

Appendix

Exhibit 1: Gender Pie Chart

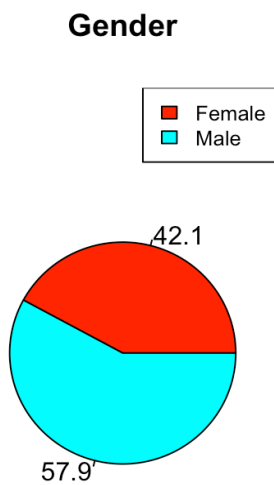


Exhibit 2: Age Distribution

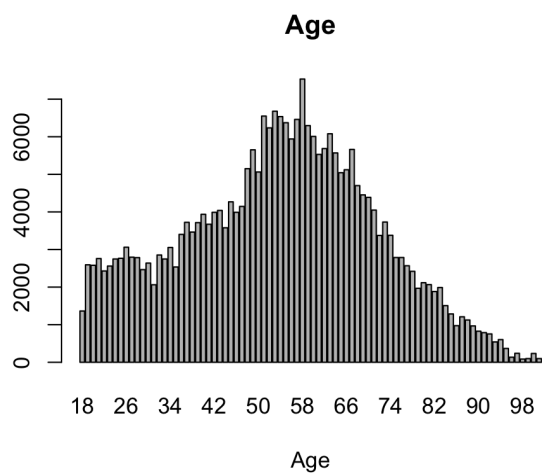


Exhibit 3: Age Boxplot

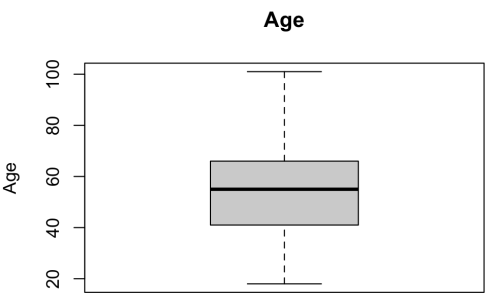


Exhibit 4: Income Distribution

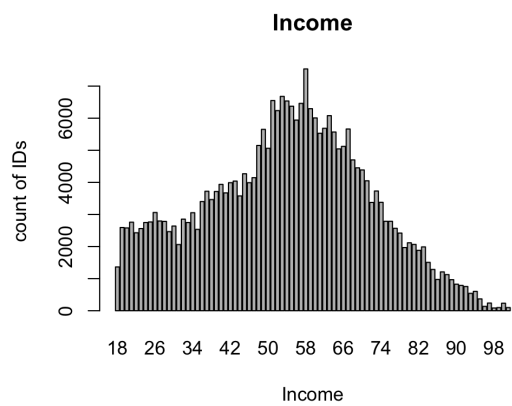


Exhibit 5: Income Box plot

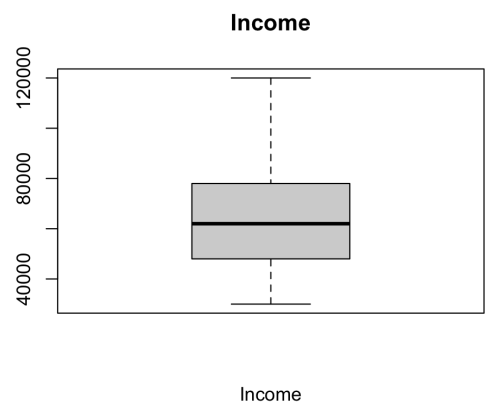


Exhibit 6: Number of new members by year

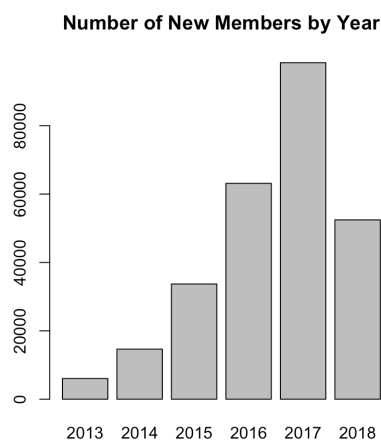


Exhibit 7: Correlation plot of Offer type vs duration, reward, and difficulty

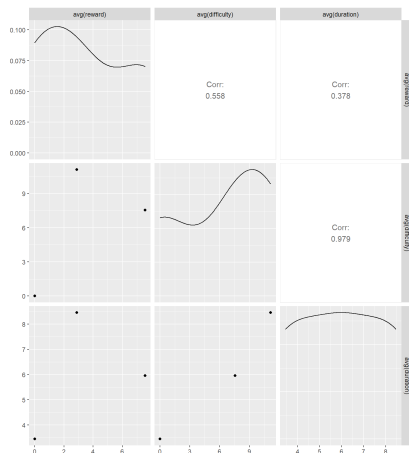


Exhibit 8: Number count for each activities Membership

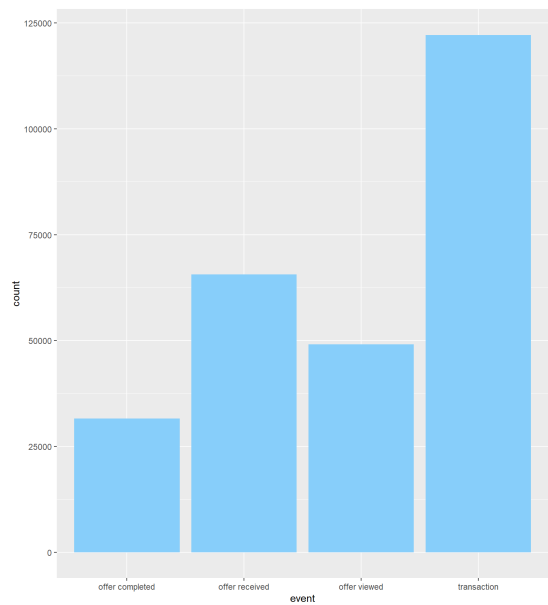


Exhibit 9: Completion Rate vs Active

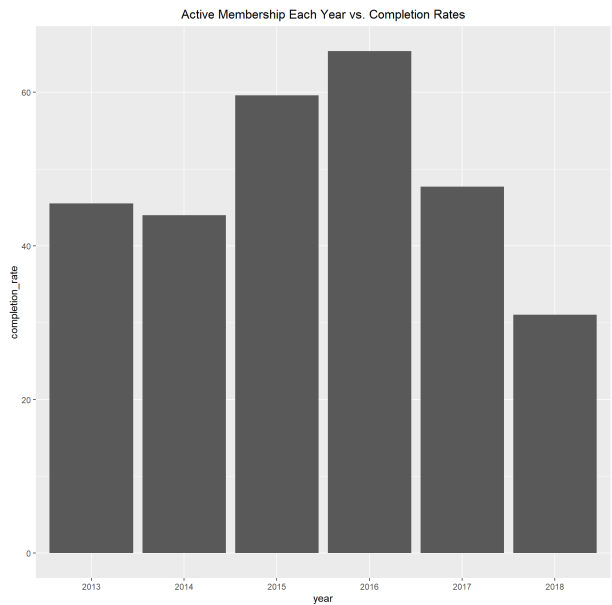


Exhibit 10: #completion rates vs offer type

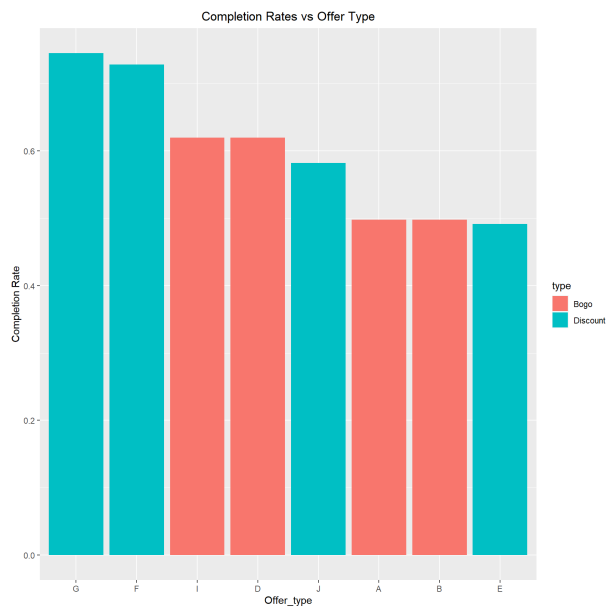


Exhibit 11: #completion rates vs channel

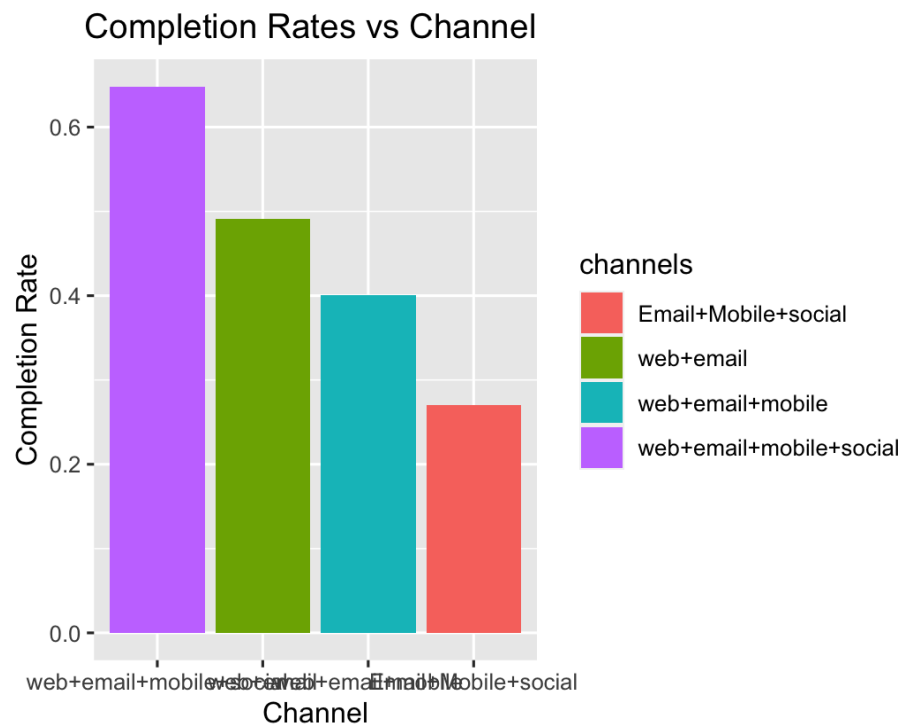


Exhibit 12: Completion Rate vs Income Group

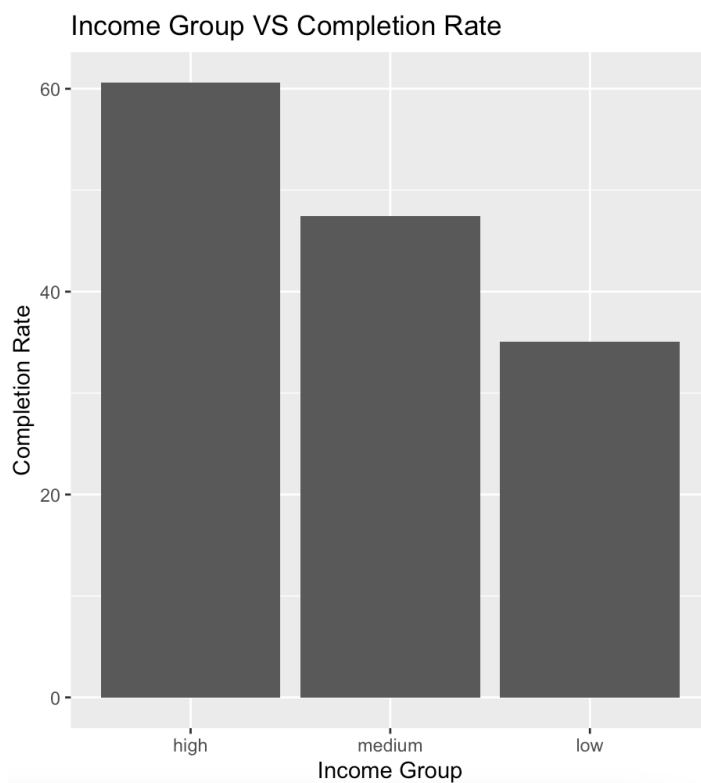


Exhibit 13: Activities count vs days

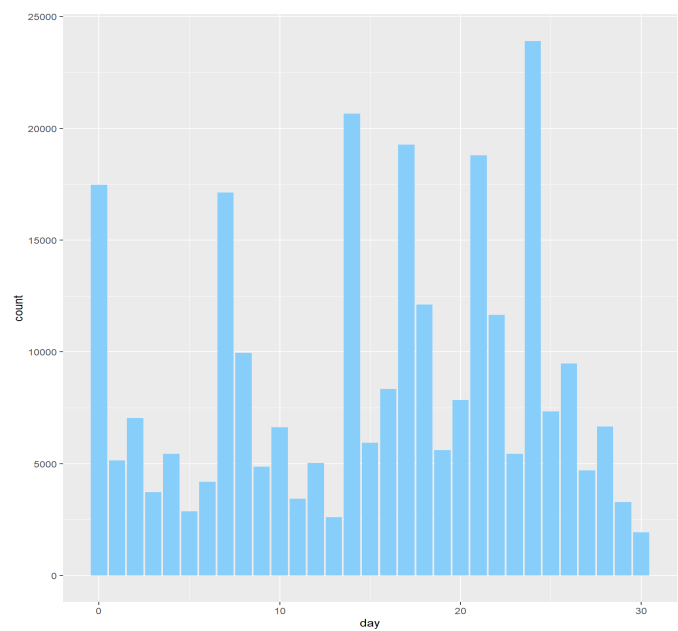


Exhibit 14: Correlation Matrix

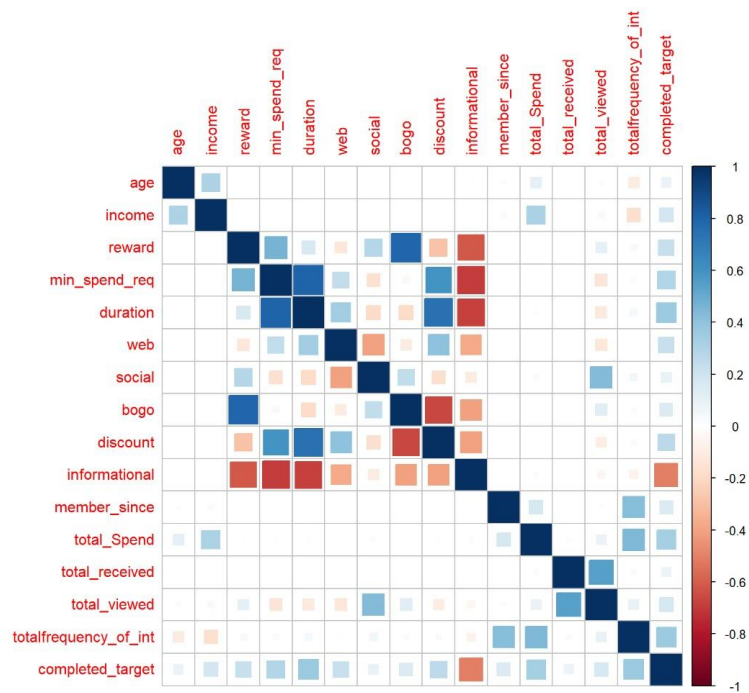


Exhibit 15-1: k means clustering

cluster	viewed	Completed	Transactions	Amount	Total
1	0.93284055	1.26316228	0.620452	0.7111982	3377
2	-0.96987096	-0.99372282	-0.6491966	-0.6186437	1741
3	0.32460616	0.80768206	0.4307912	5.2098629	2523
4	0.88425349	-0.55354747	-0.7504981	-0.521247	3928
5	0.08486826	-0.05202636	1.7014621	-0.1910783	271
6	-0.42660306	0.41526898	-0.1441717	0.1610061	2984

Exhibit 15 (a)

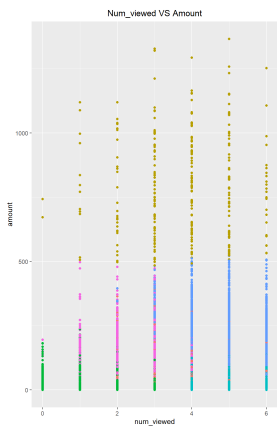


Exhibit 15 (b)

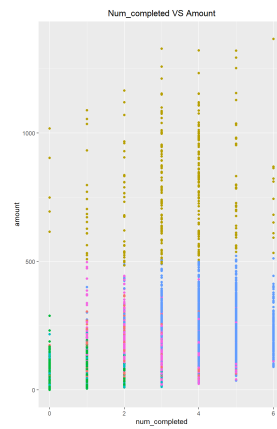


Exhibit 15 (c)

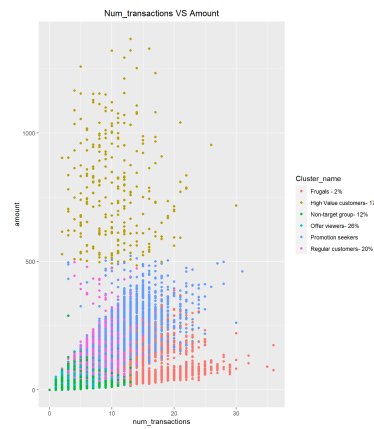


Exhibit 16: customer distribution

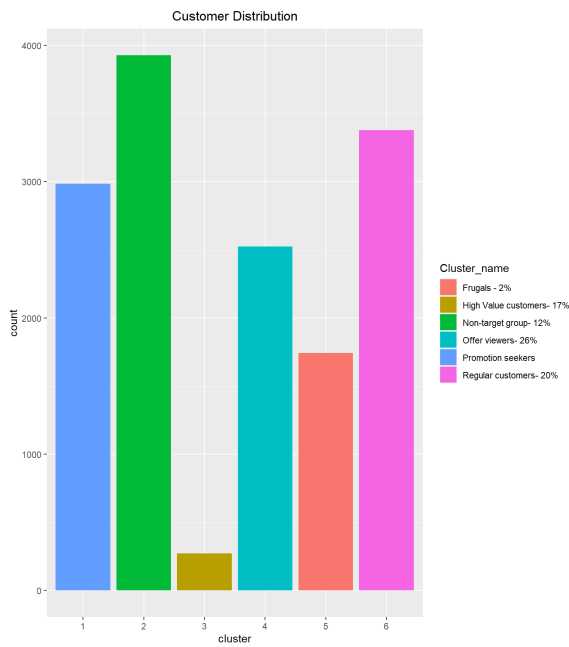


Exhibit 17: gender distribution

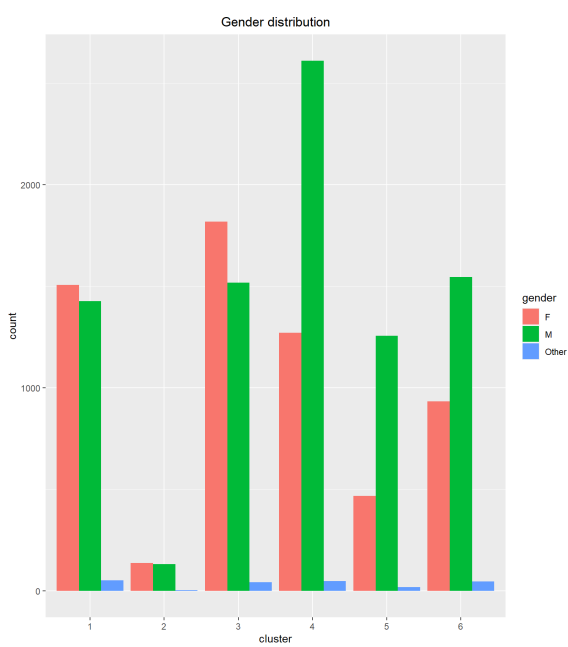


Exhibit 18: Age distribution

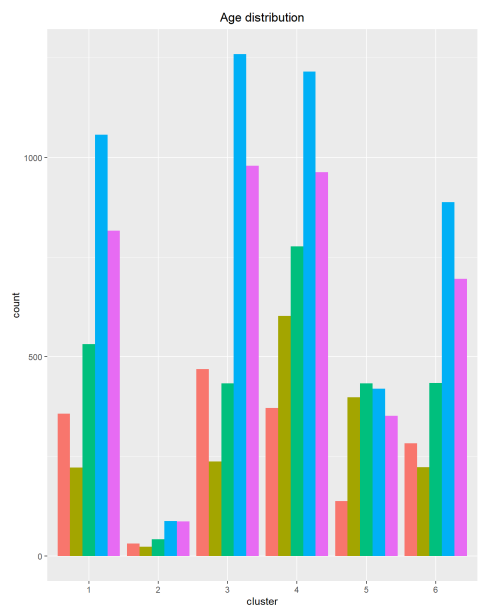


Exhibit 19: Income distribution

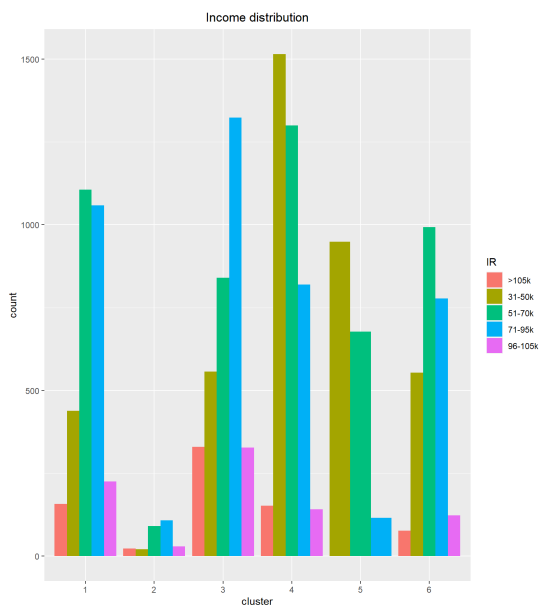
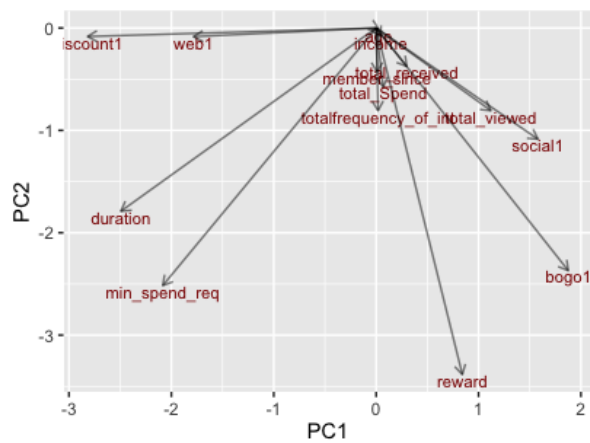
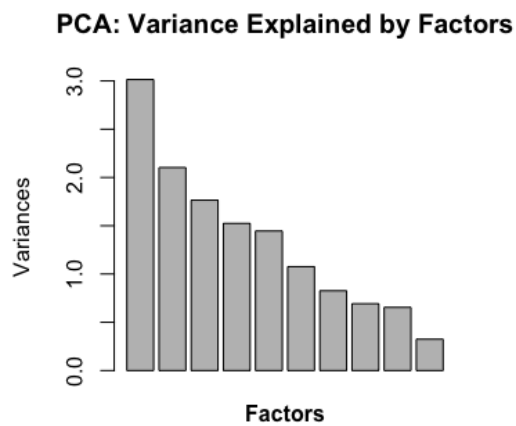


Exhibit 21



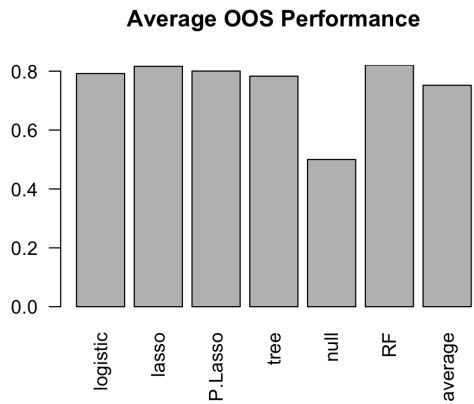
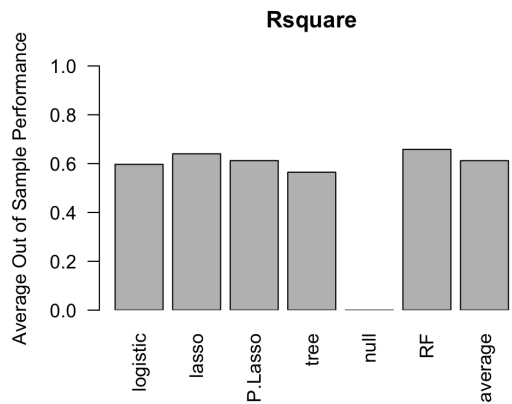
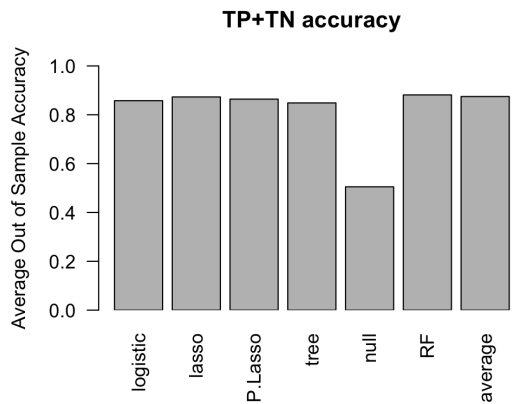
PCA loadings:

Factor 1	
discount1	-0.5165947
duration	-0.4570501
min_spend_req	-0.3819493
bogo1	0.3439733

Factor 2	
reward	-0.6203656
min_spend_req	-0.4610577
bogo1	-0.4344041

Factor 3	
totalfrequency_o f_int	-0.513308
total_Spend	-0.5027771
member_since	-0.4112755
total_viewed	-0.3252368

Exhibit 22



Citations

- Abaluck, J., & Adams-Prassl, A. (2021). What do Consumers Consider Before They Choose? Identification from Asymmetric Demand Responses. *The Quarterly Journal Of Economics*, 136(3), 1611-1663. <https://doi.org/10.1093/qje/qjab008>
- About Us: Starbucks Coffee Company*. Starbucks.com. (2022). Retrieved 17 October 2022, from <https://www.starbucks.com/about-us/>.
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- Zhao, C. (2022, July 4). *Starbucks Data Analysis & Customer Segmentation*. Kaggle. Retrieved October 16, 2022, from <https://www.kaggle.com/code/candicezhao28/starbucks-data-analysis-customer-segmentation#4.-Customer-Segmentation>