

Alumni Terp Analysis



Meet the Team



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ALUMNI ASSOCIATION



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Overview



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Introduction

Methods

General
description

Findings

Future work

Introduction



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Mission Statement

- Find the correlation using variables that lead to the highest number of first time attendees and major gift prospect attendees
- We use these results to improve the event participation for future events

Introduction



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Objectives

- Our goal is to put on an event that will attract the highest number of first time attendees and major gift prospect attendees.
- Using the dataset given, look at variables to improve the Alumni Association event participation.
- The higher participation can lead to higher donations for the university.

Methods

- Used the categorical codes for activity, location, and group to determine our findings.
- Grouped the location code: DMV, online, North East, West Coast, South East, Other.
- Looked at distribution for the numerical values.
- Created the clusters and cluster centers by using the numerical variables.
- Form correlation matrix and heat map to observe the correlation between different numerical variables.
- Performed the regression analysis to figure out the relationship between each numerical variable.

General description



Correlation Matrix



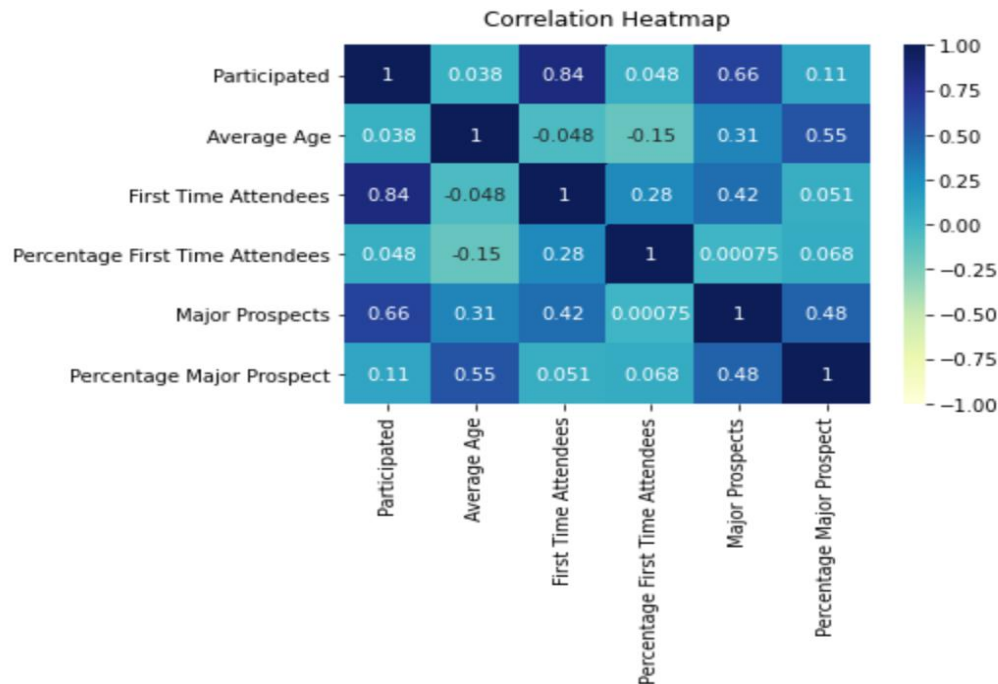
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	Participated	Average Age	First Time Attendees	Percentage First Time Attendees	Major Prospects	Percentage Major Prospect
Participated	1.000000	0.037616	0.835996	0.047840	0.658973	0.113415
Average Age	0.037616	1.000000	-0.048204	-0.152633	0.308342	0.549320
First Time Attendees	0.835996	-0.048204	1.000000	0.281961	0.420884	0.051069
Percentage First Time Attendees	0.047840	-0.152633	0.281961	1.000000	0.000751	0.067701
Major Prospects	0.658973	0.308342	0.420884	0.000751	1.000000	0.481370
Percentage Major Prospect	0.113415	0.549320	0.051069	0.067701	0.481370	1.000000

Correlation Heatmap



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Regular Attendance



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	Event Name	Activity Code	Activity Description	Location Code	Location Description	Group Code	Group Description	Event Date	Participated	Average Age
0	Ocean City Summer Party	PEZOC	CP AAE-Ocean City Summer Party	PDES	CP DMV-Eastern Shore	PS9	CP Social-General	2019-07-06	63	52
1	Neurodiversity on Campus and in the Workplace ...	PEAPC	CP AA-Special Topics Webinar	POWE	CP Online-Webinar	PC9	CP ProDev-General	2019-07-10	7	56
2	Northern NJ Terps TPN	PEANJ	CP AA-Northern NJ Terps TPN	PNNJ	CP Northeast-NNJ	PC9	CP ProDev-General	2019-07-11	28	45
3	Philly Terps: Young Alumni Happy Hour Summer S...	PEAP1	CP AA-Philly Young Alum HH Summer Series	PNPH	CP Northeast-Philadelphia	PS9	CP Social-General	2019-07-11	3	34
4	Philly Terps Suite Night at the Ballpark	PEAP4	CP AA-Philly Terps Ste Night at Ballpark	PNPH	CP Northeast-Philadelphia	PS9	CP Social-General	2019-07-14	22	38

Location



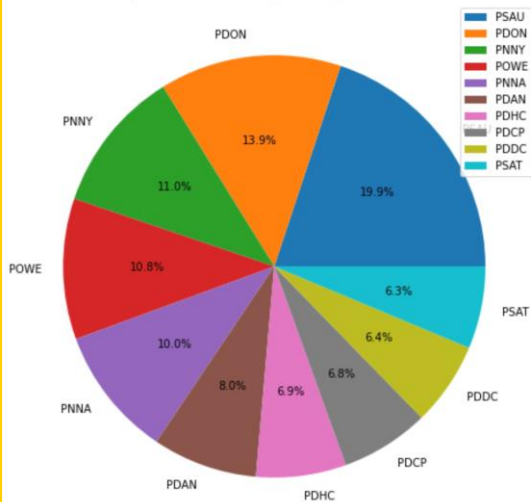
Location



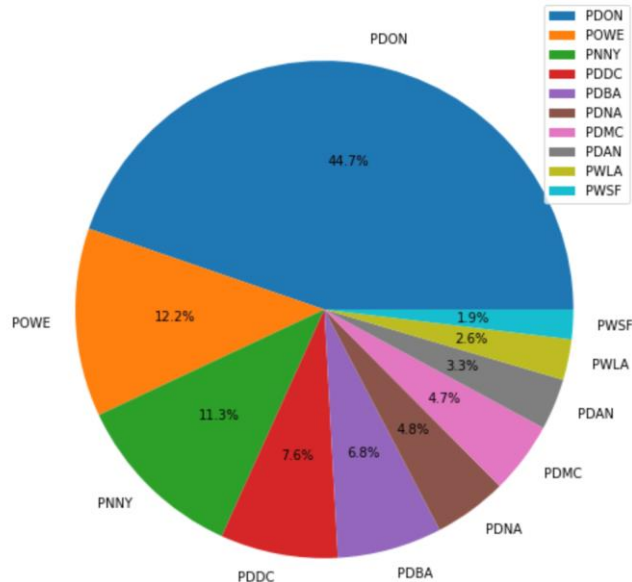
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Top 10 Locations For High Participation (mean)



Top 10 Locations For High Participation



CP DMV- On Campus
(PDON) ~ 44.7%
[Event in this location every year]

CP Online- Webinar
(POWE) ~ 12.2%

CP Northeast- New York
(PNNY) ~ 11.3%

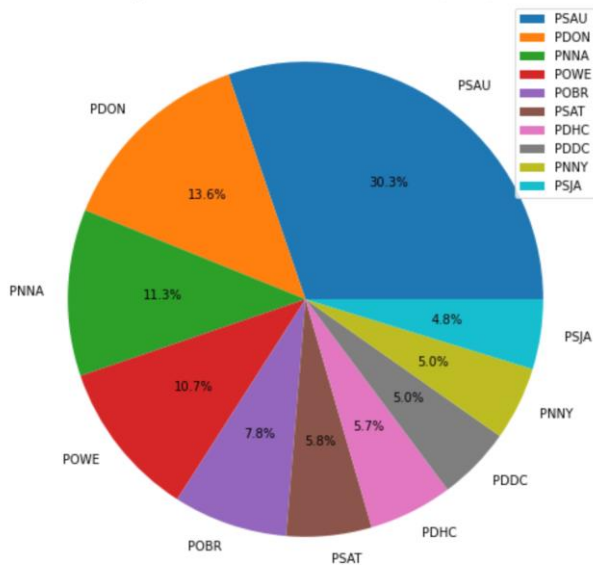
Location



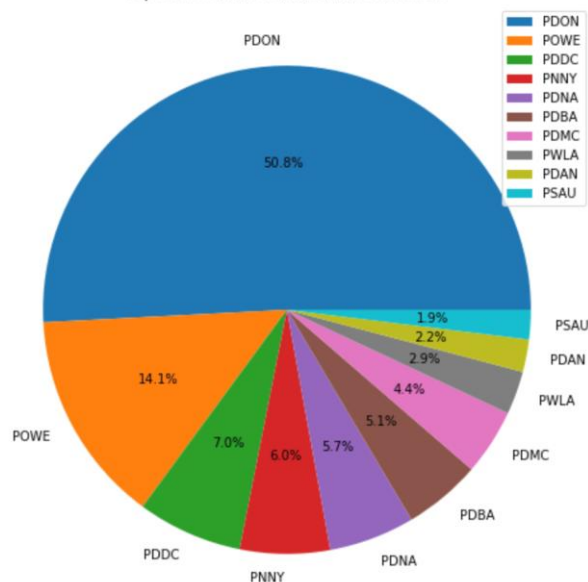
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Top 10 Locations For First Time Attendees (mean)



Top 10 Locations For First Time Attendees



CP DMV- On Campus

(PDON) ~ 50.8%

CP Southeast- Austin

(PSAU) ~ 6.0%

CP Online- Webinar

(POWE) ~ 14.1%

**The last event in
Southeast - Austin
(PSAU) was in 2017-2018**

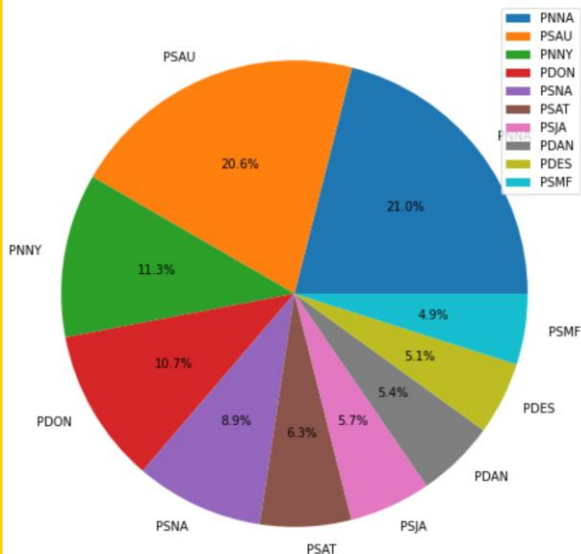
- **Total participants:**
260
- **First time attendees:**
139
- **Major prospects:** 50

Location

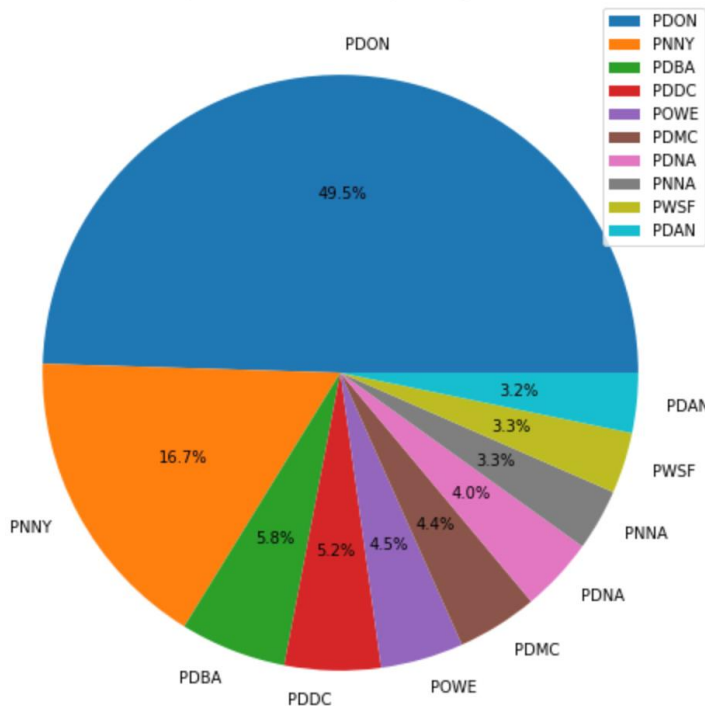


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Top 10 Locations For Major Prospects (mean)



Top 10 Locations For Major Prospects



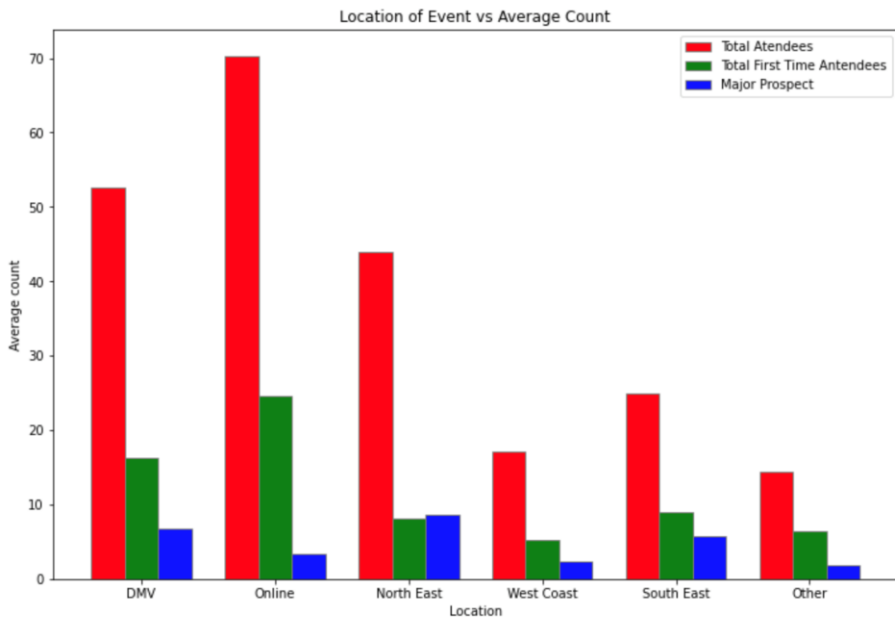
- **CP DMV- On Campus (PDON) ~ 49.5%**
- **CP Northeast- New York (PNNY) ~ 16.7%**
- **CP DMV - Baltimore (PDBA) ~ 5.8%**

Location



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- Location of events should be focused on online or DMV locations
 - Virtual Mode has the advantage of people being able to join in any location, all over the world.
 - Huge part of location is convenience
 - Most people who come to University of Maryland are in state or close to the DMV area



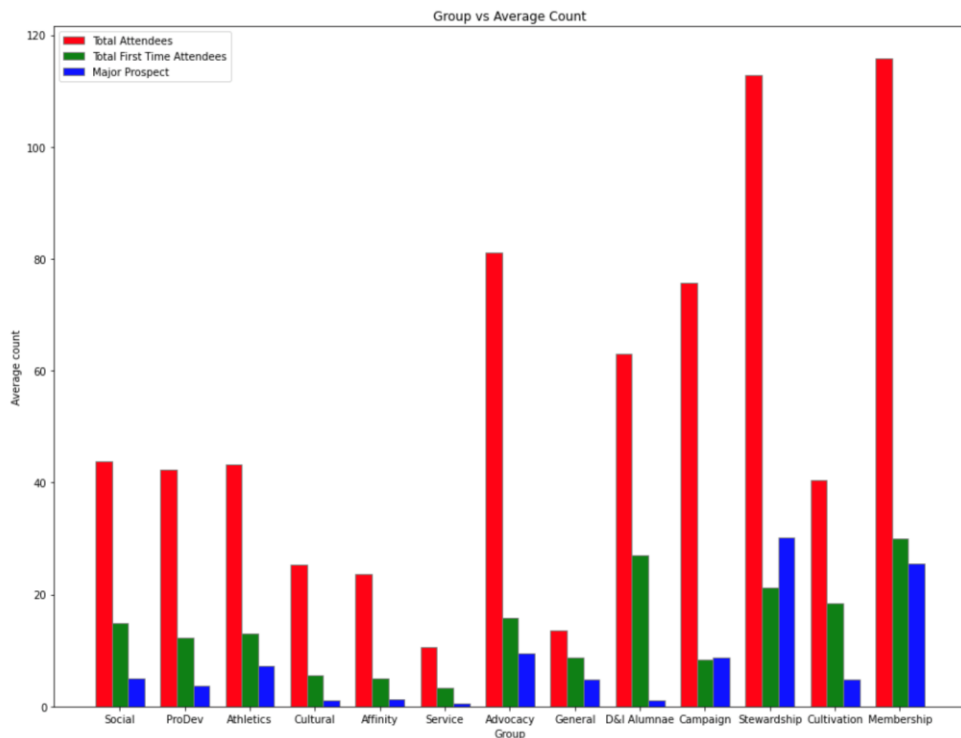
Group



Group



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Total Attendees: Membership, Stewardship, and Advocacy Group

First Time Attendees: Membership, Stewardship, Advocacy Group

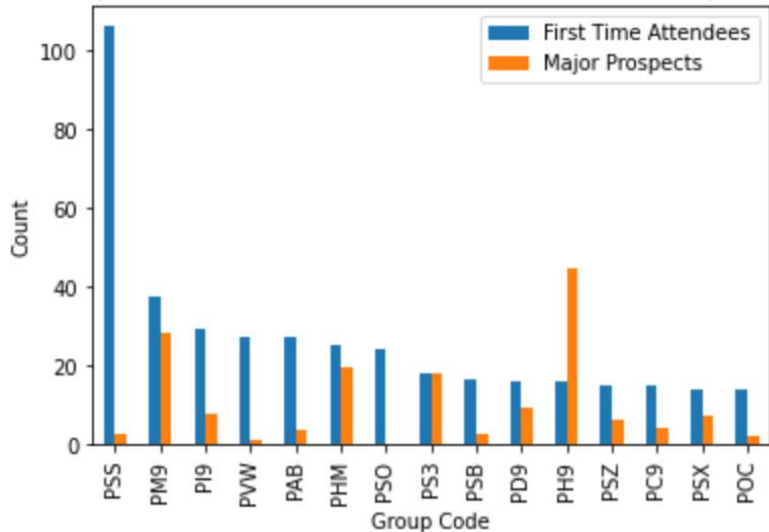
Major Prospects: Stewardship, Membership, Advocacy Group

Group



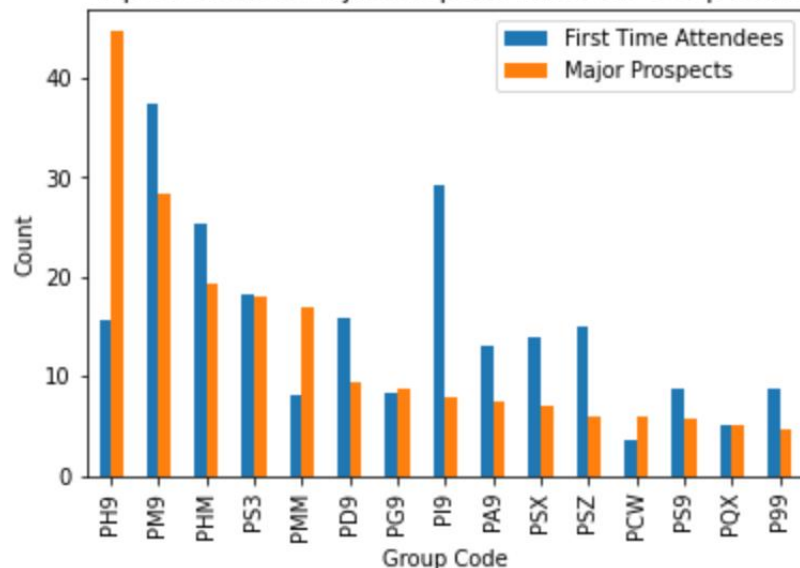
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Top 15 Count of First Time Attendees based on Group Code



CP Social-Students, CP Membership, CP Cultivation

Top 15 Count of Major Prospects based on Group Code



CP Stewardship, CP Membership- General, Stewardship

Activity

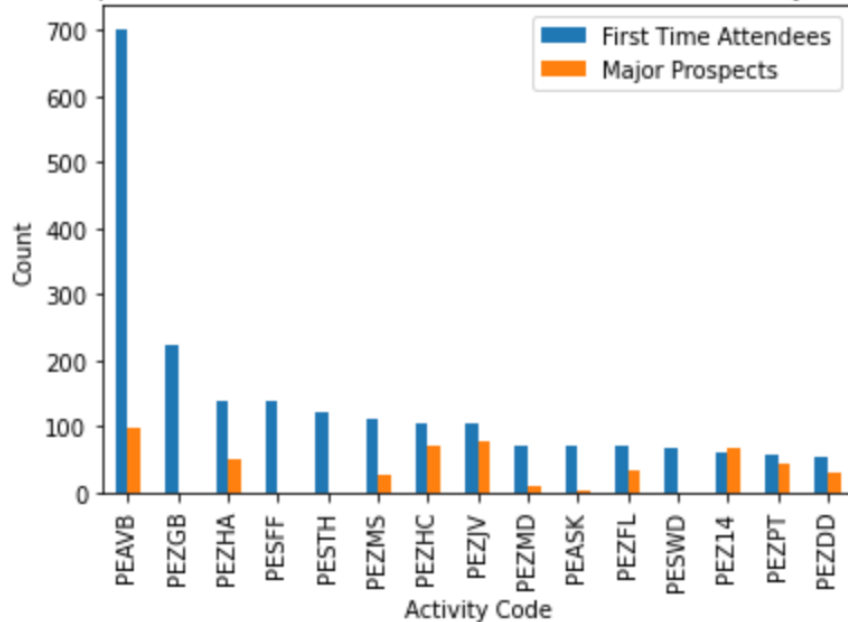


Activity



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Top 15 Count of First Time Attendees based on Activity Code



Virtual Book Club (PEAVB)

GradBash (PEZGB)

Happy Hour (PEZHA)

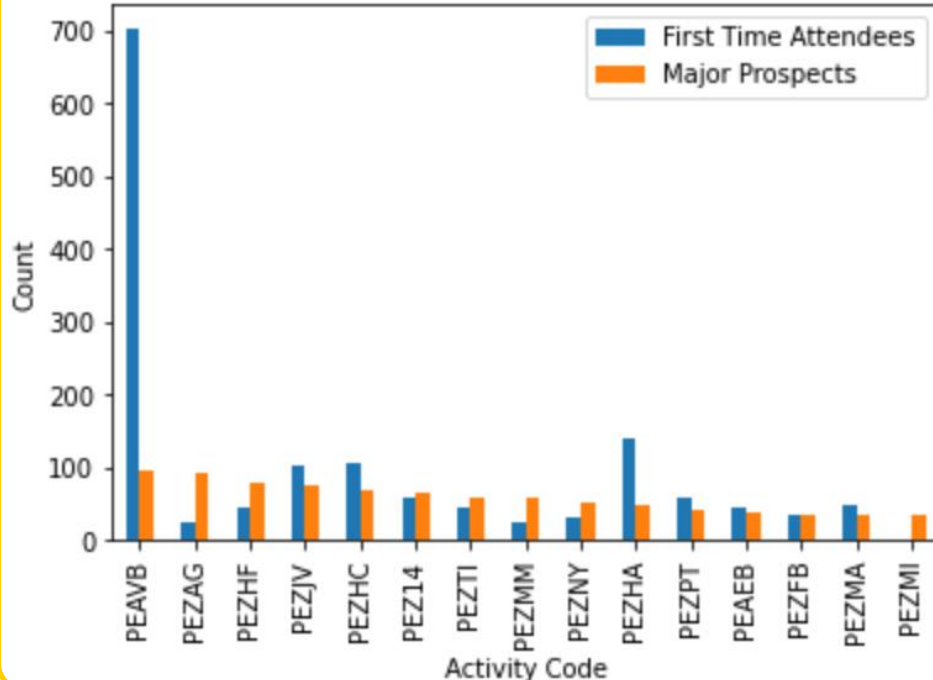
- The last Happy Hour event was hosted in 2017-2018

Activity



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Top 15 Count of Major Prospects based on Activity Code



Virtual Book Club (PEAVB)

Awards Gala(PEZAG)

**Hall of Fame
Ceremony(PEZHF)**

Age

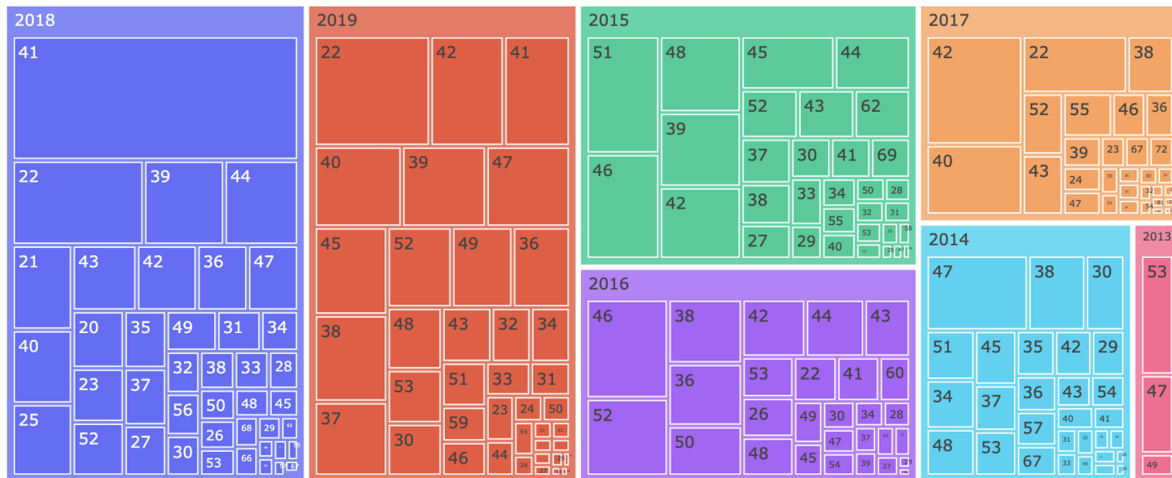
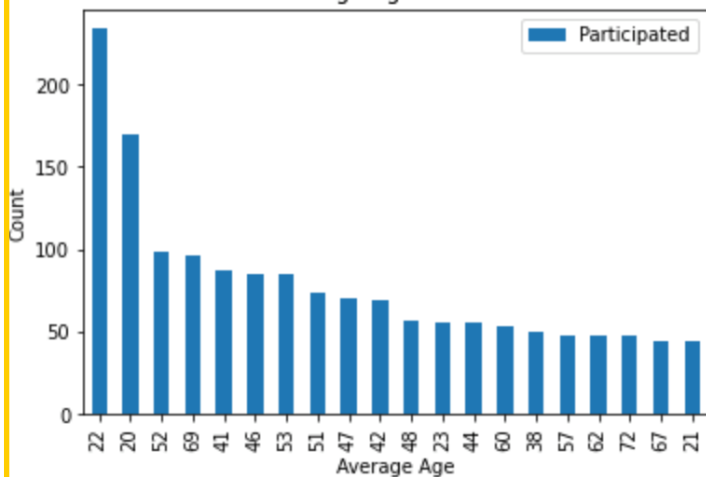


Age



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Average Age vs Count

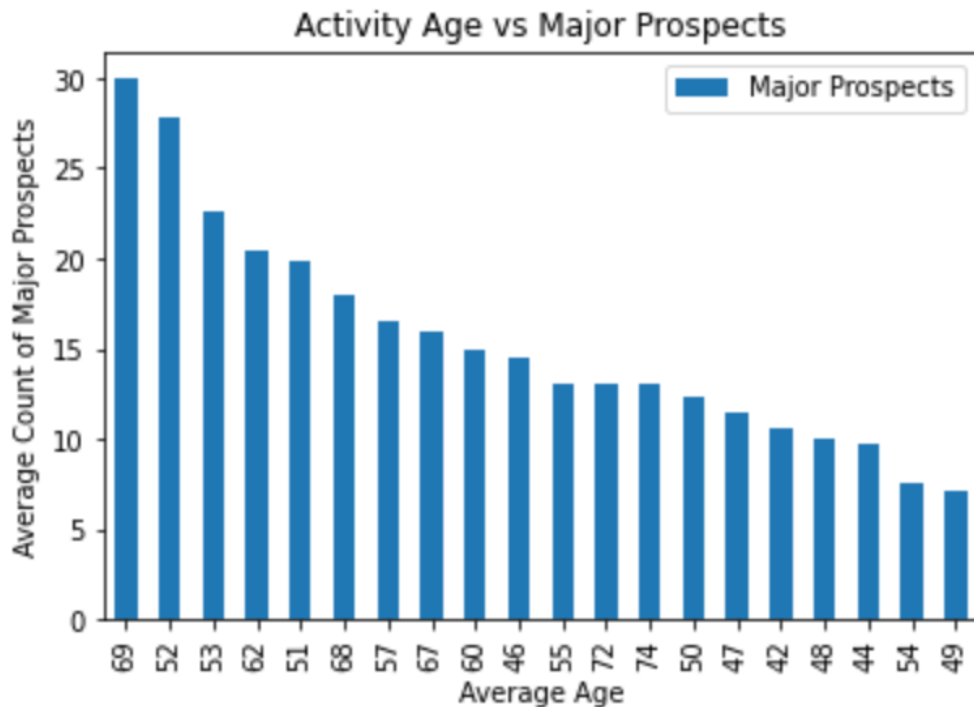


Age



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Time of Attendance
(year /month)

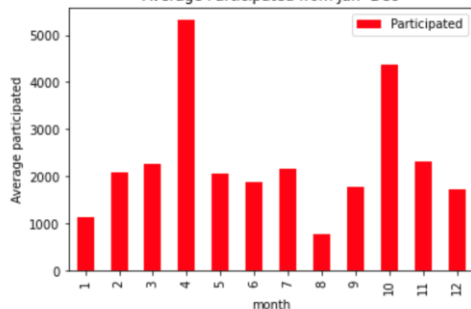


Time(Year/Month)

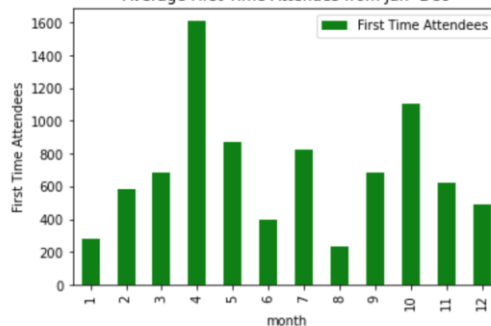


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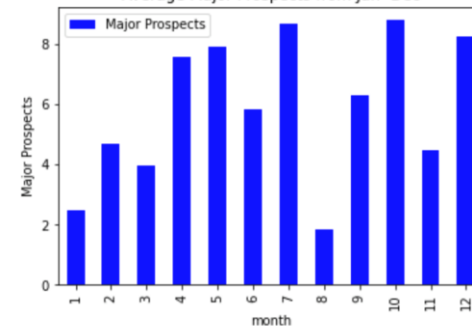
Average Participated from Jan- Dec



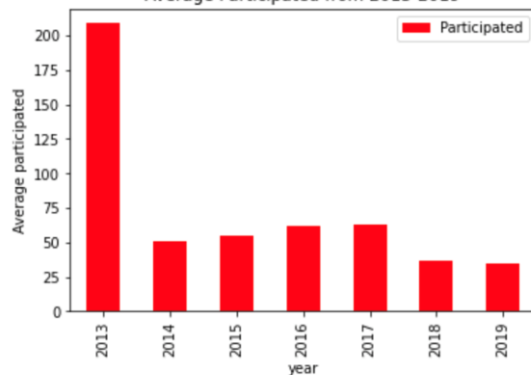
Average First Time Attendees from Jan- Dec



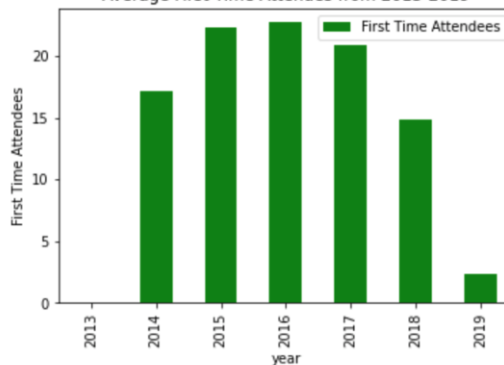
Average Major Prospects from Jan- Dec



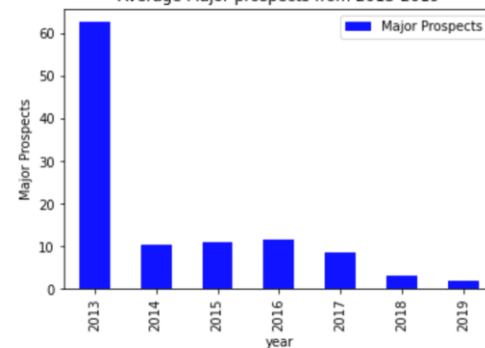
Average Participated from 2013-2019



Average First Time Attendees from 2013-2019



Average Major prospects from 2013-2019



Regression



Regression Analysis

Model-1 (Major Prospects)



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OLS Regression Results

Dep. Variable:	Major Prospects	R-squared:	0.611
Model:	OLS	Adj. R-squared:	0.609
Method:	Least Squares	F-statistic:	242.6
Date:	Wed, 08 Dec 2021	Prob (F-statistic):	4.58e-125
Time:	10:14:49	Log-Likelihood:	-2235.1
No. Observations:	622	AIC:	4480.
Df Residuals:	617	BIC:	4502.
Df Model:	4		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
const	4046.7652	425.193	9.517	0.000	3211.764	4881.767
Average Age	0.3455	0.037	9.365	0.000	0.273	0.418
Participated	0.1465	0.007	20.905	0.000	0.133	0.160
year	-2.0123	0.211	-9.550	0.000	-2.426	-1.598
First Time Attendees	-0.1410	0.016	-8.826	0.000	-0.172	-0.110

Omnibus:	405.791	Durbin-Watson:	1.950
Prob(Omnibus):	0.000	Jarque-Bera (JB):	22273.493
Skew:	2.191	Prob(JB):	0.00
Kurtosis:	31.987	Cond. No.	2.42e+06

- Performed Regression Analysis on Major Prospects (dependent Variable) W.r.t Participated , Avg age, Year , First Time attendees .
- Created a Dummy Variable for Year.
- Evaluated the whole data using Train(80%) data and Test data(20%) for prediction.
- Decision tree is performed and accuracy obtained is 0.3903.

Regression Analysis Model-2 (First Time Attendees)



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OLS Regression Results

Dep. Variable:	First Time Attendees	R-squared:	0.705
Model:	OLS	Adj. R-squared:	0.704
Method:	Least Squares	F-statistic:	740.5
Date:	Wed, 08 Dec 2021	Prob (F-statistic):	6.29e-165
Time:	10:15:10	Log-Likelihood:	-2813.6
No. Observations:	622	AIC:	5633.
Df Residuals:	619	BIC:	5646.
Df Model:	2		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
const	10.3740	3.812	2.721	0.007	2.887	17.861
Average Age	-0.3366	0.092	-3.653	0.000	-0.518	-0.156
Participated	0.3702	0.010	38.421	0.000	0.351	0.389

Omnibus:	252.686	Durbin-Watson:	1.661
Prob(Omnibus):	0.000	Jarque-Bera (JB):	95641.173
Skew:	0.309	Prob(JB):	0.00
Kurtosis:	63.745	Cond. No.	447.

- Performed Regression Analysis on First Time Attendees (Dependent variables) W.r.t Participated , Avg age .
- Evaluated the whole data using Train(80%) data and Test data(20%) for prediction.
- Decision tree Method is performed and accuracy obtained is 0.149.

Future work

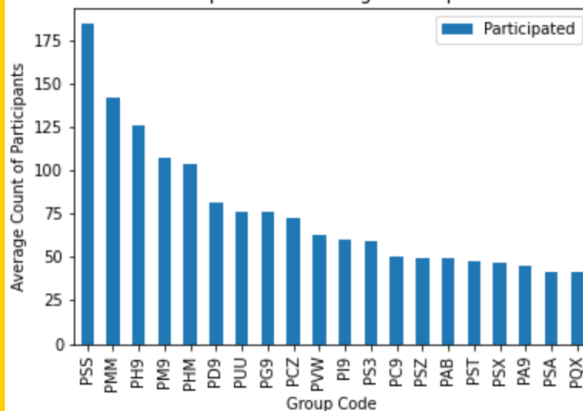


General Participated Distribution for Group, Location and, Activity

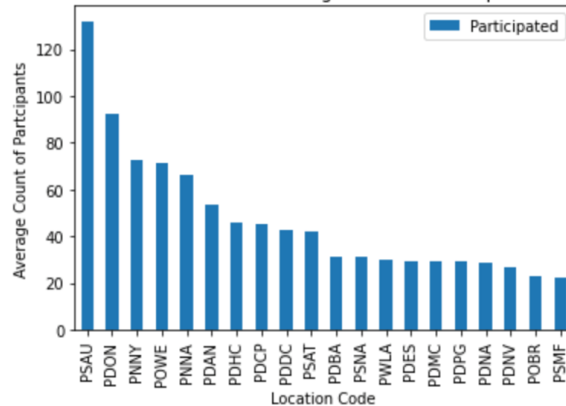


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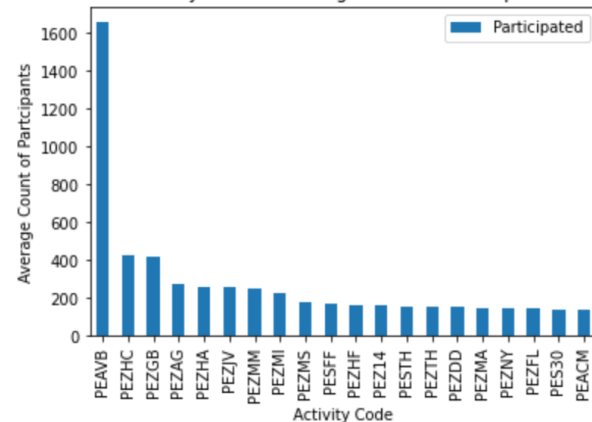
Group Code vs Average Participants



Location Code vs Average Count of Participants



Activity Code vs Average Count of Participants



Future work (recommendation)



To increase the total attendance and first-time attendance:

- About location: Focus on having more events in the DMV area and online, however, have at least one event in CP Southeast- Austin per year
- About group : We can have more events about CP Social-Students
- About activity : We can have more events about CP Happy Hour (online?)
- About time : We can have more events in April and October

To increase the major prospect:

- About location: We can have more events on CP DMV- On Campus
- About activity : We can have more events about CP AA-Virtual Book Club
- About group : We can have more events about CP Stewardship-General

Thank you

