

Jeff's BUSINESS Digital Marketing Spend Per  
Demographic

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## Background:

Jeff's BUSINESS is a local to Ames, Iowa BUSINESS. My company runs their digital marketing and does business and marketing consulting with them. Jeff's BUSINESS is in the center of campus town for Iowa State University. Due to this fact the demographics to which Jeff serves are cyclical. Due to students flooding the town for the Fall and Spring semesters, the younger demographic of males and females aged 18 – 23 increase the population of Ames and sales for Jeff's BUSINESS. The Fall and Spring months with students are critical for Jeff's yearly revenue. Year-round residents of Ames, Iowa are another major piece of Jeff's yearly revenue.

## Support:

In December of 2019, Jeff and Purple Marketing Consulting began tracking data on the Jeff's BUSINESS website, where customers are able to order online. Google Analytics collects swaths of data about the users who navigate the website and about how the user navigate Jeff's BUSINESS's website. Around this same time, we launched Google Ads and Facebook Ads promoting Jeff's online ordering. These ads targeted broad demographics. All of this data has also been tracked. The digital advertising spend on these ads have been purposefully varied in order to determine the ideal marketing spend per demographic.

Bringing these two pieces of information together helped us to form the following questions:

## Questions:

- **How do the Google advertisements perform per age demographic and over time?**
- **Are the Google Ads bringing in new business?**

First and foremost, due to the coronavirus this data looks very interesting and did not help in the grand scheme of trying to figure out the optimal Google Ad costs that lead to the greatest return on investment. The second truth be told, my data did not port from Google Analytics to Tableau very well. A lot of important data was missing. The author of our textbook helped develop a little web application called Google Data Studio. I used this to develop all of my graphs due to the data handoff folly.

Let's dive into the data. First, we will look at **"How have the Google Advertisements performed per and over time?"** To answer this, Figure 1 shows two lines smoothed over with a moving average that represent Google advertisement costs and profits – I tried my hardest to get dollars on the Y axis but with no luck. The costs are data points directly taken from the costs

spent on the ads. Profits are generated from custom equation (number of order \* average profit for an online order - \$14).

Key elements from this graph:

- **The costs are gradually increasing.** Purple Marketing Consulting’s goal was to increase the costs higher and higher each week in order to reveal the optimal Google Advertising costs where we would see an optimal return.
- **The profits line is increasing more rapidly than the costs in the more recent weeks.**

Based on these two elements, the answer to the question “**How have the Google Advertisements performed per and over time?**” is that they have performed well and continue to perform better with an increase to the spend. The fact that the profit trend has a greater slope than the cost would imply that the optimal advertising spend for Google Ads is likely higher than the current spend.

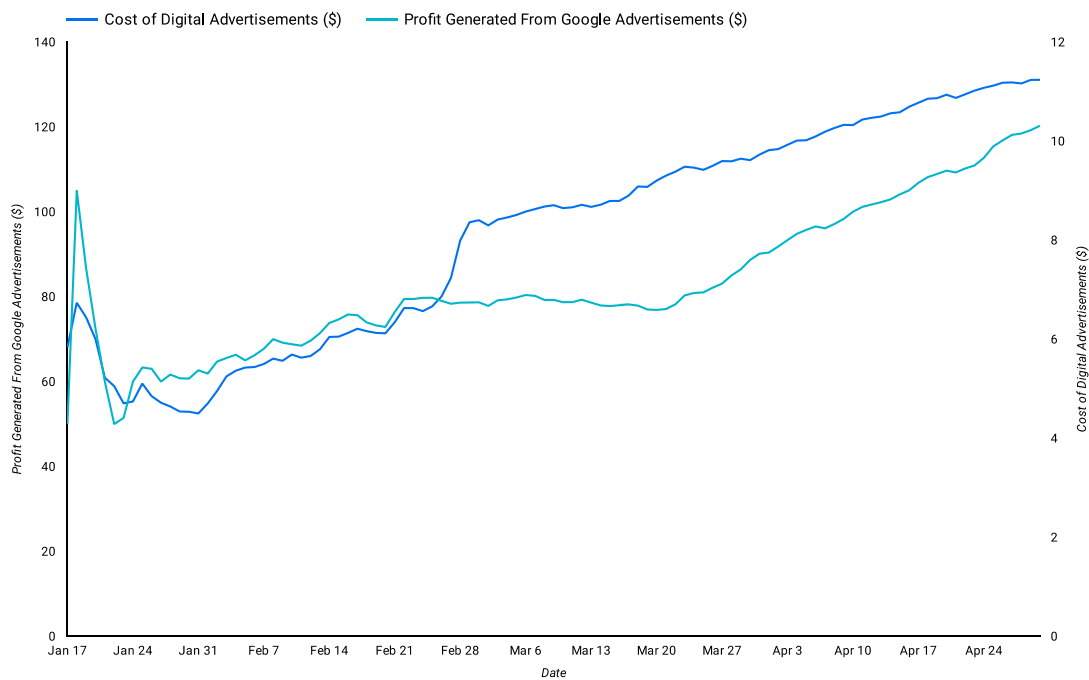


Figure 1. Cost vs. Profit of Google Advertisements (Moving Average)

One question that was raised from Figure 1 was **“At what point has the Google Ad spend reached its optimal point?”** To answer this, see Figure 2. Figure 2 displays a signal line that represents the return on investment from Google Ads. This line was calculated by taking Google Ad Profit/Google Ad Costs. The expectation of Jeff’s BUSINESS is that their ROI is at least 3x. Therefore, this graph, which has its baseline at 800%, would need to fall to 300% to find the optimal Google Ads Cost. This would be done by gradually increasing the Google Ad Spend until the Figure 2 graph had its most recent ROI data point reach 300%.

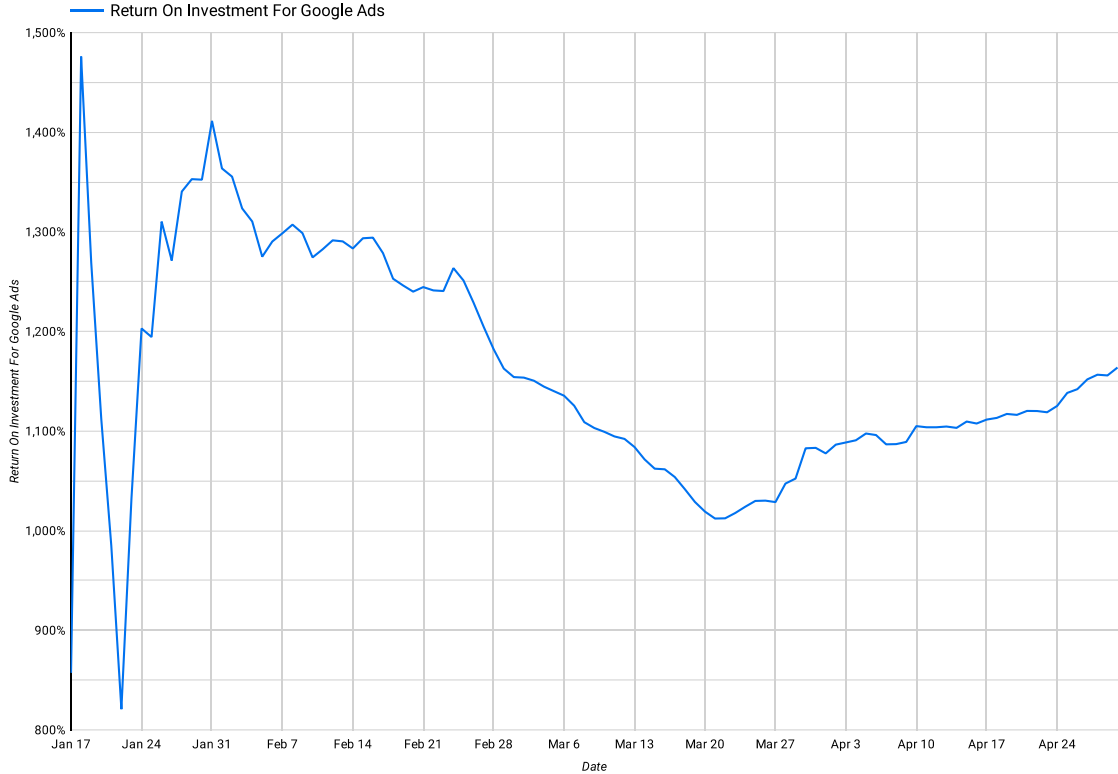


Figure 2. Return on Investment Trend for Google Advertisements

The next question is “How do the digital advertisements perform per age demographic and over time?” In Figure 3, weekly orders broken down by age group are graphed on a bar chart. This chart reflects the store as a whole rather than the orders generated by the Google Ads. Note that Google can only track a sample size of age data as they do not have everyone’s data.

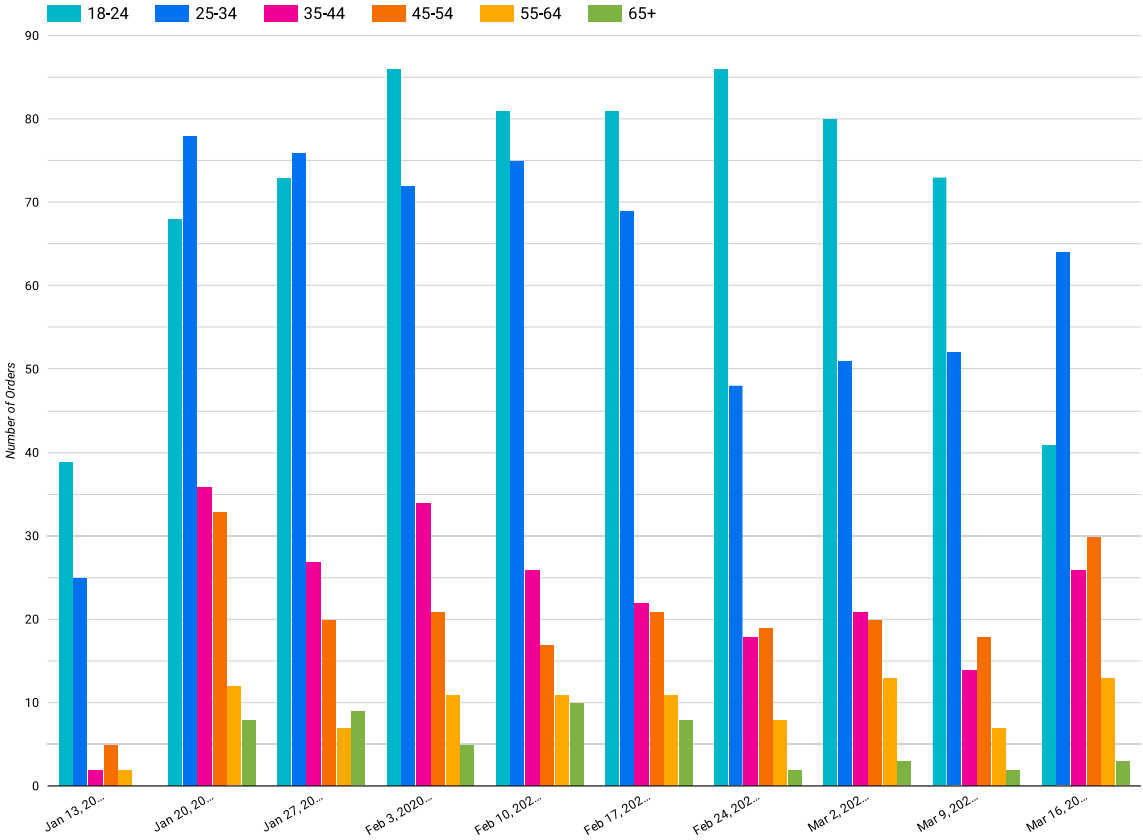


Figure 3. Age Demographics for Users Who Order on The Website

Figure 4 outlines the Age Demographics for Users Who Order on The Website Through a Google Advertisement. As stated on the last page, this data is only a sample size as age data is not a data point captured by everyone.

Key elements from this graph:

- **The 18-24 demographic spiked the first week, March 9<sup>th</sup>, of coronavirus shelter in place in Ames.** Students were likely still around
- **A majority of students left campus to go home after March 9<sup>th</sup>; therefore, a drastic decrease in that age groups response to these ads. This can also be identified in Figure 3.**
- **Figure 4 does not display this very well, but every other age group in Figure 3 for the Week of March 16<sup>th</sup> increased compared to weeks prior.**
- **Poor information.**

Based on Figure 3 and 4, the google ads should likely shift their focus to 25-34 year old demographics with students being gone. Future ads should experiment with increasing orders from older/wealthier demographics.

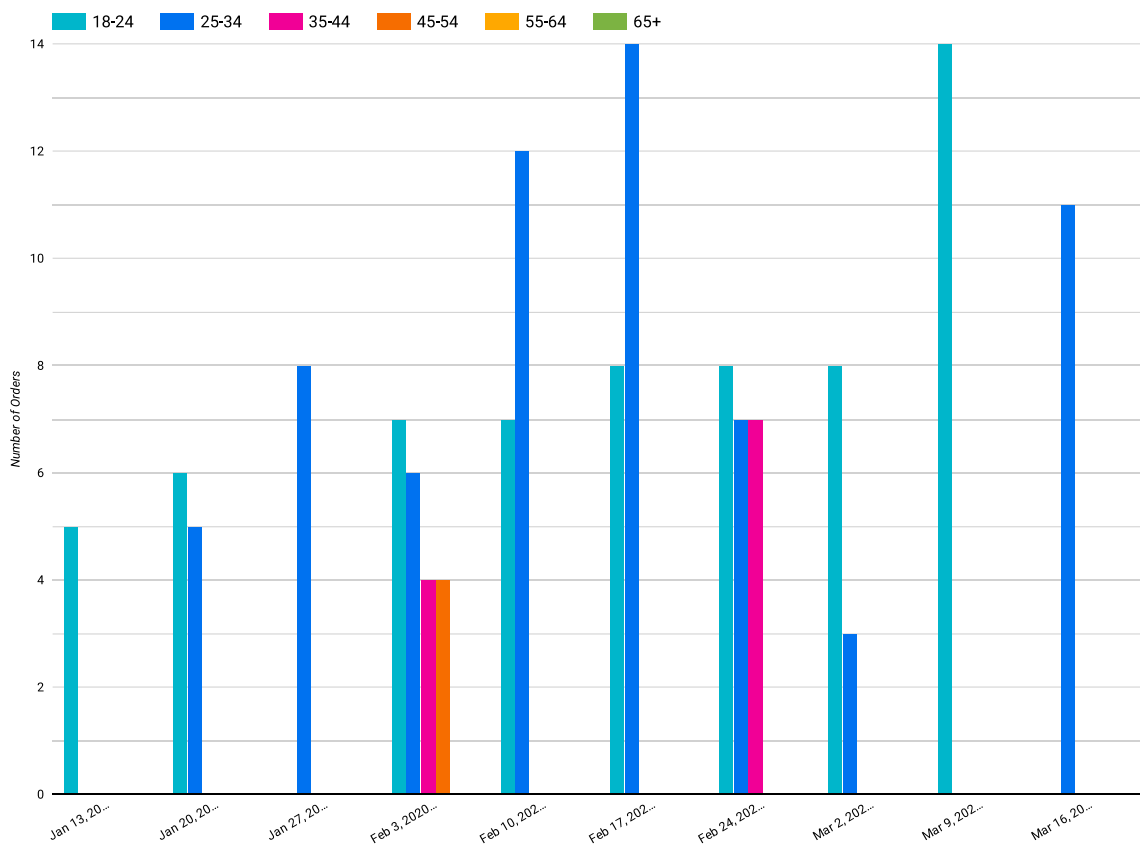


Figure 4. Age Demographics for Users Who Order on The Website Through a Google Advertisement

The next question addressed is “**Are the Google Ads bringing in new business?**” Figure 5 breaks down the medium of all orders made on the website week to week. The mediums in question are organic, these are simply when the website is found from a simple search on a search engine. (none) is when the user got the website by typing in the BUSINESS’s url directly into their browser. cpc is when a user got to the website through a Google ad. Referral is when a user used email, social media, or another website to reach the website. Note that the first and last weeks have incomplete data.

Key elements from this graph:

- **The overall trend as time increases along with the Google Ad spend is that the number of orders increase.** This deduction is sufficient to answer a, “Yes” to the question.
- **The coronavirus effect can be seen in the dip in the bar graph.**
- **Note organic traffic does not appear to be affected by an increase in cpc.** This again implies that the business brought in from the increasing ad spend is new business and not robbing Peter to pay Paul.

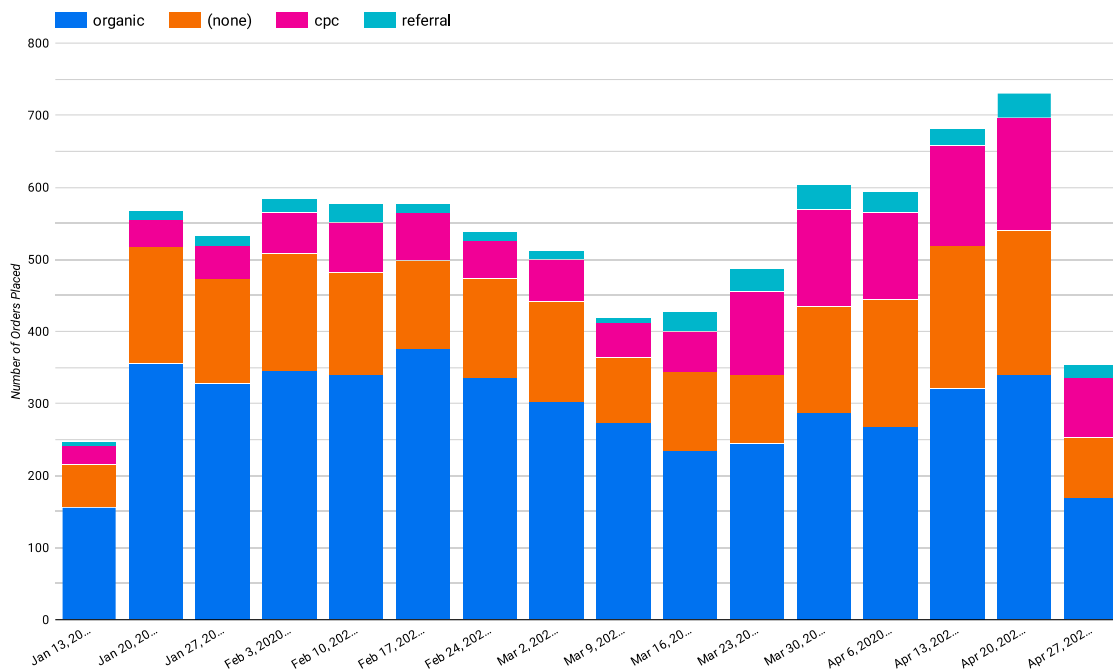


Figure 5. Breakdown of Medium of Entry into the Website.

In closing, the graphical analysis supports the answers to the questions:

- **How do the Google advertisements perform per age demographic and over time?**
- **Are the Google Ads bringing in new business?**

The graphs also give a clear indication of next steps. Purple Marketing Consulting has outlined the next steps that should be taken to optimize the Google advertisement's for Jeff's BUSINESS:

1. Gradually increase the Google Ad Spend until the most recent ROI data point reaches 300%.
2. Future ads should target older/wealthier demographics especially during the summer.