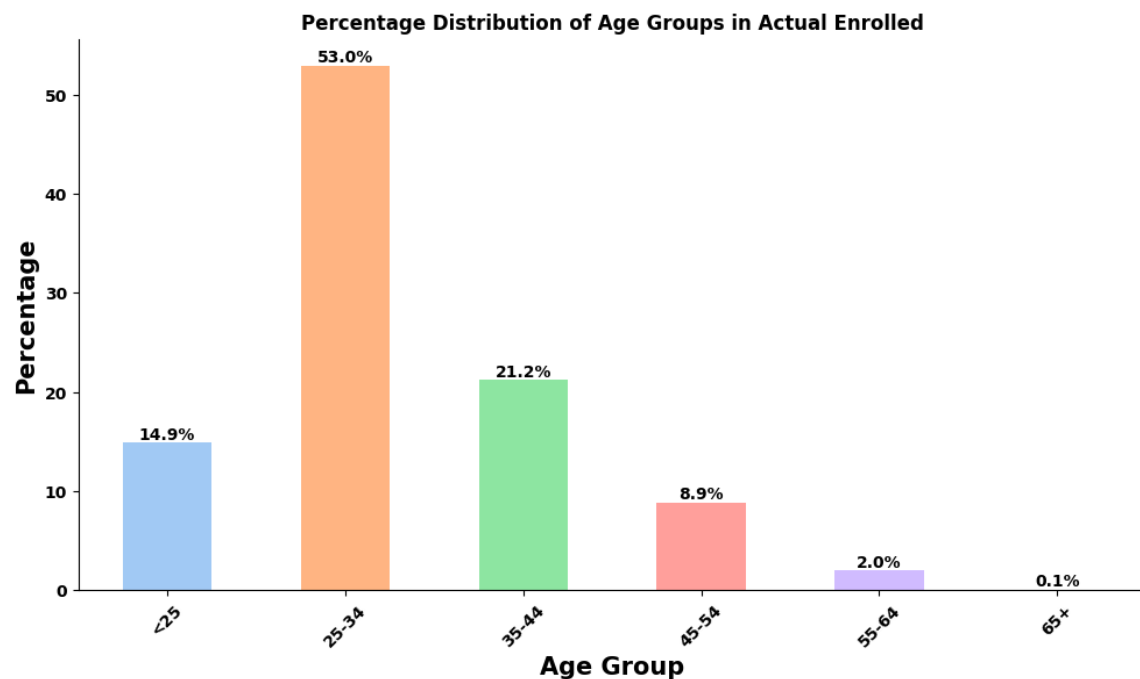
Masters Programs have shown a steep decline of matriculation in 2023

Certificate Programs are having somewhat steady numbers across the years.

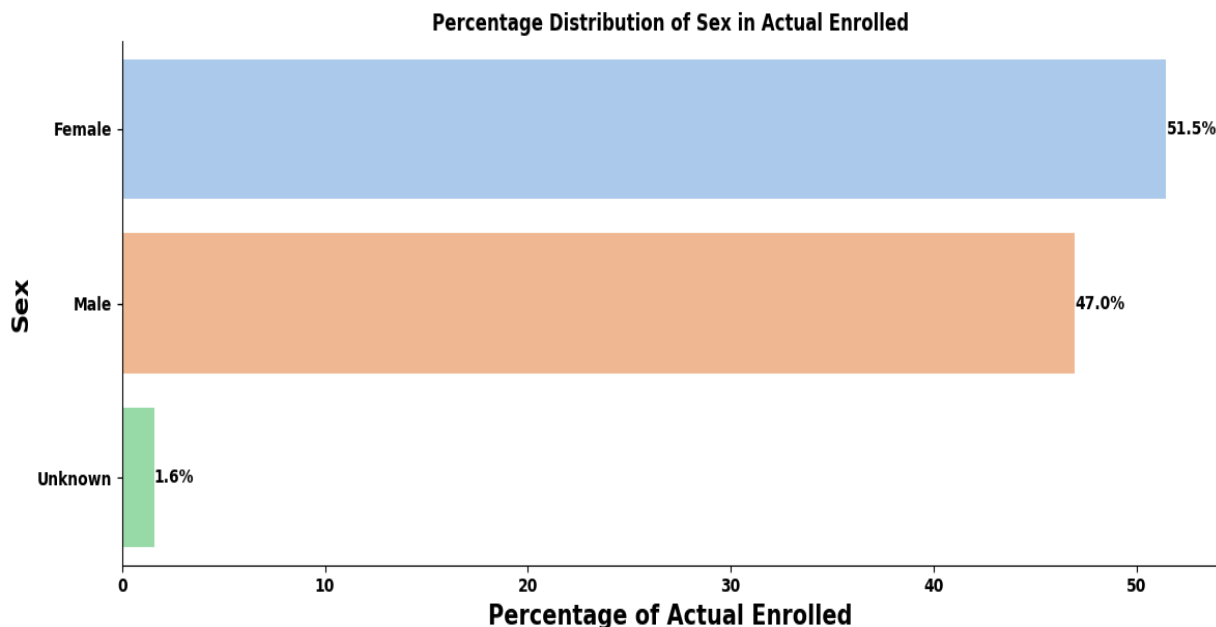
Joint programs and Non-Matriculated Status do not have much difference over the years

Student Profile- Demographic Factors

How do Age and Sex Influence the actual matriculation for all programs?



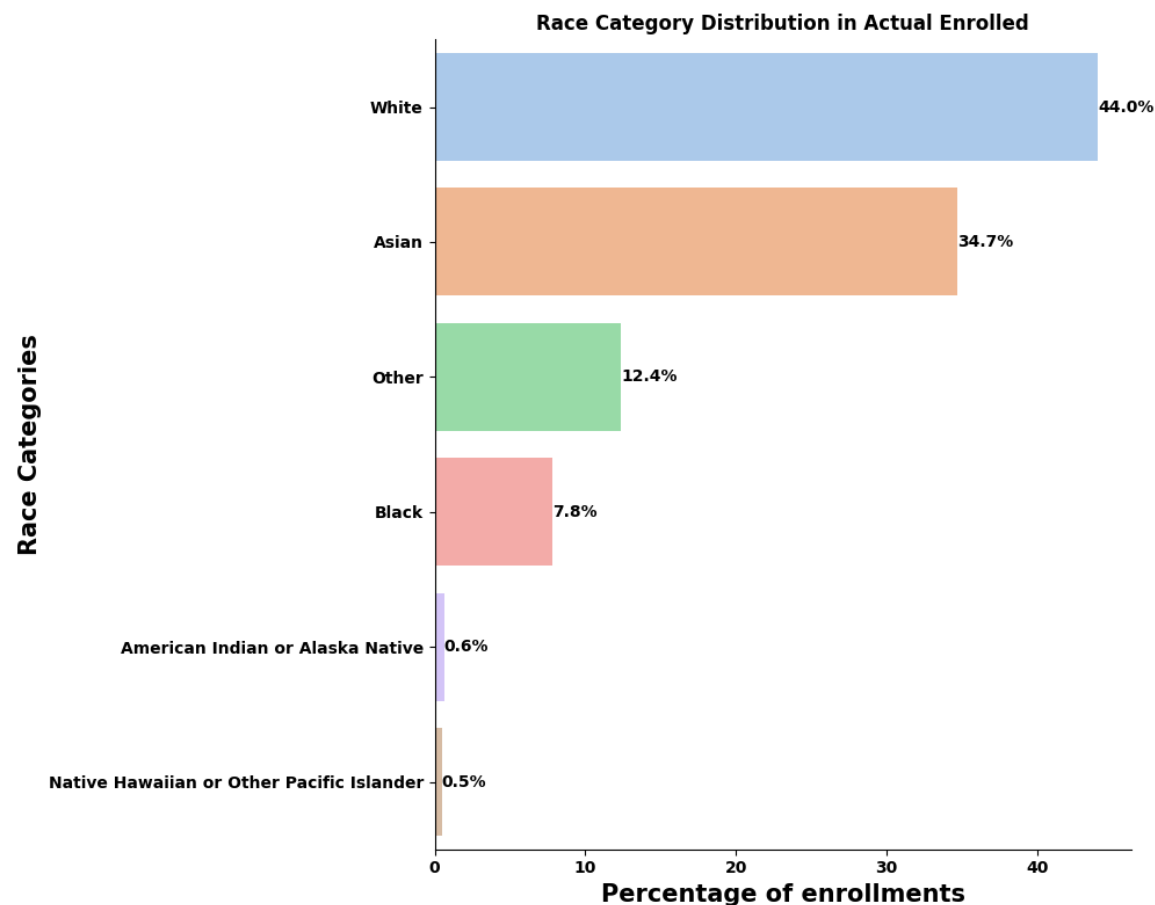
- The most enrollments are within age range from 25-34 (53.0%).
- We have less enrollments for the Age less than 25 which is a crucial age of education.



Females are more likely to enroll about 51.1% while males are little less at 47%

Student Profile- Demographic Factors

Does Race Influence the actual matriculation for all programs?



- Students of white race have the most enrollment (44.0%) while Black race comprises of only 7.8% of the enrollment.
- Albers needs to focus more on diversity and inclusion in programs.

Student Profile- Demographic Factors

Focusing on MSBA program

- **Gender:** Nearly 50% female and 49% male identifying students. Small percentage (1%) who prefer not to disclose their gender.
- **Race/Ethnicity:** 57% of students identify as Asian, followed by 27% who identify as White. 9% of students come from other racial or ethnic backgrounds, and 5% identify as Black.
- **Age:** The range of ages in our programs is broad, spanning from 20 to 56 years old.
- **Scholarships:** 29% have not yet been awarded a scholarship. However, a significant portion (37%) receive scholarships ranging from \$1200 to \$8400. Additional students receive awards between \$4800-7200 (10%) and \$1200-3600 (2%).
- **Program Discovery:** 24% discovered our programs through the SU website, and another 24% used our Graduate program search. Word-of-mouth also plays a role, with 18% learning about us through referrals.



Academic Factors

Influence of GPA on actual enrollment

GPA factors(Recalculated and Converted)

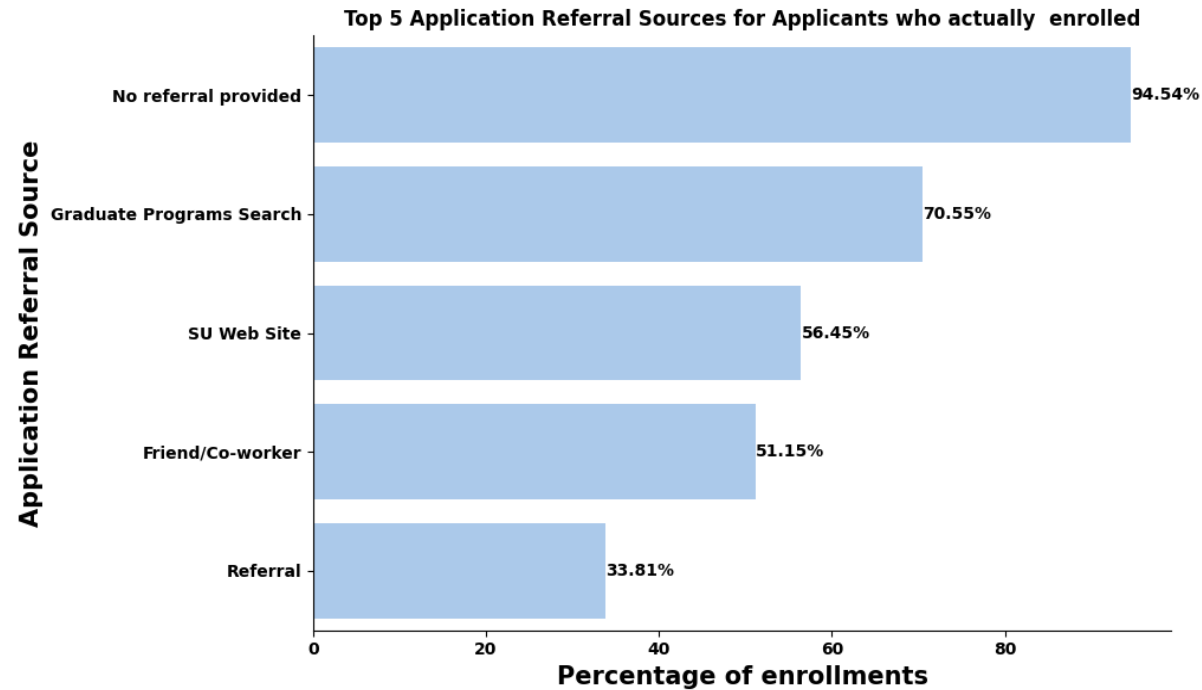
- MBA: Medium GPA(2.5-3.5) is the most common profile of people who are enrolled
- Masters program: They accept more students with high GPA profile (3.5-4.0).
- MSBA program: The GPA ranges from low to high (2.2-4.0)
- Certificate programs: Most students have Medium GPA(2.5-3.5) and few have high GPA(3.5-4.0)
- Joint Programs: Most students have medium GPA(2.5-3.5)
- Non-Matriculated : Most students have high GPA and also a smaller section of students with medium and low GPA.

Key Recommendations:

- MBA programs can increase intake of high GPA(3.5-4.0) students.
- Masters programs can also increase intake of more students of Medium GPA(2.5-3.5)

Note: We do not have GPA values for many individuals captured in dataset

External Factors

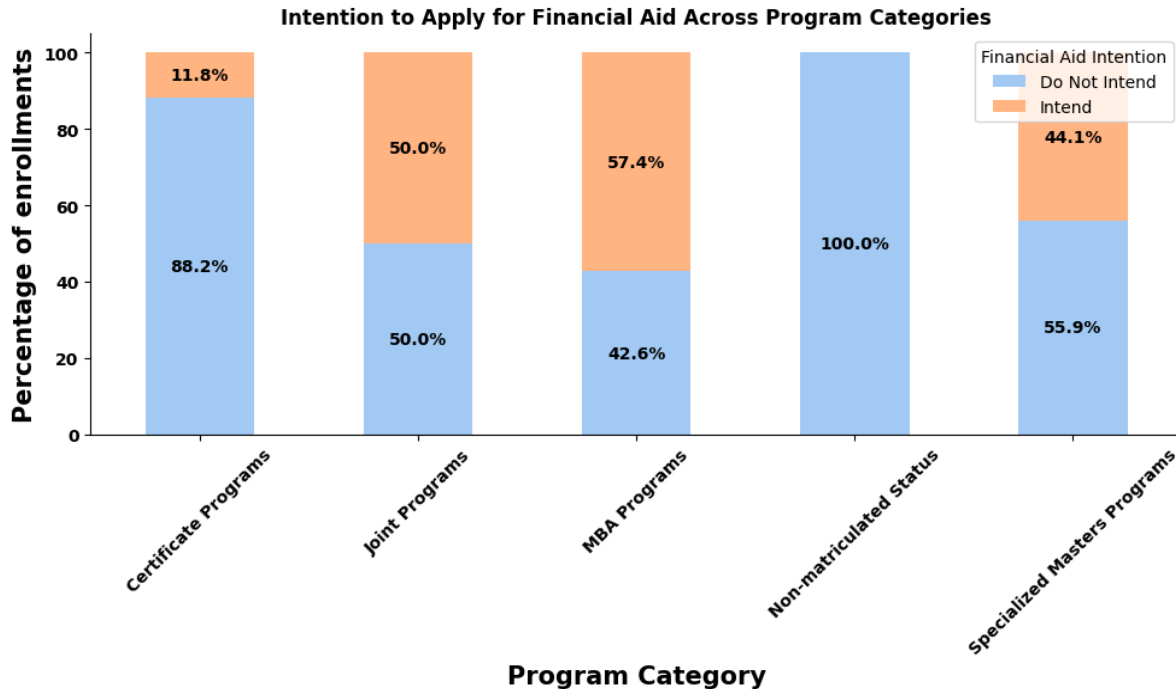


Key takeaways by Programs:

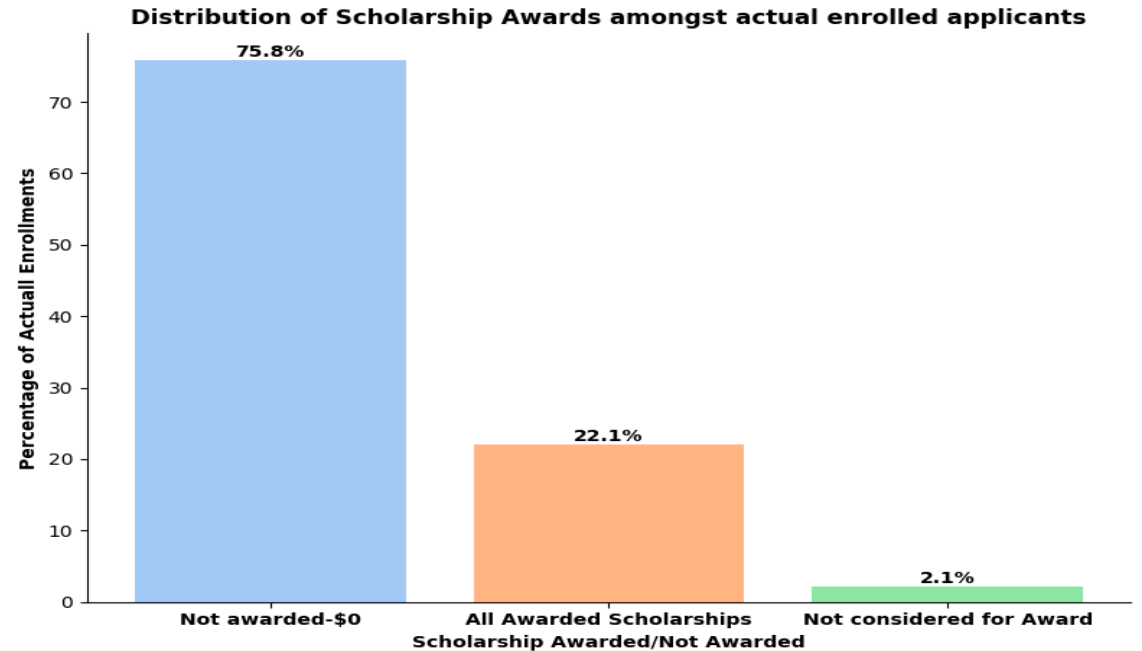
- MBA, Certificate and Non-Matriculated Status programs have highest enrollments through 'Friend/Co-worker' referral and only 5.9% enrollments through 'Referral'
- Masters programs has highest enrollment through 'Gradate Programs Search' and least through 'Referral'

Insights Related to Funds

The below analysis are based on student profiles who matriculated



- Increasing funds for financial aid in MBA program will help in more matriculation rate.
- About 44% students wanted Financial Aid and increasing funds for that will help to bring in more Masters students in future.



By program-

- MBA programs provided high amount of scholarships and if continued to do so might increase enrollments.
- Masters program have many applicants who were chosen but not awarded any scholarship.
- Certificate Programs has the least number of scholarship awarded to enrolled students.




Key Insights



Only 12.26% students were actually enrolled for classes even though 42% of the students got decisions and then unenrolled.



For the MSBA programs, students with black race are just 5%. So, the department can consider increasing those numbers.



Test scores(0.08%) and print advertisement(0.32%) are the least two influencing application resources on actual enrolled students across the program.

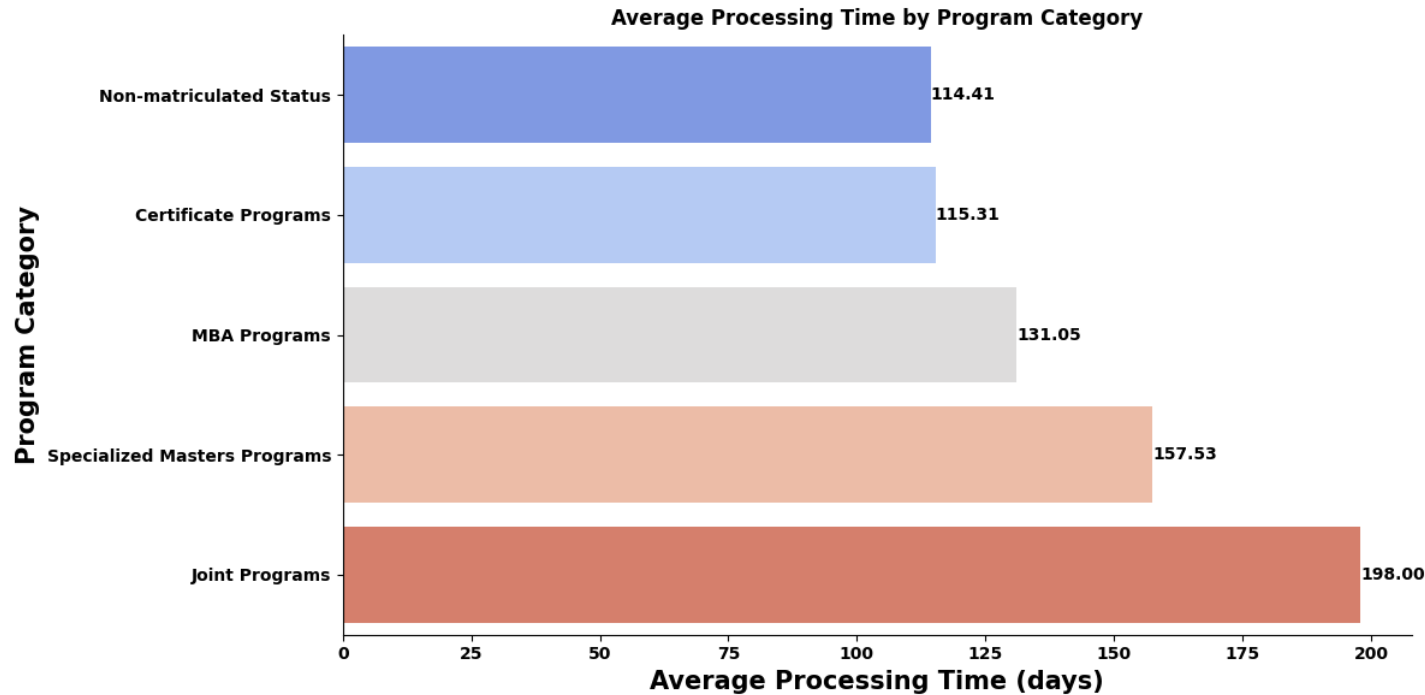


The programs need to increase their GPA acceptance range to be open for more enrollments.



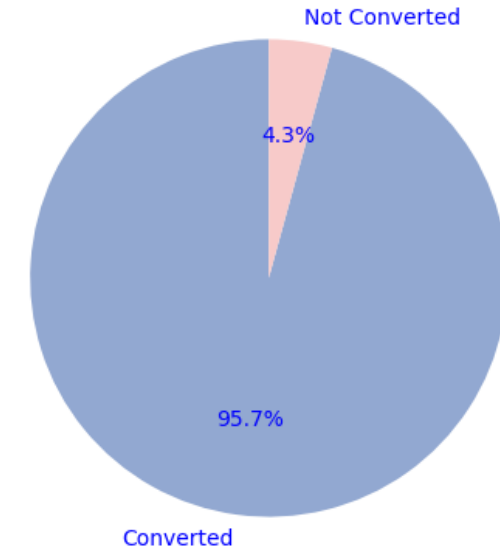
Providing scholarships and financial aids could lead to more matriculation.

Additional Insights



- Masters and MBA Programs should try to take less processing time to avoid students from waiting for decisions

Inquiry to Application Conversion Percentage



- 96% of the students inquiring for a certain Application Program is applying for the same.
- This makes sure the Admission department actively process inquiry requests



Insights from Approached Models

Decision Tree Model: Identifying factors influencing whether an applicant matriculates.

Strengths:

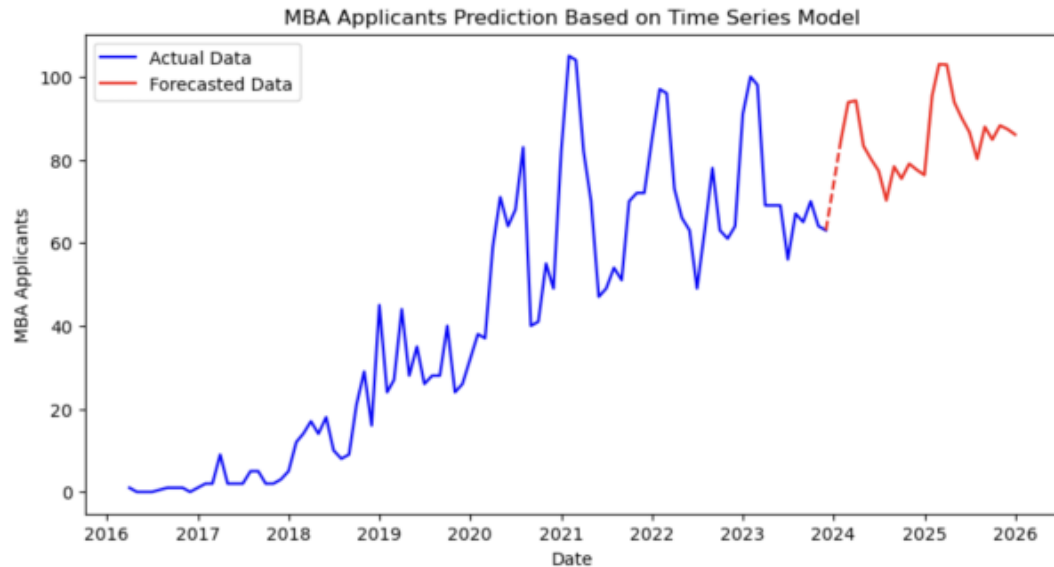
- Excellent for categorical outcomes (e.g., matriculate or not).
- Intuitive and easy to interpret.

Insights:

- Applicants from WA are more likely to Matriculate
- Applicants that don't have Scholarship are less likely to Matriculate
- Applicants that are under 25(just graduated from university) are likely to Matriculate
- Applicants that don't have any referral source are less likely to Matriculate

Predictions

Forecasted Application Outcomes by Program for 2024 and 2025 Based on Time Series Model



| Year | Programs | Applications received | Applications admitted | Applications enrolled | (Application received/enrolled) % |
|------|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------------------|
| 2024 | MBA Programs | 970 | 309 | 108 | 11.13% |
| | Special Masters Programs | 1154 | 469 | 65 | 5.63% |
| | Certificate Programs | 166 | 32 | 21 | 12.65% |
| 2025 | MBA Programs | 1086 | 345 | 121 | 11.14% |
| | Special Masters Programs | 985 | 400 | 56 | 5.69% |
| | Certificate Programs | 188 | 36 | 24 | 12.77% |



Appendix 1

Assumption of Program Categories

| MBA Programs | Joint Programs | Specialized Masters Programs | Certificate Programs | Non-Matriculated status |
|---|--|--|---|---|
| <ul style="list-style-type: none">• Business Administration (Professional) - MBA• Leadership Executive Master of Business Administration - MBA• Business Administration - Bridge - MBA• Business Administration (Professional) - MBA - Online Instruction• Early Career Masters of Business Administration• Sport and Entertainment Management – MBA | <ul style="list-style-type: none">• Business Administration (Professional), joint Juris Doctor - MBA/JD• Accounting, Joint Juris Doctor - MPAC/JD• Sport Business Leadership, joint Juris Doctor - MSBL/JD | <ul style="list-style-type: none">• Finance - MSF• Business Analytics - MSBA• Accounting and Analytics - MS• Sport Business Leadership- MSBL• Business Analytics - MSBA - Online Instruction• Accounting (Professional) - MPAC• Accounting (Professional) - MPAC Advanced• Business Analytics with Finance degrees - MSBA/MSF | <ul style="list-style-type: none">• Executive Leadership Certificate• Business Analytics Certificate• Marketing Certificate• Finance Certificate• Accounting Certificate• Global Business Certificate• Business Administration Certificate• Leadership Formation Certificate | <ul style="list-style-type: none">• Non-Matriculated status - Albers School of Business and Economics |

Appendix 2

Application Distribution

Colleague Unenrolled_NoDecision

- Colleague = 0
- Colleague enrolled all
- 8904 applicants(86.45%)

Colleague unenrolled_Decided

- Colleague = 0
- Application status “Decided”
- 4278 applicants(41.53%)

Colleague Enrolled

- Colleague = 1
- Enrolled all
- 1396 applicants(13.55%)

Actual Enrolled

- Colleague status 1 and with a decision reason categorized under one of the following: 'Admit Conditional', 'Scholarship Adjustment', 'Admit Regular', 'Admit Probation', 'Admit Conditional & Bridge', 'Admit Conditional & Probationary', 'Update Term - Post Enroll(CF)', 'Update Major - Post Enroll(CF)', 'Update Term & Major - Post Enroll(CF)', 'Deposit Paid', 'Deposit - Not Required', or 'Deposit Waived/Not Required'.
- 1263 applicants(12.26%)

Appendix 3

| Data Cleaning and Column Transformations | |
|--|--|
| Date transformations | All date columns are transformed to datetime for consistency |
| Age | Dropped Age < 20 |
| 'Visa Type | If blank and 'Application Status' = 'Awaiting Submission and 'Country' not in 'United States': then 'International-Not yet filled' is populated; Else 'Incorrectly filled' |
| Country | If blank: then 'No country provided' |
| Application Referral Source | If blank: transform to 'No referral provided' |
| Previous Degree Institution | If blank: then 'Not provided' |
| Tests - GMAT Total | If blank: then 'Not Record' |
| GPA columns | Transformed to groups: Low(0-2.5), Medium(2.5-3.5) and High(3.5-4) |
| Scholarship awards and their corresponding distributions | 'Not awarded' and 'G0': both have a distribution of \$0; scholarships 'Awarded 1200 - 3600': 'G1 - \$1200', 'G2 - \$2400', 'G3 - \$3600'; 'Awarded 4800 - 7200': 'G4 - \$4800', 'G5 - \$6000', 'G6 - \$7200'; 'Awarded 8400 - 10800': 'G7 - \$8400', 'G8 - \$9600', 'G9 - \$10800'; 'Awarded highest': 'G10 - \$12000' |

Appendix 4

Model Approaches

1. Model 1

Decision Tree for Matriculation:

- 1.Key finding 1 for this Decision Tree: Applicants from WA are more likely to Matriculate
- 2.Key finding 2 for this Decision Tree: Applicants with Not Valid for Scholarship are less likely to Matriculate
- 3.Key finding 3 for this Decision Tree: Applicants that don't have referral source are less likely to Matriculate
- 4.Key finding 4 for this Decision Tree: Applicants that are under 25(just graduated from university) are likely to Matriculate

Feature used: 'Application Referral Source', 'Application Program', 'Visa Type', 'Age', 'Race', 'Sex', 'Intend to apply for financial aid', 'GPA (Converted) Category', 'Scholarship Category', 'GMAT', 'Country Category', 'WA'

1. Model 2

Random forest for Matriculation(focused on main programs)

Trained on whole data till 2023.

Predicted on 2024, 2025 application start term data as given based on program.

1. MBA programs: Applicants are 646
Total Predicted Enrollments for 2024 and 2025 in MBA Programs: 48(7.4%)
2. Masters programs: Applicants are 1056(6.06%)
Total Predicted Enrollments for 2024 and 2025 in Masters Programs: 64(6.06%)
3. Certificate programs: Applicants are 100
Total Predicted Enrollments for 2024 and 2025 in Certificate Programs: 4(4%)

Features used: 'Application Referral Source', 'Application Program', 'Country','Visa Type', 'Race', 'Sex', 'Scholarship Category', 'GPA (Converted) Category'

Appendix 5

Model Approaches

- **Model 3**

Time Series Forecasting

Trained on whole data till 2023.

Predicting the total application for MBA, SpecialMasters, Certificate Programs for 2024, 2025.

We use the SARIMAX model to forecast time series data. This model allows for seasonal patterns and has been configured to predict the next 24 months based on historical data.

Assumption of any filtering on data:

- **Which model is selected and why is this model selected?**

Decision Tree Model:

Purpose: Identifies factors influencing whether an applicant matriculates.

Strengths:

- Excellent for categorical outcomes (e.g., matriculate or not).
- Intuitive and easy to interpret; visual decision rules.

Time Series Model:

Purpose: Forecasts the number of applicants in MBA, SpecialMasters, and Certificate programs for 2024 and 2025.

Strengths:

- Suitable for time series data with seasonal patterns.
- SARIMAX can incorporate both seasonal and non-seasonal elements, plus exogenous variables.

Appendix 5

Forecasted Application Outcomes by Program for 2024 and 2025 Based on Time Series Model

