Analysis Project - Report

Task 4. Descriptive Statistics/Exploratory Task

a. **Average profit and activation per campaign type**: The one campaign with most order is 1st line and with an activation number of 0.03 and average profit 0.21. Although kombination were the one who had the highest activation rate and with even little bit better average profit, the orders are less than tripled than 1:st lines. With total orders of 1782, the average profit was as little as 0.13.

b. **Average profit and activation per addon**: The campaign types that performed least good were 1st line, BUT most profitable were also 1st line with only "free shipping"-addon.

- Check with free shipping activated, performed least with total of 56 orders, 0 in average profit and 0.01 in activation.
- Average profit with 0.14 and average activation of 0.03 were 1st line with gift activated and the total orders of 648 and 1st line with 875 orders, show more clearer that 1st line were not successful in this addon-campaign.
- Some other data show even if 1st line had been more successful especially in activation, the profit were not so much.

type	freeGift	payedGift	freeShipping	freeExressShipping	freeRetur	TotalOrders	AvgProfit	AvgActivation
1:st line	1	0	1	0	0	875	0.14	0.03
1:st line	1	0	0	0	0	648	0.14	0.03
all order	0	0	0	0	0	1130	0.04	0.02
check	0	0	1	0	0	56	0	0.01
1:st line	1	0	0	0	1	90	0.16	0.03
1:st line	0	1	0	0	0	328	0.19	0.03
all order	1	0	0	0	0	98	0.07	0.02
1:st line	0	0	1	0	1	4	0.18	0.03

Least profitable < 0.2 + average activation.

type	freeGift	payedGift	freeShipping	freeExressShipping	freeRetur	TotalOrders	AvgProfit	AvgActivation
1:st line	0	0	0	0	0	1384	0.24	0.03
1:st & 2:nd line	0	0	0	0	0	663	0.26	0.02
1:st line	0	0	1	0	0	929	0.27	0.03
check	0	0	0	0	0	1505	0.23	0.01
all order	0	0	1	0	0	518	0.32	0.02
1:st & 2:nd line	0	1	1	0	0	138	0.25	0.02
1:st line	0	0	0	0	1	47	0.22	0.03
all order	0	1	0	0	0	36	0.29	0.02
1:st line	0	1	1	0	0	108	0.26	0.03
kombination	0	0	1	0	0	13	0.21	0.05
1:st line	1	1	0	0	0	6	0.32	0.03
1:st line	0	1	0	0	1	5	0.25	0.03
check	0	0	1	1	0	10	0.21	0.01
1:st & 2:nd line	0	0	1	0	0	8	0.27	0.02
check	0	1	0	0	0	1	0.28	0.01

Most profitable > 0.2 + average activation.

c. **Average profit and activation per requirement:**

With fewer orders made, it makes it tricker for reflecting
and decision-making even though the profit is clearly at a
negative value. Although activation rates seem steady and
looking at such a big profit loss of -0.84 but with only 8
orders suggest this might not be a good combo to continue
with or even to little data to make a decision. More
accurate data in this case would be 1st line with
brandselection with a total of 656 orders and only a
profit of 0.09.

type	sale	reducedPrice	brandSelection	reqValue	req_items	reqTime	reqOrdinaryPrice	reqReduced_OrdinaryPrices	TotalOrders	AvgProfit	AvgActivation
1:st line	0	0	0	0	0	0	0	1	656	0.09	0.03
kombination	1	0	0	0	1	0	0	0	28	-0.25	0.05
kombination	0	1	1	0	0	0	0	0	10	-0.25	0.05
all order	0	1	1	0	0	0	0	0	209	-0.25	0.02
all order	0	1	0	0	0	0	0	0	138	-0.34	0.02
1:st line	0	1	0	0	0	0	0	0	43	-0.16	0.03
all order	1	0	0	0	0	0	0	0	56	-0.19	0.02
all order	1	0	1	0	0	0	0	0	54	-0.18	0.02
1:st line	0	1	0	0	0	0	0	1	8	-0.09	0.03
all order	1	1	1	0	0	0	0	0	8	-0.84	0.02
kombination	0	0	1	0	0	0	0	1	9	0.1	0.05
all order	0	0	0	0	0	0	0	1	23	0.1	0.02
kombination	0	1	0	0	1	0	0	0	23	-0.18	0.05
all order	1	1	0	0	0	0	0	0	17	-0.45	0.02
1:st line	0	0	1	0	1	0	0	0	3	-0.01	0.03

Even though the orders are not many, the campaigns
which required a minimum value or minimum number of
items or required a campaign to be used within a
limited time, it seems to have impacted the profit in a
very positive direction.

type	sale	reducedPrice	brandSelection	reqValue	req_items	reqTime	reqOrdinaryPrice	reqReduced_OrdinaryPrices	TotalOrders	AvgProfit	AvgActivation
all order	0	0	0	1	0	0	0	0	87	0.44	0.02
1:st line	0	0	0	1	0	1	0	0	65	0.41	0.03
1:st line	0	0	0	1	0	0	0	0	220	0.33	0.03
1:st line	0	0	0	1	1	0	0	0	20	0.44	0.03
check	0	0	1	0	0	0	0	0	1178	0.21	0.01
kombination	0	0	0	0	0	0	0	0	1100	0.26	0.05
1:st line	0	0	1	0	0	0	0	0	330	0.21	0.03
1:st & 2:nd line	0	0	0	0	0	0	0	0	671	0.26	0.02
1:st line	0	0	0	0	0	1	0	0	448	0.25	0.03
1:st line	0	0	0	0	0	0	0	0	2088	0.2	0.03
1:st line	0	0	0	0	1	0	0	0	518	0.28	0.03
all order	0	0	0	0	0	0	0	0	957	0.27	0.02
1:st line	0	0	0	0	0	0	1	0	25	0.27	0.03
check	0	0	0	0	0	0	0	0	462	0.25	0.01
1:st & 2:nd line	0	0	0	0	1	0	0	0	138	0.25	0.02
all order	0	0	0	0	1	0	0	0	147	0.28	0.02
all order	0	0	1	0	0	0	0	0	31	0.22	0.02
all order	0	0	0	0	1	1	0	0	52	0.29	0.02
all order	0	0	0	0	0	0	1	0	3	0.37	0.02

d. **Average profit and activation per campaign type and discount level:**

type	DisFirst	DisSecond	DisCheck	TotalOrders	AvgProfit	AvgActivation
1:st & 2:nd...	50	0	0	4	-0.2	0.02
1:st line	30	0	0	1930	0.19	0.03
1:st line	20	0	0	93	0.14	0.03
all order	30	0	0	550	0.06	0.02
all order	40	0	0	77	0.14	0.02
all order	50	0	0	189	-0.24	0.02
all order	20	0	0	363	0.19	0.02
check	0	0	29.41176471	28	0.02	0.01
check	0	0	40	120	0.02	0.01
check	0	0	50	63	-0.11	0.01
check	0	0	37.5	179	0.17	0.01
check	0	0	31.25	24	0.12	0.01
check	0	0	41.66666667	41	0.17	0.01
kombination	30	10	0	24	0.18	0.05
kombination	50	30	0	51	-0.22	0.05
kombination	40	15	0	10	-0.25	0.05
kombination	40	10	0	8	0.16	0.05

Here the least profitable activation is quite good in this category, and this is a good way to satisfy and maybe get new customers.

Overall:

- 1st line with discount on first item: its nearly reaching 0.2 in profit and have good activation rate. This is good values especially with a total order of 1930.
- Combination and discount on first and second item are good at least on the discount with 30% on first, and 10% on second with an average rate of 0.05. Maybe this would be something for a business to analyze further?

	type	DisFirst	DisSecond	DisCheck	TotalOrders	AvgProfit	AvgActivation
▶	check	0	0	25	344	0.37	0.01
	1:st line	10	0	0	1	0.36	0.03
	1:st & 2:nd line	30	10	0	6	0.34	0.02
	1:st line	25	0	0	9	0.34	0.03
	check	0	0	20	49	0.33	0.01
	kombination	30	20	0	121	0.3	0.05
	check	0	0	26.66666667	8	0.3	0.01
	1:st & 2:nd line	30	0	0	227	0.29	0.02
	all order	25	0	0	589	0.27	0.02
	kombination	30	25	0	172	0.26	0.05
	kombination	40	20	0	395	0.26	0.05
	1:st & 2:nd line	40	40	0	23	0.26	0.02
	kombination	20	20	0	12	0.25	0.05
	1:st & 2:nd line	20	0	0	145	0.25	0.02
	kombination	40	25	0	375	0.24	0.05
	1:st line	50	0	0	617	0.24	0.03
	1:st & 2:nd line	40	0	0	404	0.24	0.02
	check	0	0	33.33333333	784	0.23	0.01
	1:st line	40	0	0	1774	0.22	0.03
	all order	10	0	0	14	0.21	0.02
	kombination	50	25	0	2	0.21	0.05

- According to this data having discount by using internal check have been quite successful and is a method that should be continuedly used and it can only be used together with check-campaigns.
- DisFirst seems to also be good for the profit but so do DisSecond
- Activation is highest at Disfirst + Dissecond on kombination

9. Correlation between variables

Correlation describes the relationship between two variables.

Variabel 1	Variabel 2	Korrelationskofficient
DisFirst	profit	-0.0577
DisSecond	profit	0.0343
DisCheck	profit	0.0032
DisFirst	Activation	0.6536
DisSecond	Activation	0.702
DisCheck	Activation	-0.587

- **Discount on first item and profit:** suggest a weak negative relationship and indicating that changes in

one variable are weakly associated with changes in the other, although this relationship is not strong or consistent. In this care, the discount of the first item increases, the profit tends to decrease slightly, but the relationship ain't strong.

- **Discount on second item and profit**: suggests a very weak positive relationship, indicating the changes in one variable are very weakly associated with changes in the other and in that case may not be meaningful for decision-making purposes.

- **Discount on items when using internal check and the profit** suggests an extremely weak positive relationship, indicating the changes in one variable have almost no meaningful association with changes in the other. Businesses should not rely on this information in decision-making.

- **Discount on first item and activation**: indicates a quite strong positive relationship, suggesting that changes on the discount offer are closely associated with changes in activation rates.

- **Discount on second item and activation**: indicates a strong positive relationship and have similar values as discount on first item vs. activation, but here the activation rates are even slightly higher when discount on the second is offered.
- **Discount on items using payed internal check and activation**: Indicates a moderately strong negative relationship, suggesting that the changes in the discount offered on items with this payment method are pretty much associated with changes in activation rates.

12. The campaign type with less than 50 orders were the campaign types of ladder and three for two.
Reasons could be that customers prefer more simple offers and instant discounts.
Three for two-offer might not be appealing if the customer doesn't have a need or find it relevant for buying multiple items.
The items that's on for campaigns might not do well, for example if the items sold are already of low price or low quality.

15. Profit and Activation based time.
-- Year --
The total order for each category type have decreased a bit.
The average profit a bit. The average profit has increased,
but only a little bit and doesn't compensate for the less
total amount orders placed.

-- Month --
The most profitable months seems to be around summertime.
(June-august) and in winter/fall (November-February).

-- Weekday –
The most orders placed seems to be on the weekend (Friday-
Sunday), but also the least profitable. At the start of the
week, it seems to be also many orders placed and more
profitable (0.2 >).

Summary:

	total	type	averageProfit	averageActivation
▶	809	1:st & 2:nd line	0.25	0.02
	1170	kombination	0.23	0.05
	1640	check	0.22	0.01
	4424	1:st line	0.21	0.03
	1782	all order	0.13	0.02

Years 2014 and 2015.

The one campaign who were most successful with most number
of orders, good profit and activation was 1st line. 1st line
were performing well in some of the addons, but not all.
Same goes for the discount part it performed not as well for
example

Although kombination were the one who had the highest
activation rate and even a little better average profit, the
orders are less than tripled amount than 1:st lines.

"All order"-campaign does have a high count of orders, but
the overall profit is quite bad even though the activation
rate is okay.

Check is also questionable since it has a quite low
activation rate, question rely on whether it's possible to
increase activation for future business?