Events Analysis Report for UMD Alumni Association

Team: 0507_07

Present Date: December 9

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Method

Identify the Correlated Variables (Time, Location, Group Code)

Recommendations

Mission Statements & Objectives

GOAL:

Increasing Event Attendance of First Time Attendees & Major Prospect Attendees

Mission Statements:

- To identify the correlated variables (Time, Location, Group Code)
- To understand what type of events attract the objective the most
- To figure out how to optimize the current and future event

Method

Identify the Correlated Variables (Time, Location, Group Code)

Recommendations

Methods

Preliminary Analysis & Further Analysis

Preliminary Analysis:

Focusing on the participation rate, the number of events held in each location, and the number of events held for each group.

- Pie Chart: to see percentage of events held in each location and group
- Heat Map: to see the correlation between all the variables
- Bar Chart: to see number of participants over different days of week
- <u>Histogram/Line Chart</u>: to see number of events and participants over time

Further Analysis:

Understanding how variables related to first time attendees, as well as how variables related to the major prospects.

- Scatter Plot: age of participants
- <u>Histogram</u>: for the location of events and event's intended purposes and audiences (i.e., Group)
- <u>Tree Map</u>: combine location of events and event's intended purposes and audiences

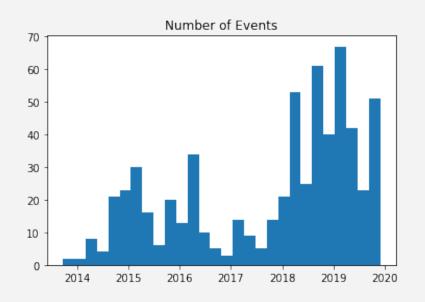
Method

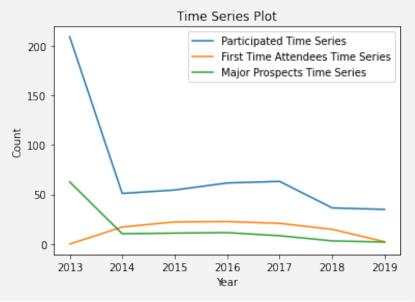
Identify the Correlated Variables (Time, Location, Group Code)

Recommendations

Preliminary Analysis (Time)

Number of events and participants over time



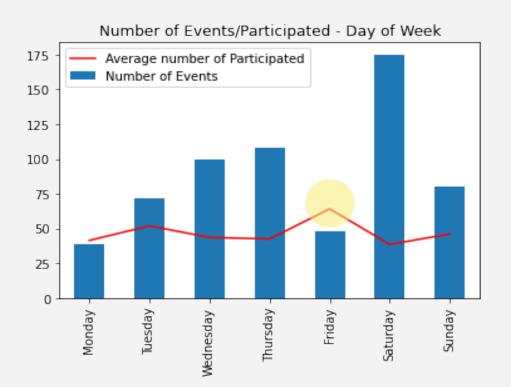


The average number of participants decrease by time, however, the number of events increase.

Namely, holding more events seems not to attract more participants. Consequently, holding more events does not really increase the first time attendees and major prospects.

Preliminary Analysis (Time)

Number of participants over weekdays and weekends



Holding events during weekends does not intuitively attract more participants.

Holding events on Friday seems to attract more participants, whereas on Saturday might have lower participation rate.

Preliminary Analysis

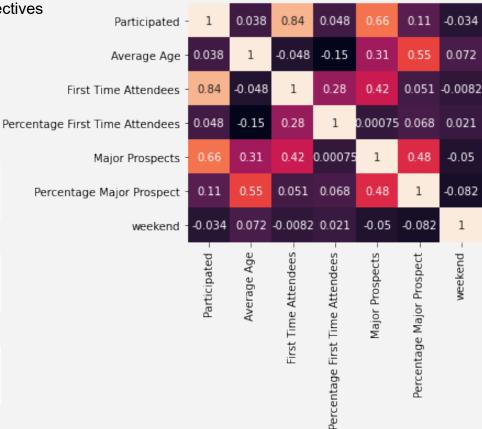
Heat Map: correlation of other variables to objectives

Strong Correlation:

Participated ← First Time Attendees
Participated ← Major Prospects

Holding events during weekend cannot effectively attract more first time attendees and major prospects.

The increase of age of participants seems to increase only the percentage of prospects.



-10

- 0.8

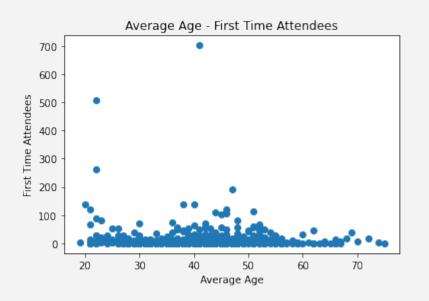
- 0.6

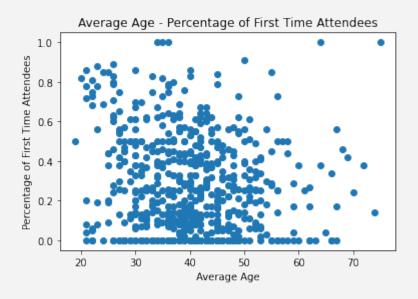
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- 0.2

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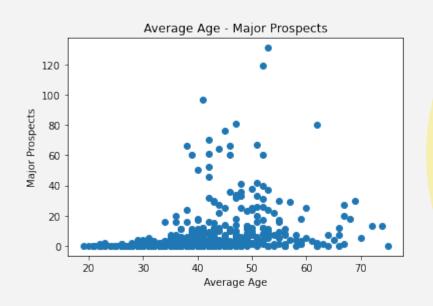
Analysis of Age on the First Time Attendees

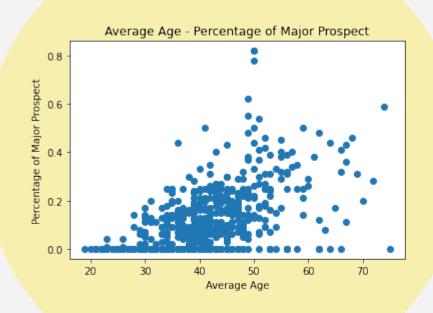




The age of participants seems to not have conspicuous impacts on the number and percentage of first time attendees.

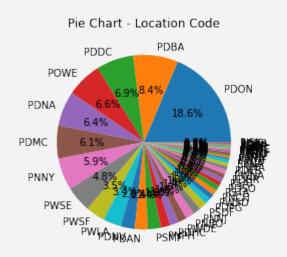
Analysis of Age on the Major Prospects





The age of participants seems to not have conspicuous impacts on the number of major prospects, **yet** there seems to have positive relationship between average age and percentage of major prospects.

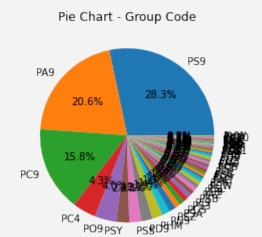
Preliminary Analysis (Location & Group Code)



Percentage of events held in each location

PDON:

The number of events held on campus (DMV area), with 18.6% of the total events, are among the most

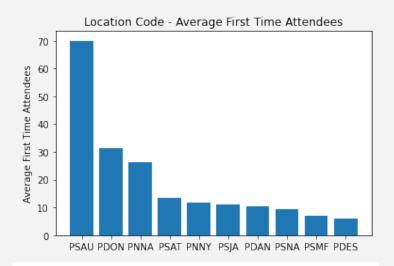


Percentage of events held for each group

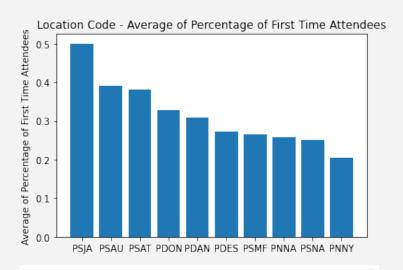
PS9:

The number of events held for Social-General types, with 28.3% of the total events, are among the most

Analysis of Location on the First Time Attendees



PSAU (Southeast- Austin) contributes to the most number of the first time attendees.

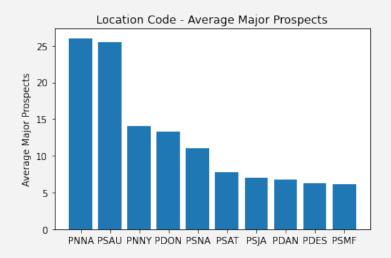


PSJA(Southeast-Jacksonville) has the highest average of percentage of the first time attendee.

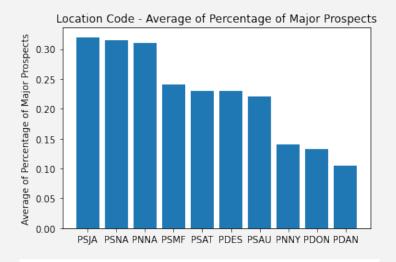
Conclusion:

Regardless the cost of holding an event, holding events at PSAU will probably have higher ROI; However, if to consider the cost, holding events at PSJA might have the highest ROI instead.

Analysis of Location on the Major Prospects



PNNA(Northeast-General) and PSAU(Southeast-Austin), contribute to the most number of the major prospects.

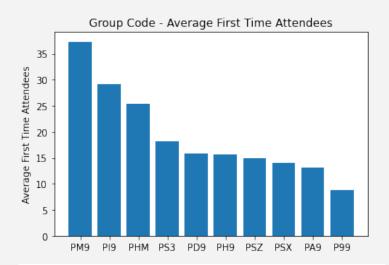


PSJA(Southeast-Jacksonville), PSNA(Southeast-General), and PNNA(Northeast-General), have the highest average of percentage of major prospects.

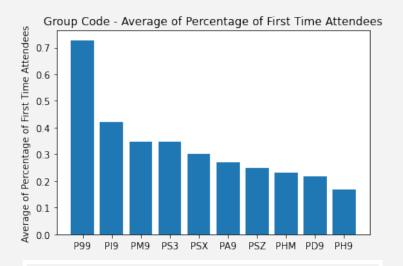
Conclusion:

Regardless the cost of holding an event, holding events at Location PNNA is possible to attract the most number of major prospects. However, if to consider the cost, holding events at Location PSJA might have the highest ROI.

Analysis of Group Code on First Time Attendee



PM9 contributes to the most number of the first time attendees.

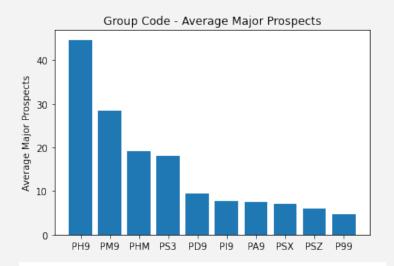


P99 has the highest average of percentage of the first time attendee

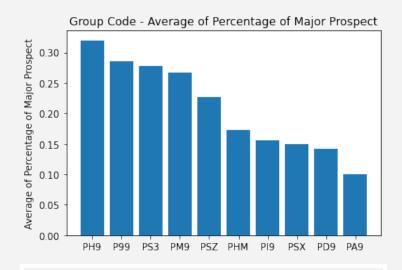
Conclusion:

Regardless the cost of holding an event, holding events for Group PM9 is possible to attract the most number of first time attendees. However, if to consider the cost, holding events for Group P99 might have the highest ROI

Analysis of Group Code on Major Prospects



PH9(CP Stewardship-General) contributes to the most number of the average major prospects.

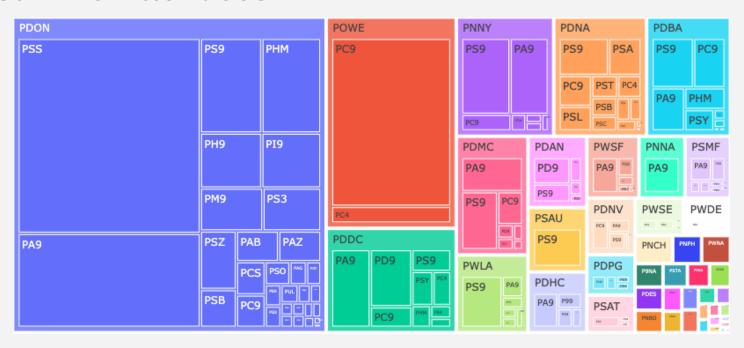


PH9(CP Stewardship-General) has the highest average of percentage of major prospects.

Conclusion:

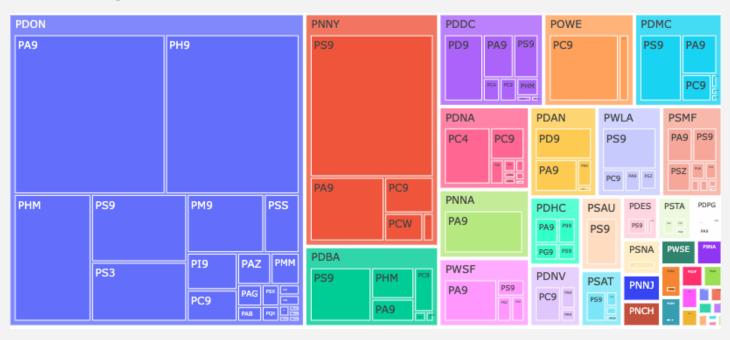
With and without considering the cost of holding an event, holding events for Group PH9 might have the highest ROI and is possibly to attract the most number of major prospects.

Integration of Locations and Groups - First Time Attendees



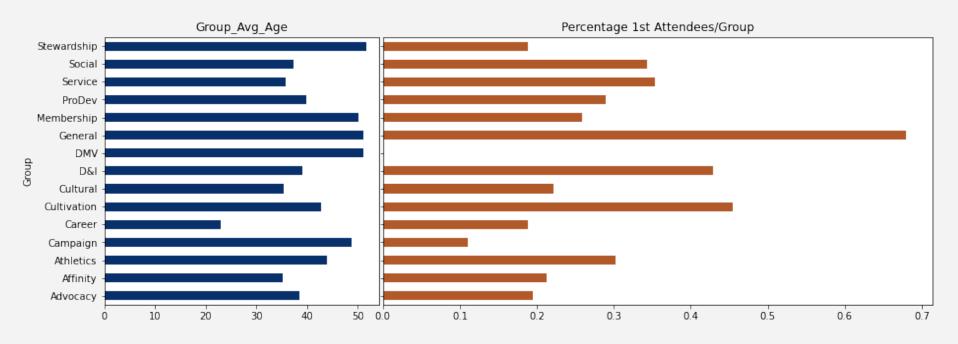
Considering both locations and groups, the events held at Location PDON(DMV-On Campus) for Group PSS(Social-Students) is possible to attract the most number of first time attendees.

Integration of Locations and Groups - Major Prospects



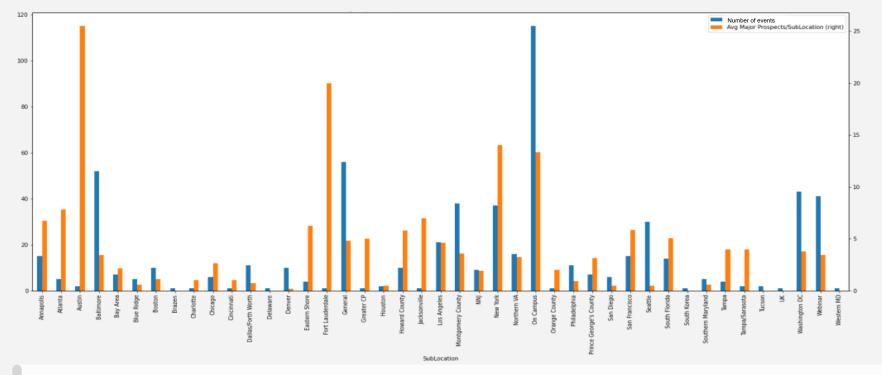
Considering both locations and groups, the events held at Location PDON(DMV-On Campus) for Group PA9 (Athletics-General) and Group PH9 (Stewardship-General) is possible to attract the most number of major prospects.

For different aged group, what kind of events could attract them to attend?



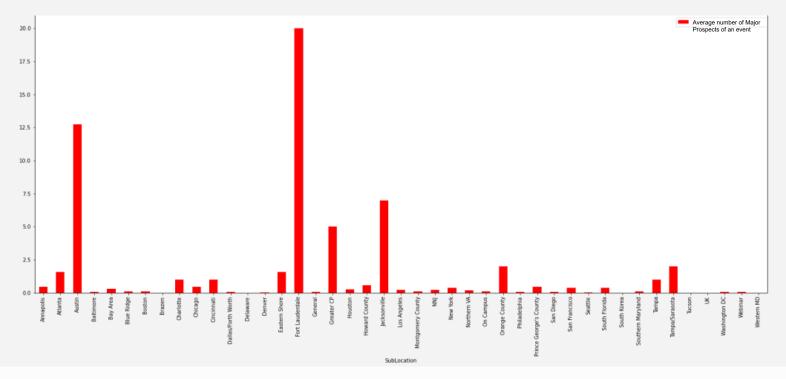
According to this graph, we can send different kind of events invitation to different aged alumni to attract them joining our events and strengthen the connection between university with alumni.

Which specific sublocation could bring the most Avg Major Prospects compared with total the number held event?



The Average Major Prospects of some cities are not positive related to numbers of events they held, like On Campus and Los Angeles.

Which sublocation could bring the most Average Major Prospects compared with total number of events held?



We can more directly see the Return Ability(Avg Major Prospects for each SubLocation for one event) for events in different sublocations is obviously different. We can make a recommendation: In different region, we can hold an event in specific city.

Method

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Recommendations

Recommendations

what type of events attract the objective the most?

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First Time Attendees	Major Prospects
Events that attract Social General Groups	Events that Attract Athletic and Stewardship Events

OFF CAMPILE

OFF CAMPUS				
First Time Attendees	Major Prospects			
Location : SouthEast Jacksonville and Austin Events that attract Cultural General Groups	Location : NorthEast Region and SouthEast Austin Events that attract Stewardship Group			

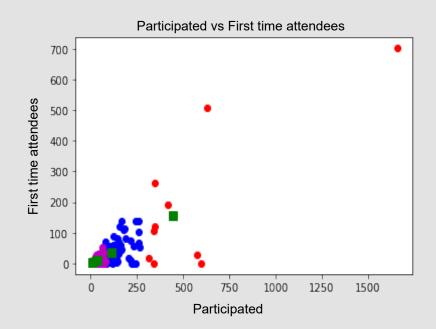
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- Clustering
- Linear Regression

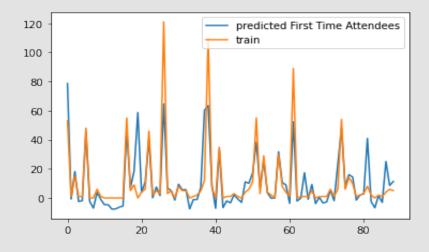
Future Work - Participated vs First Time Attendees



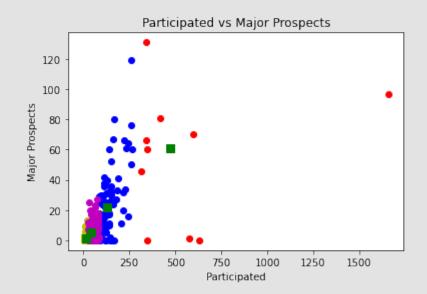
Removing the cluster with the outliers we have considered a sample of 422

Using Regression Analysis to understand the First Time Attendees Based on all numerical variables we get the following results for the prediction Model:

```
r2 score == 0.627
mean_sqrd_error is== 188.331
mean_absolute_error is== 7.176 %
root mean squared error of is== 13.723
```



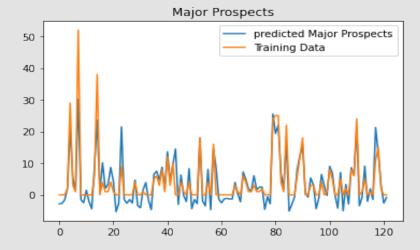
Future Work - Participated vs Major Prospects



Removing the cluster with the outliers we have considered a sample of 608.

Using Regression Analysis to understand the Major Prospects Based on all numerical variables for the selected clusters, we get the following results for the prediction Model:

r2 score is 0.75
mean_sqrd_error is== 16.73
mean_absolute_error is== 2.75 %
root_mean_squared error of is== 4.09



Thank you!