Analysis & Optimization of Facebook Ads Targeting Strategy

Context

As Facebook users interact with the platform, adding demographic information, liking Particular pages and commenting on specific posts, Facebook builds a profile of that user based on who they are and what they're interested in. Advertisers can create Facebook Adverts, then create an 'Audience' for that Advert or group of Adverts. Audiences can be built from a range of attributes including gender, age, location and interests. This specific targeting means advertisers can tailor content appropriately for a specific audience, even if the product being marketed is the same.

For the current stage, we wants to generate more profit instead of building brand awareness.
We hired advertising agency: x, y, z. They launched Campaigns separately . We want to compare the performance of these 3 agencies.
Supposing these 3 agencies launched campaigns for 1 week, and the average order value is 100 euros.

Sales Conversion Optimization Dataset

The dataset has 1143 rows & 11 columns

ad_id	xyz_campaign_id	fb_campaign_id	age	gender	interest	Impressions	Clicks	Spent	Total_Conversion	Approved_Conversion
708746	916	103916	30-34	M	15	7350	1	1.43	2	1
708749	916	103917	30-34	M	16	17861	2	1.82	2	0
708771	916	103920	30-34	M	20	693	0	0	1	0
708815	916	103928	30-34	M	28	4259	1	1.25	1	0
708818	916	103928	30-34	M	28	4133	1	1.29	1	1
708820	916	103929	30-34	M	29	1915	0	0	1	1
708889	916	103940	30-34	M	15	15615	3	4.77	1	0
708895	916	103941	30-34	M	16	10951	1	1.27	1	1
708953	916	103951	30-34	M	27	2355	1	1.5	1	0
708958	916	103952	30-34	M	28	9502	3	3.16	1	0
708979	916	103955	30-34	M	31	1224	0	0	1	0
709023	916	103962	30-34	M	7	735	0	0	1	0
709038	916	103965	30-34	M	16	5117	0	0	1	0
709040	916	103965	30-34	M	16	5120	0	0	1	0
709059	916	103968	30-34	M	20	14669	7	10.28	1	1

Explanation of each column in the dataset:

•1.) Ad ID: unique ID for each ad.

•2.) XYZ campaign id: an ID associated with each ad campaign of XYZ company.

•3.) FB campaign id: an ID associated with how Facebook tracks each campaign.

•4.) age: age of the person to whom the ad is shown.

•5.) gender: gender of the person to whom the add is shown

•6.) interest: a code specifying the category to which the person's interest belongs (interests are as mentioned in the person's Facebook public profile).

•7.) Impressions: the number of times the ad was shown.

•8.) Clicks: number of clicks on for that ad.

•9.) Spent: Amount paid by company XYZ to Facebook, to show that ad.

•10.) Total conversion: Total number of people who enquired about the product after seeing the ad.

•11.) Approved conversion: Total number of people who bought the product after seeing the ad.

Creating Additional Features :

1.Cost Per Impression (CPM)

2. Cost Per Click (CPC)

3. Cost Per Action (CPA)

4. Cost Through Rate (CTR)

5. Conversion Rate (CVR)

6. Revenue

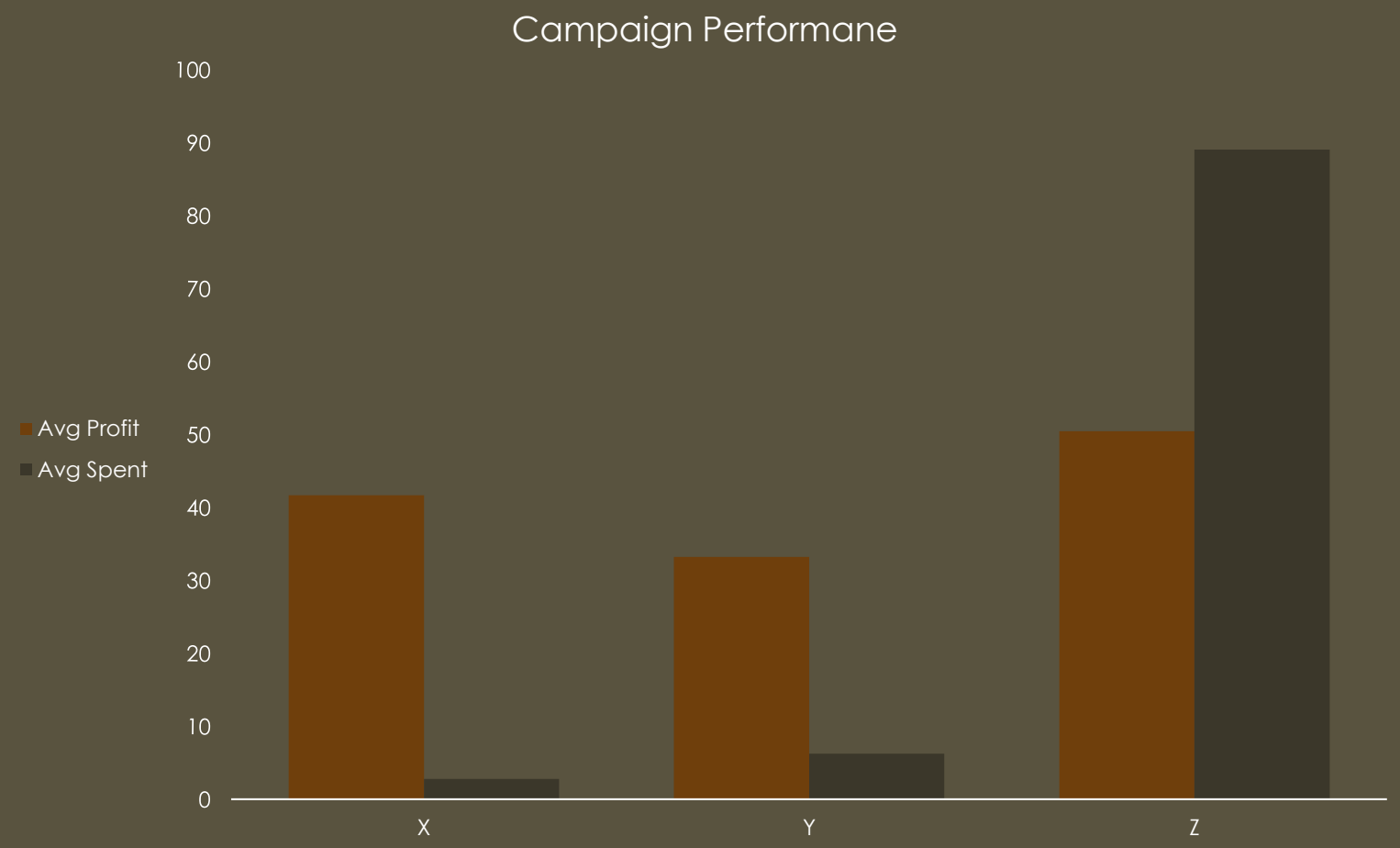
7. Profit

8. Campaign ID : Replace XYZ Campaign ID to the company name.

CPM	CPC	CPA	CTR	CVR	Revenue	Profit	Campaign_ID
0.19	1.43	0.715	0.01	50	100	98.57	X
0.10	0.91	0.91	0.01	0	0	-1.82	X
0.00		0	0.00	0	0	0	X
0.29	1.25	1.25	0.02	0	0	-1.25	X
0.31	1.29	1.29	0.02	100	100	98.71	X
0.00		0	0.00	100	100	100	X
0.31	1.59	4.77	0.02	0	0	-4.77	X
0.12	1.27	1.27	0.01	100	100	98.73	X
0.64	1.5	1.5	0.04	0	0	-1.5	X
0.33	1.053333	3.16	0.03	0	0	-3.16	X
0.00		0	0.00	0	0	0	X
0.00		0	0.00	0	0	0	X

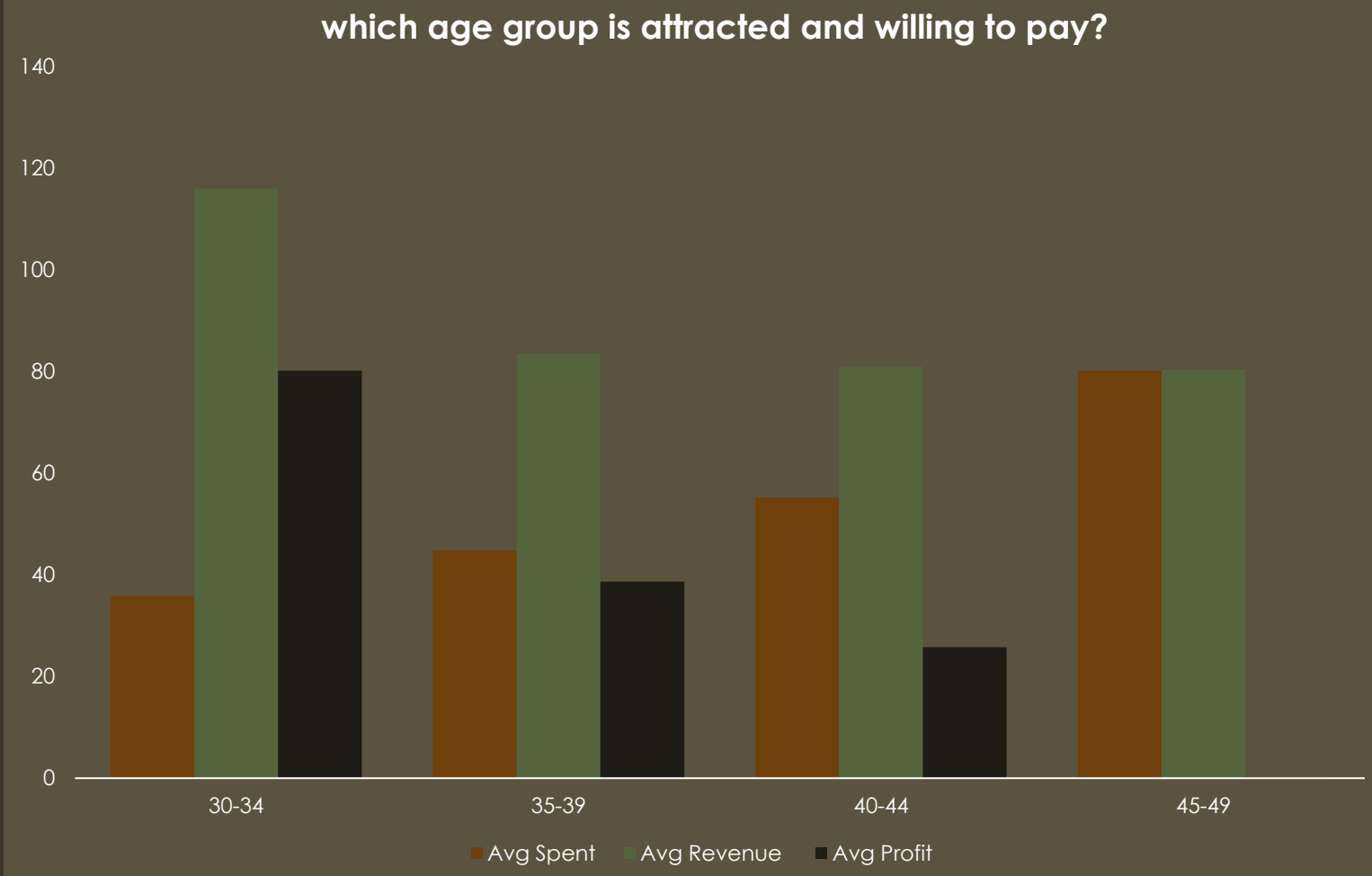
Agency Z has delivered highest profits with greatest advertising volumes via high advertising Spent .

Agency **X** Spends least, and at the same time it brings highest ROAS.



Generally, **profits** fall as customers age grows.

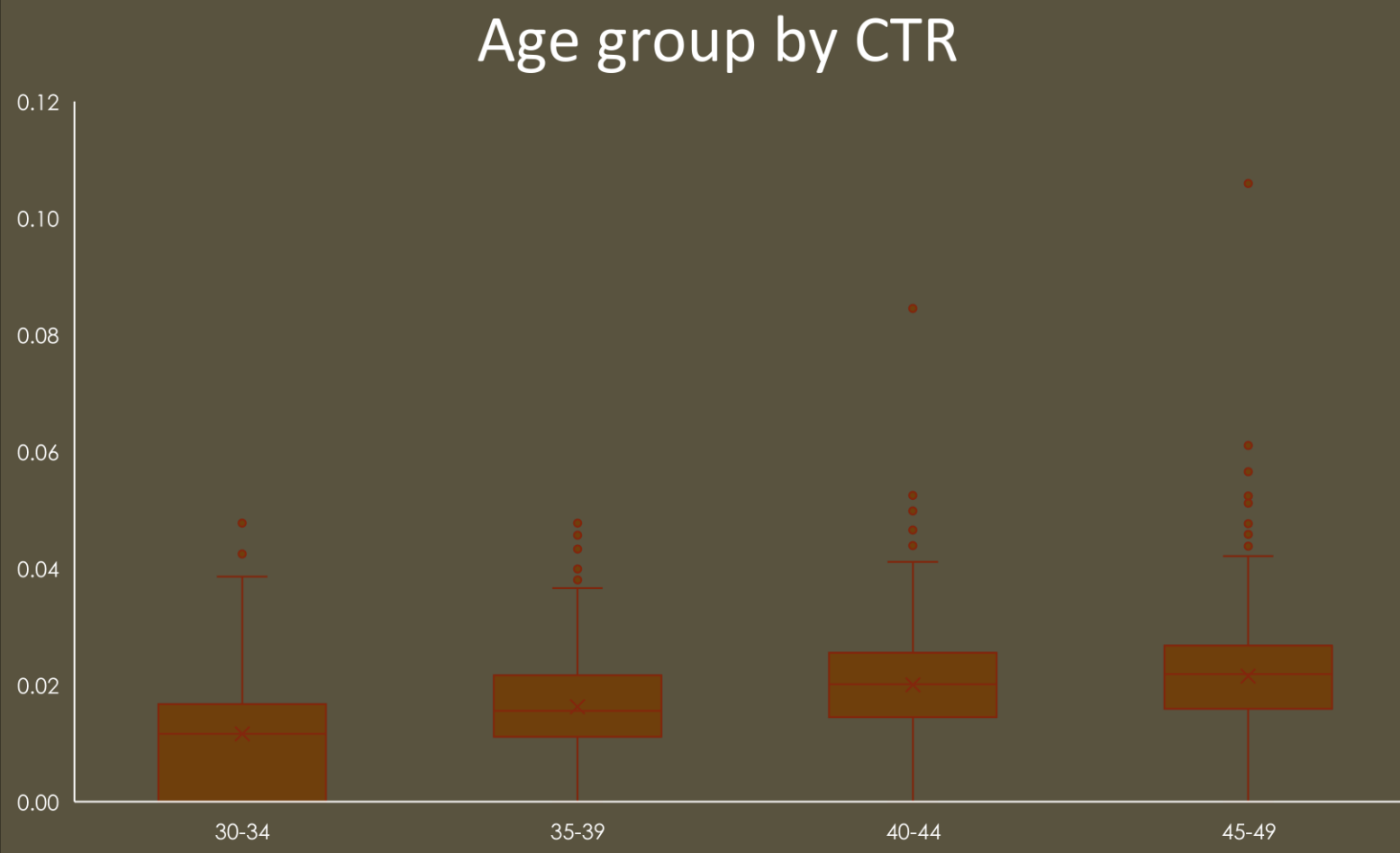
Age group **30-34** is our key target audience. They bring the highest **ROAS**.



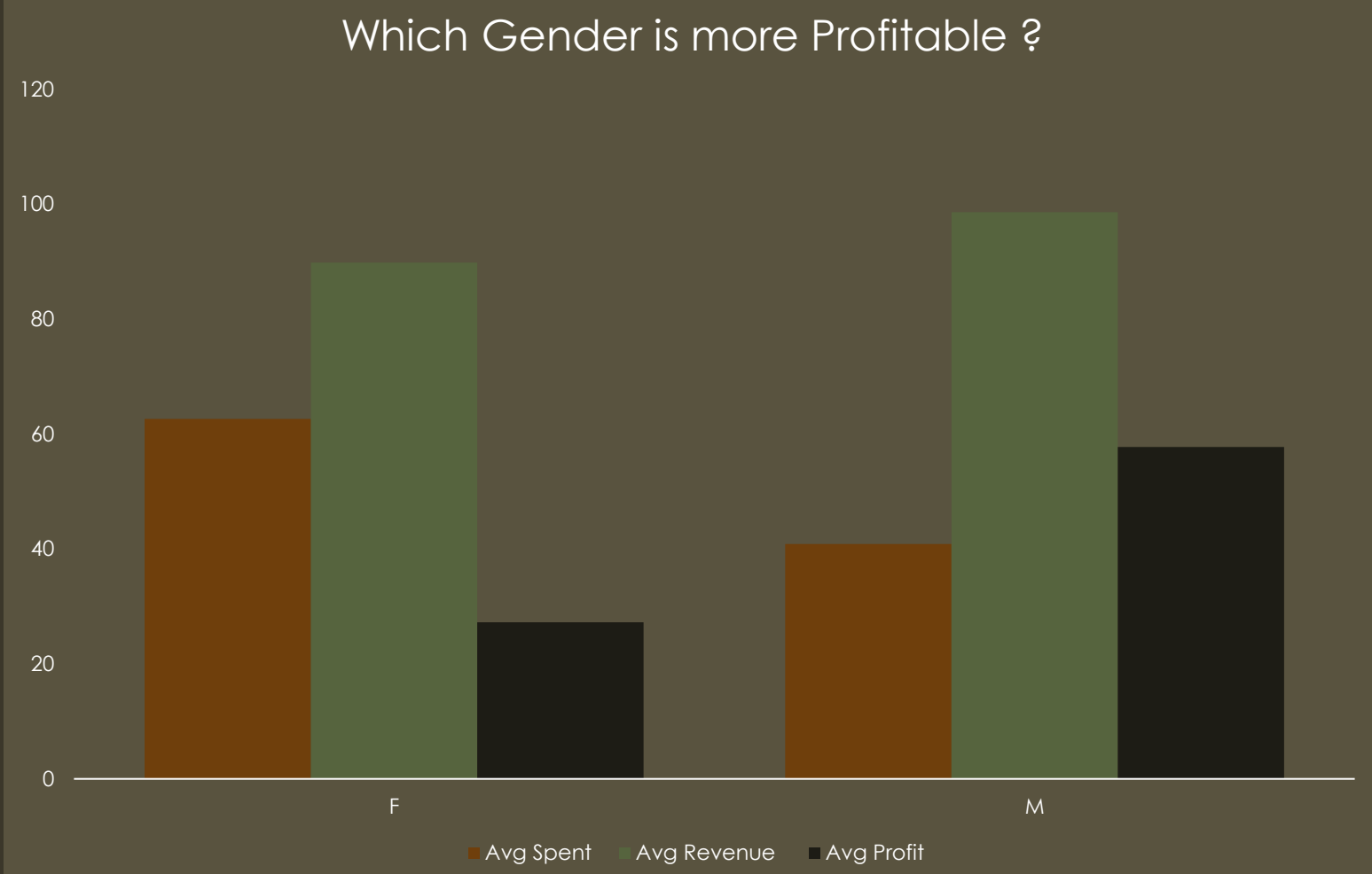
The elder group click on the Ads more frequently.

That's maybe because older people don't differentiate between the sponsored content (Advertising) and feeds.

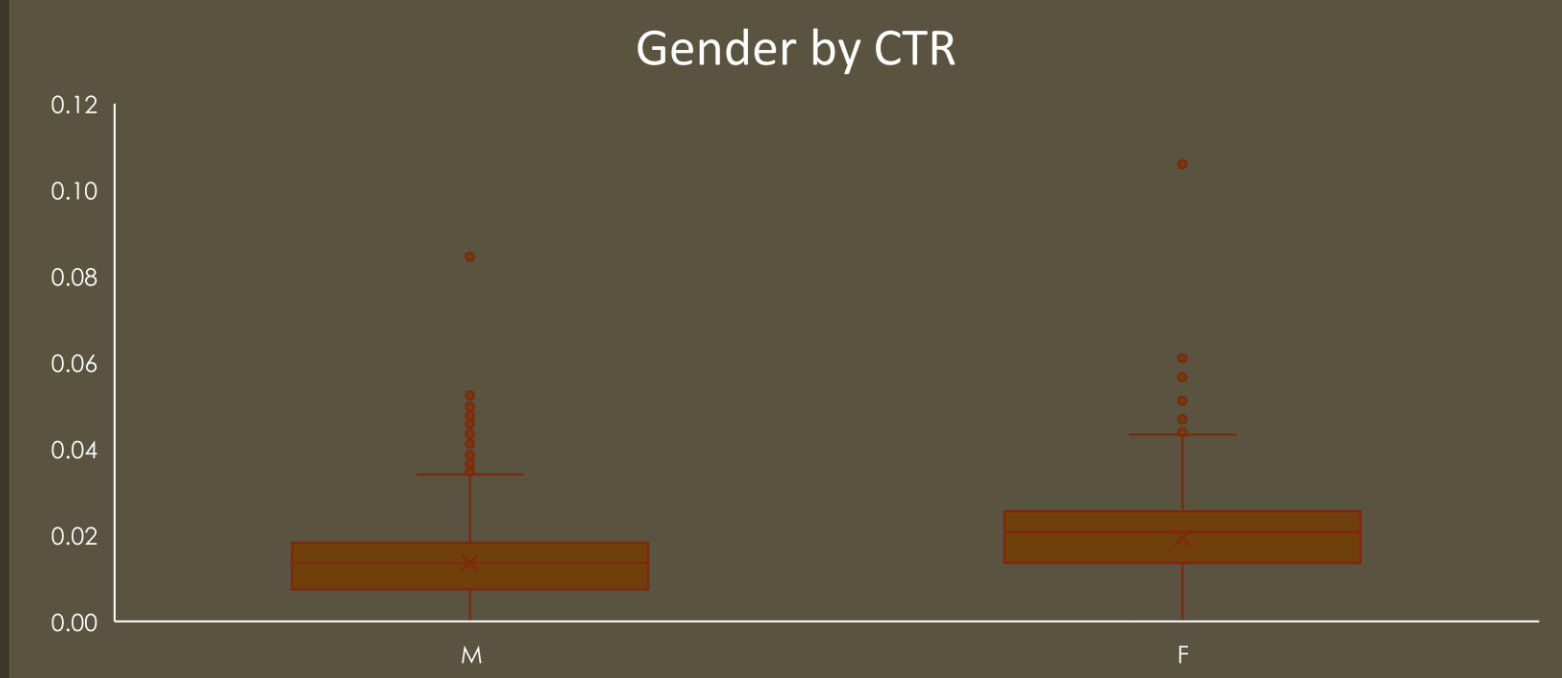
elder group is more cautious about online payments, so they seem hesitated to purchase. These two hypotheses may answer why profits fall as customers age grows.

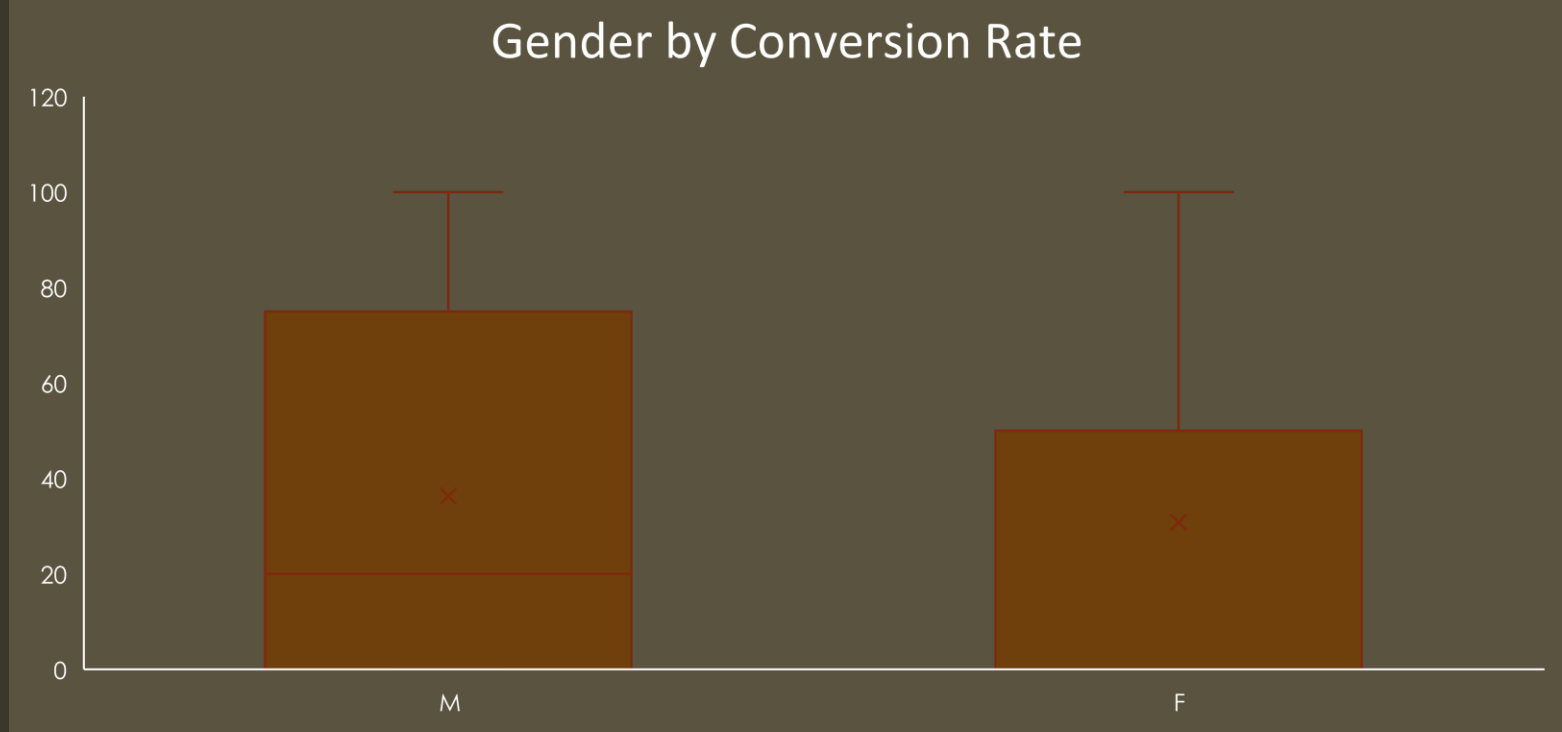


Generally, Ad investment on men is more profitable, They bring the highest (ROAS).



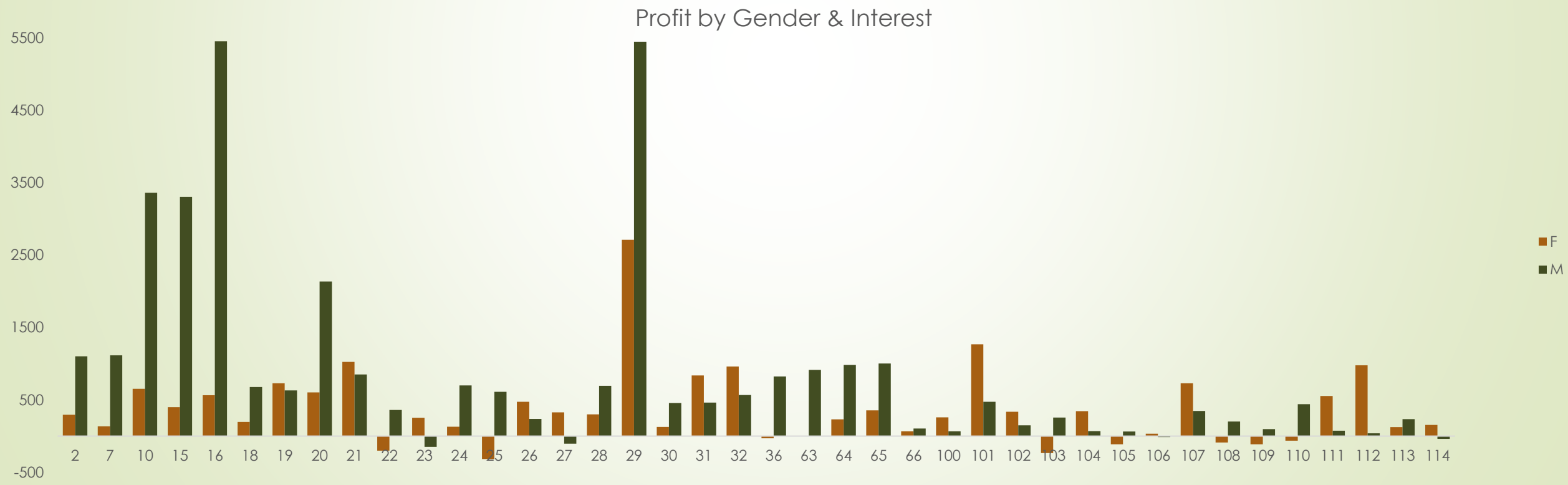
Women show higher interest in our ads, but they converted less





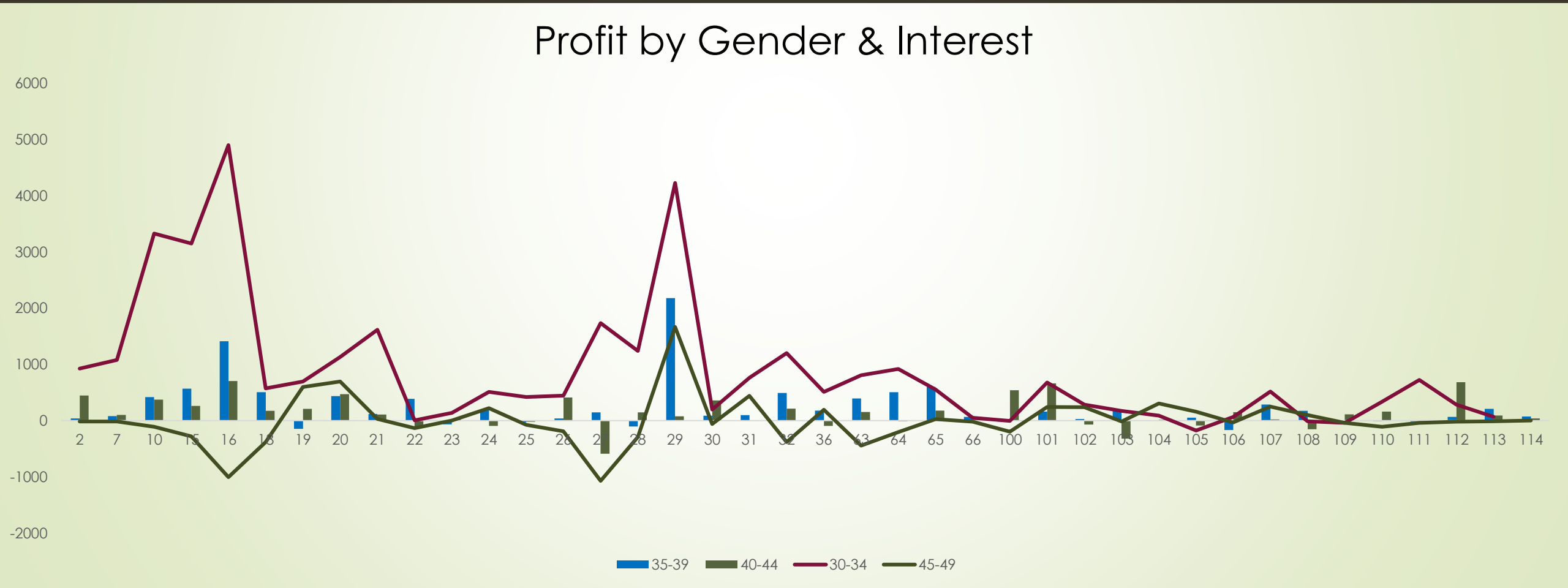
Women are more interested in 29 , 101, 107, 111, 112
Men are more interested in 10, 15, 16, 20, 29

Interest Group to be excluded form the targeting list (those have generated low profit) : 22 , 25, 27, 103



40-44 & 45-49 age group bring us low profit and they are interested in 19, 20, 29.

30-34 age group bring us the high profit and they are interested in 10, 15, 16, 29 same as 35-39 age group.



Conclusion:

- From the three Agencies agency X brings the highest profit with the least spent.
- Age group 30-34 is our key target audience. They bring the highest profit.
- Older people click more on our ads, but they converted less.
- Men is more profitable; They bring the highest ROAS.
- Women show more interest in our ads, but they converted less.
- It's a good strategy to combine the gender and interest when targeting at specific interest group:
  - Interest group where we can target men only (2, 7, 10, 15, 16, 20, 29)
  - Interest group where we can target women only (101, 107, 111, 112)