1. Database

member_number	membership_type	family_name	year_joined	total_members	total_spending	total_visits	promo1	promo2	dining_total_spendi...	dining_total_visi...	golf_total_spendi...	golf_total_visits
102365	Family	Hancock	2006	3	8735.51	53	0	1	3312.05	23	NULL	NULL
105078	Family	Spears	2002	2	8071.73	43	1	0	4728.73	32	NULL	NULL
106225	Family	Foster	1995	6	1239.06	8	0	0	1239.06	8	NULL	NULL
109320	Individual	Williamson	1992	1	5424.58	32	1	0	5424.58	32	NULL	NULL
112823	Family	Deleon	2010	4	12171.35	31	0	1	1421.67	10	NULL	NULL
116919	Individual	Wiggins	2001	1	10057.66	64	0	0	2111.90	17	5335.76	20
120189	Family	Anderson	1988	2	1866.45	24	0	0	281.45	3	NULL	NULL
121621	Couple	Spears	2008	2	15939.50	95	1	0	6266.41	43	6013.09	17
124368	Individual	Golden	1996	1	8283.54	57	1	0	5550.13	37	2145.71	18
126871	Individual	Melton	1991	1	11096.54	67	1	0	6076.54	43	5020.00	24
129169	Couple	Carroll	2016	2	7322.16	52	0	0	4285.46	30	1978.70	17
131644	Family	Sims	2008	2	13585.50	78	0	0	4290.76	28	2244.74	19
133532	Family	Lawson	2002	4	10437.30	60	0	1	2622.69	19	NULL	NULL
134985	Family	Mills	1988	4	9563.78	59	1	1	3927.30	25	NULL	NULL
138347	Family	Sutton	1992	4	1696.05	11	0	0	577.26	5	NULL	NULL
142270	Family	Atkinson	1996	3	500.00	2	0	0	NULL	NULL	NULL	NULL
146287	Family	Sullivan	1989	5	3294.60	19	0	0	2461.60	16	NULL	NULL
148621	Family	Mclaughlin	1988	4	5841.85	36	1	0	5841.85	36	NULL	NULL
152014	Family	Burns	1996	5	9094.12	18	0	1	1909.71	13	NULL	NULL
155249	Individual	Arnold	1995	1	7168.16	41	0	0	1665.66	14	4965.75	22
159968	Retiree	Serrano	1990	2	9439.81	61	1	0	3370.48	24	3951.11	34
161738	Couple	Dickson	2011	2	6313.49	40	0	0	2761.49	19	NULL	NULL
162946	Retiree	Mercado	1998	1	9544.48	73	1	0	3014.57	20	2793.14	24
165724	Family	Robbins	1996	3	4386.44	29	1	0	4386.44	29	NULL	NULL
167379	Family	Summers	2016	5	11348.95	42	0	1	2968.84	20	NULL	NULL

... golf_total_spendi...	golf_total_visits	other_total_spendi...	other_total_visits	pool_total_spendi...	pool_total_visits	total_sepcial_attend...	tennis_total_spendi...	tennis_total_visits
NULL	NULL	2152.46	12	3271	18	2	NULL	NULL
NULL	NULL	NULL	NULL	3343	11	1	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	2	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	1	NULL	NULL
NULL	NULL	4661.68	7	6088	14	1	NULL	NULL
5335.76	20	NULL	NULL	1100	8	NULL	1510	19
NULL	NULL	NULL	NULL	NULL	NULL	1	1585	21
6013.09	17	NULL	NULL	1780	12	2	1880	23
2145.71	18	587.70	2	NULL	NULL	3	NULL	NULL
5020.00	24	NULL	NULL	NULL	NULL	3	NULL	NULL
1978.70	17	NULL	NULL	1058	5	NULL	NULL	NULL
2244.74	19	NULL	NULL	5280	8	4	1770	23
NULL	NULL	4057.61	7	1992	12	3	1765	22
NULL	NULL	3866.48	10	NULL	NULL	2	1770	24
NULL	NULL	1118.79	6	NULL	NULL	2	NULL	NULL
NULL	NULL	NULL	NULL	500	2	4	NULL	NULL
NULL	NULL	NULL	NULL	833	3	4	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL
NULL	NULL	3084.41	3	4100	2	1	NULL	NULL
4965.75	22	536.75	5	NULL	NULL	1	NULL	NULL
3951.11	34	2118.22	3	NULL	NULL	1	NULL	NULL
NULL	NULL	NULL	NULL	3552	21	3	NULL	NULL
2793.14	24	2126.77	11	NULL	NULL	1	1610	18
NULL	NULL	NULL	NULL	NULL	NULL	3	NULL	NULL
NULL	NULL	1872.11	10	6508	12	3	NULL	NULL

2.Two SQL analytic queries on data warehouse

#potential promotion design
select membership_type, dining_total_spending/dining_total_visits as dining_SpendPerVisit,
golf_total_spending/golf_total_visits as golf_SpendPerVisit,
other_total_spending/other_total_visits as other_SpendPerVisit,
pool_total_spending/pool_total_visits as pool_SpendPerVisit,
tennis_total_spending/tennis_total_visits as tennis_SpendPerVisit
from club_membership_summary
where promo1 = 0 and promo2 = 0 #customers who did not sign up for promo1 or promo2
group by membership_type;

#assume that promo2 is targeting miscellaneous activities

membership_type	dining_SpendPerVisit	golf_SpendPerVisit	other_SpendPerVisit	pool_SpendPerVisit	tennis_SpendPerVi..
Family	154.882500	NULL	NULL	NULL	NULL
Individual	124.229412	266.788000	NULL	137.5000	79.4737
Couple	142.848667	116.394118	NULL	211.6000	NULL
Retiree	157.561250	244.029677	NULL	NULL	76.0000

Finding:
 # design a promotion to target the tennis customer since it has the lowest spend per visit
 # design a promotion to attract family-type member to visit golf course

Summarize the characteristic of each membership type
SELECT membership_type, COUNT(*) AS number_in_each_type, AVG(total_spending) AS average_purchasing_power, SUM(total_spending) AS total_purchasing_power,
AVG(total_visits) AS average_visit, SUM(total_visits) AS total_visit
FROM club_membership_summary
GROUP BY membership_type;

| membership_type	number_in_each_type	average_purchasing_power	total_purchasing_power	average_visit	total_visit
▶ Family	600	6968.206267	4180923.76	38.1133	22868
Individual	298	7704.574732	2295963.27	54.3255	16189
Couple	221	10376.879819	2293290.44	71.5747	15818
Retiree	90	8006.539111	720588.52	54.6111	4915

Finding:
 # Family is the largest group, but couples are the group which has the largest purchasing power.
 # For existing customers, we could try to do some activity to motivate and increase family's spending. For potential customers, we would try to attract more couples.

3.Create three visualizations in Tableau using data warehouse.

Customer Relationship Groups (True Friends, Butterflies, Barnacles, Strangers)
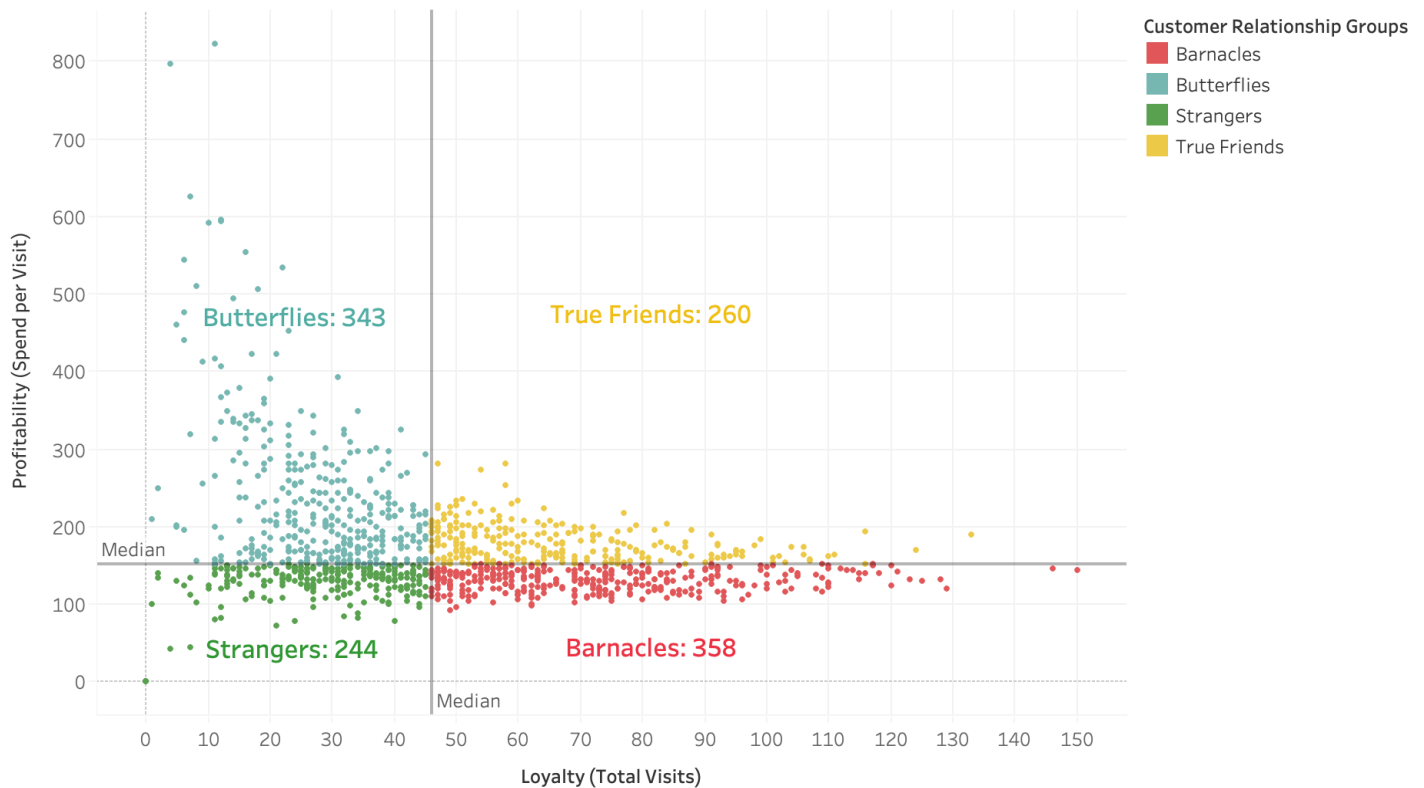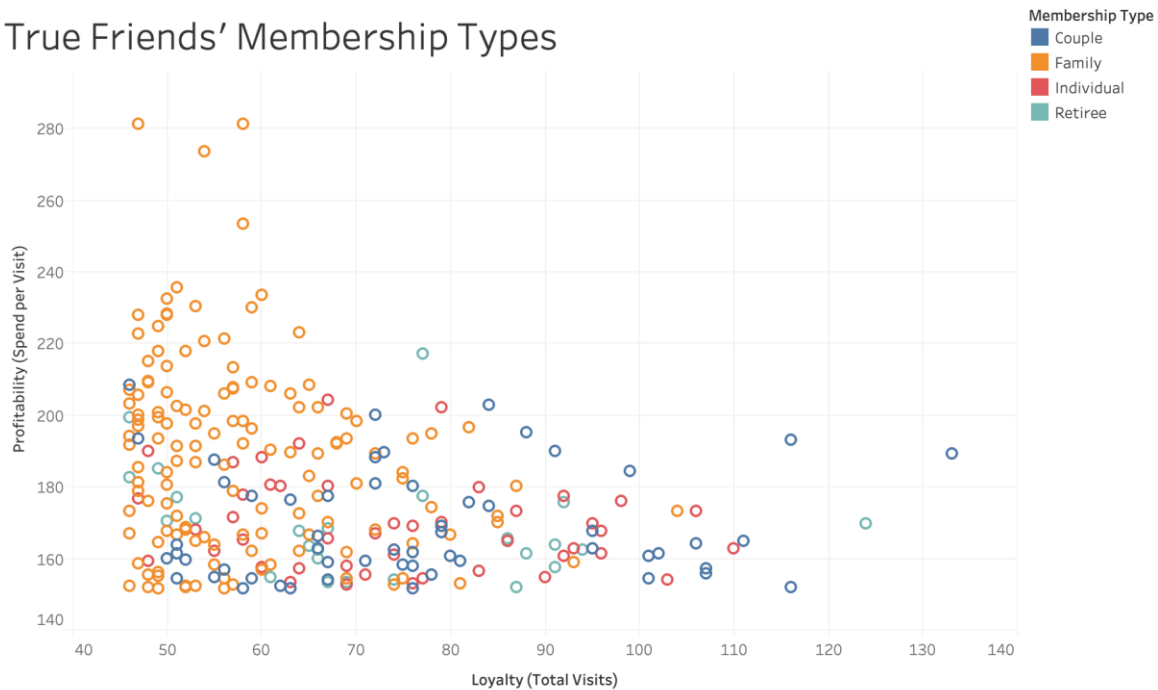

The club manager can classify customers into 4 groups based on their potential profitability (In this database, we only have revenue but no cost so it is difficult for us to know the profit, but we still can use the revenue to somehow predict it) and manage their relationships accordingly.
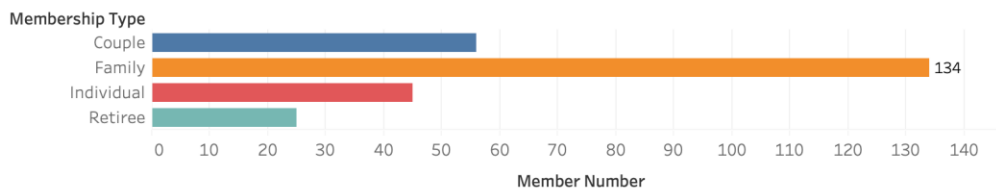
For example, true friends are customers who are highly profitable (spend per visit >= 151.5) and also very loyal (total visit >= 46). The club should treat them well and retain the relationship with them.

There are also butterflies, which are highly profitable but relatively low loyal; Barnacles stands for lower profitable but loyal customers; At last, strangers are those lower profitable and low loyal customers.

True Friends' Membership Types

Profitability (Spend per Visit)

Loyalty (Total Visits)

True Friends' Membership Count

Membership Type
- Couple
- Family — 134
- Individual
- Retiree

Member Number

As we dive more into the true friends' segment, we find out that family members have the largest portion, which is over 50%. So, interns of the result, the club should delight those family members and maintain a good relationship with them.
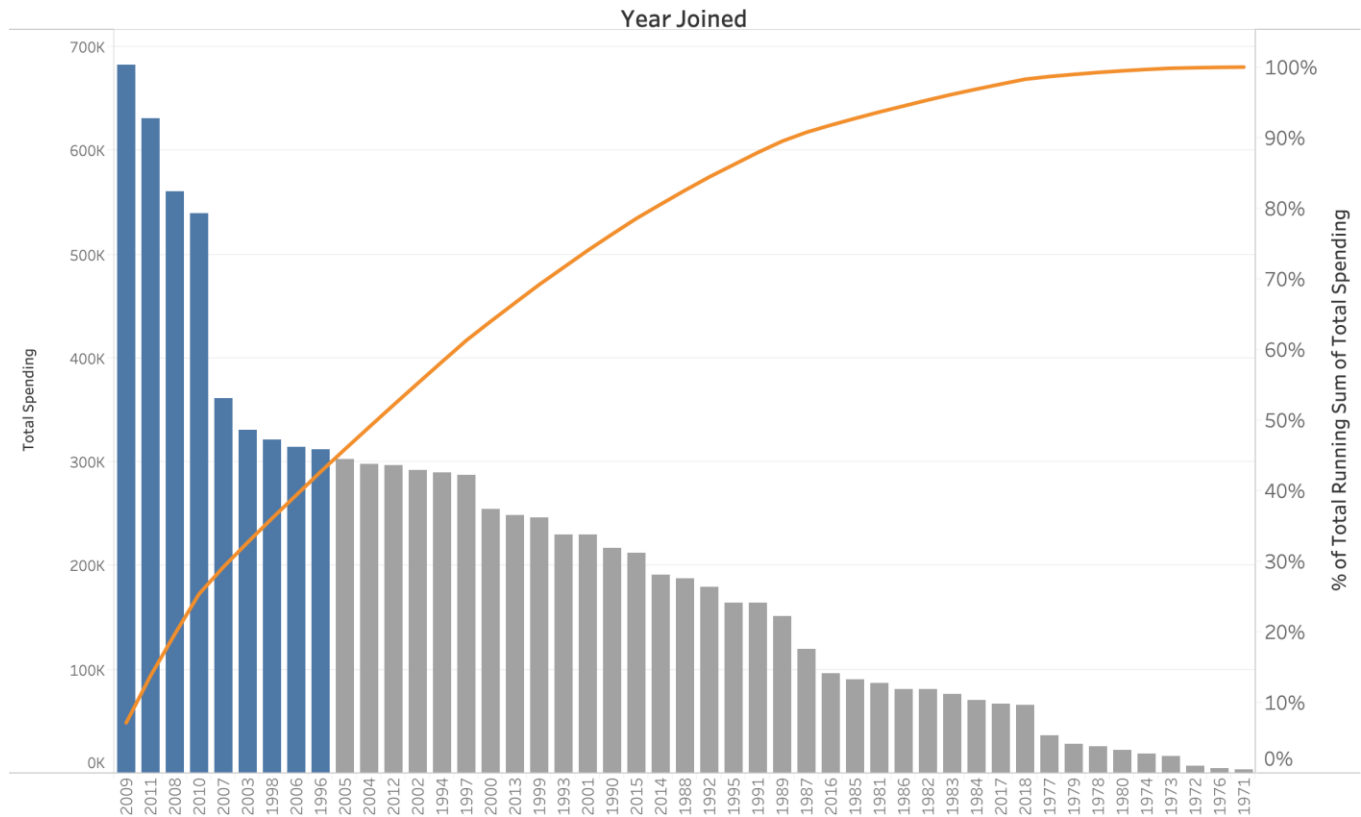
From the above **Pareto Chart,** we can see that country club's most valuable (from the top to lower) customers groups are customers who joined in 2009, 2011, 2008, 2010, 2007, 2003, 1998, 2006, 1996, which contribute 42.71% of the entire total spending.

4.Make two recommendations for potential marketing targets.
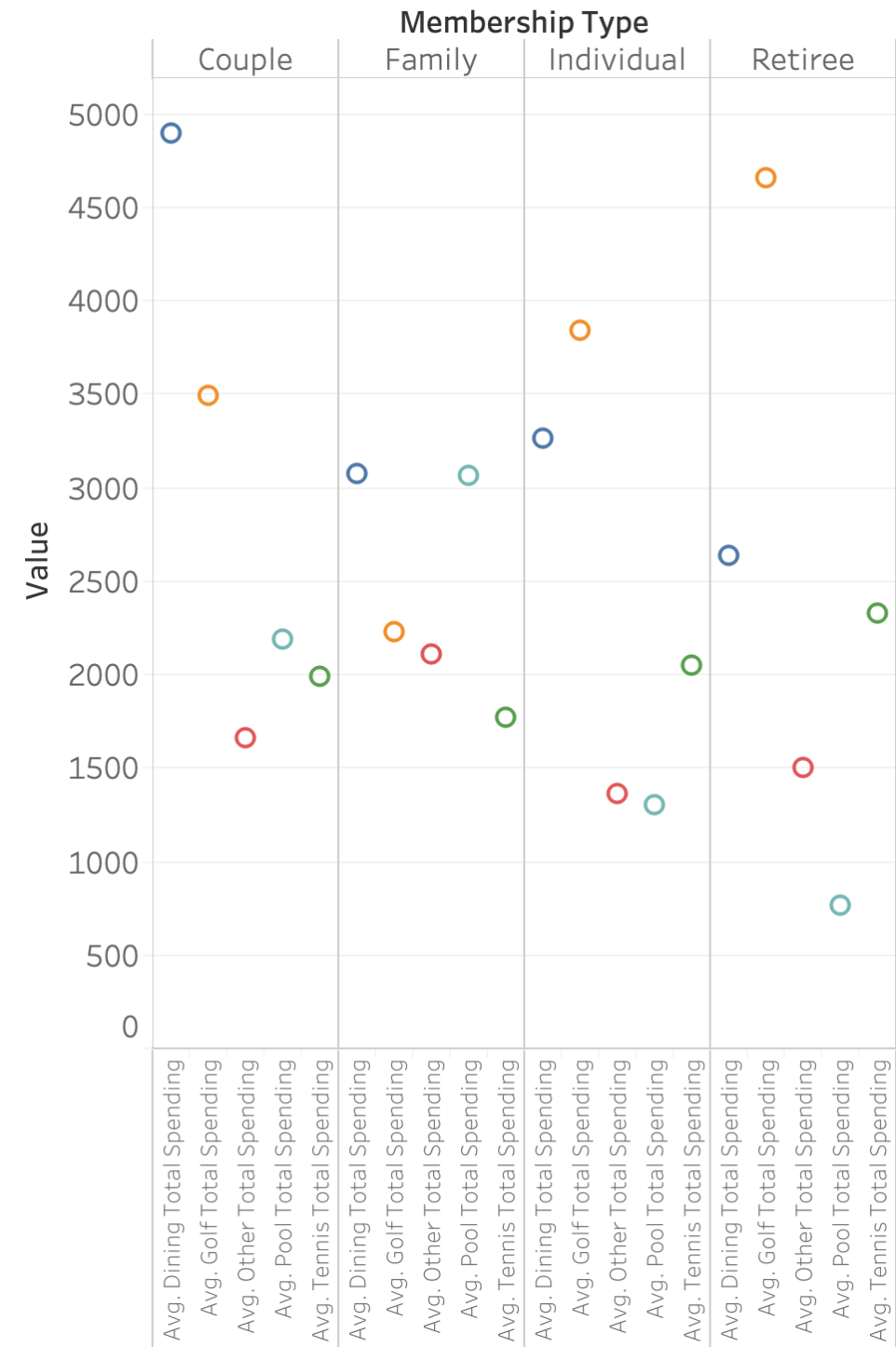
Recommandation#1: Based on the graph above, family members who spend a lot of money on pool are most likely to also spend money on dining and other events (ski_club, education_series, etc.) instead of non-family activities.

Description#1: Family members tend to join events (pool, ski_club, eating) in which all family members can participate together. So Blue Hill CC can consider provide more promotions on pool for family members

Recommandation#2: Based on the same graph above, members (Individual, Couple and Retiree) who do not have children to take care of, are most likely to spend on Golf.

Description#2: Adults more tend to Golf. However, young children prefer pools instead of Golf. So Blue Hill CC can consider provide more promotion on Golf for Individual, Couple and Retiree members

5.What can you learn from the data about the nature of Promo1 and Promo2?
Promo 1 is related to dining. It increases the total dining revenue and total dining visits.
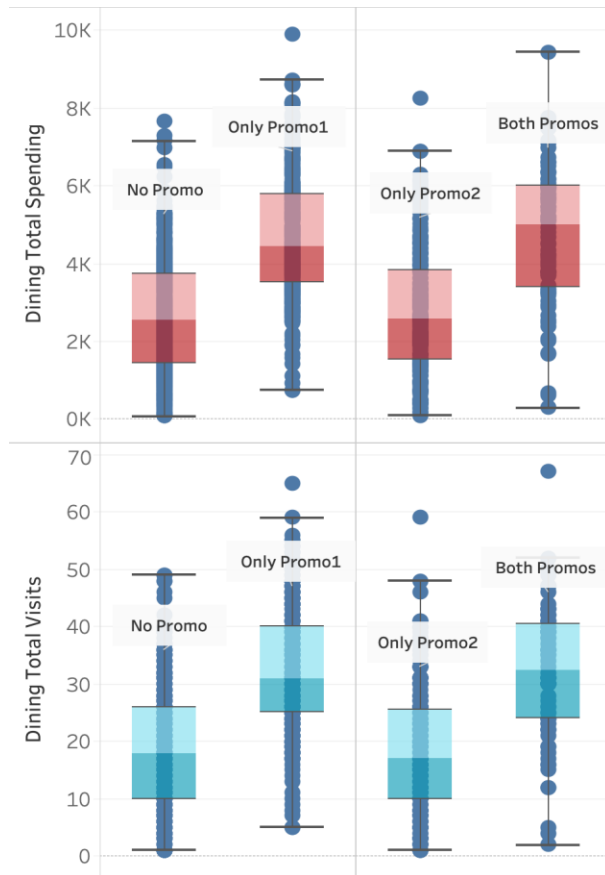
Promo 2 is related to "other" (miscellaneous activities). It increases the total miscellaneous activities revenue and total miscellaneous activities visits.