University
for the
Creative Arts

BERLIN SCHOOL OF
BUSINESS & INNOVATION

Essay / Assignment Title: Designing a Tableau Dashboard for Social Media Data Analytics

Programme title: Visualization and Story Telling using Tableau

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Year: 2023

CONTENTS

Contents

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Date: 12.10.2023

INTRODUCTION

Social media and other forms of e commerce is currently the pivotal method of campaigning and revenue income for many firms across the whole world. As per recent studies, it can be found that around 60.6% of total population in this world is active in at least one social media platform, which equates to around 4.88 billion people.
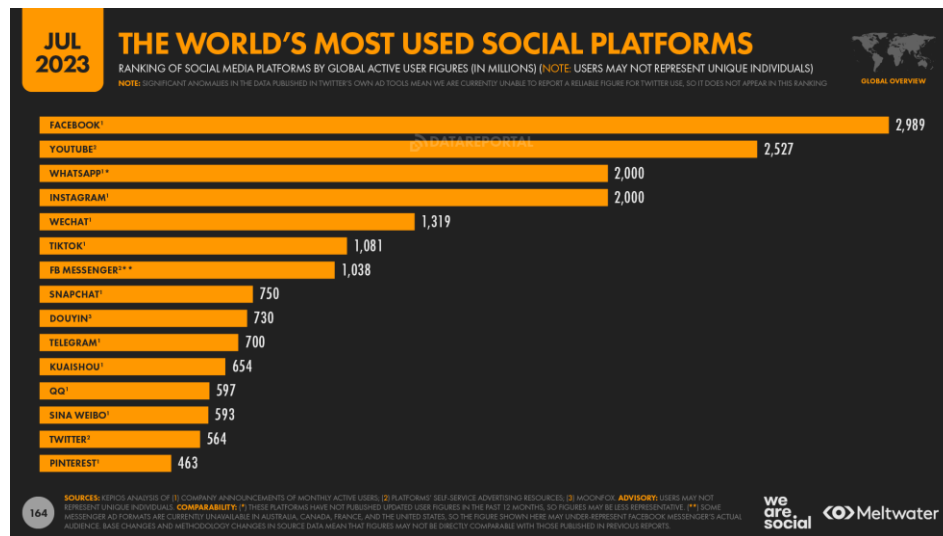
Careful preparation, implementation, and, most importantly, thorough analysis of a social media campaign's results is necessary for its success. In situations like this, data visualization is essential. With the use of potent tools like Tableau, we can convert complicated data sets into understandable, useful insights. We will be visualizing and evaluating different metrics involved during a campaign carried out by different companies over the course of 1 year.

CHAPTER ONE: Social Media Campaign

The social media campaigns are currently the most effective method used by almost all companies and firms to get good revenue income. The need should be that the revenue they are spending on creating and publishing ads should be much less than what they can get by the vast reach out of the campaigns/ads. In this dataset, currently, there are 5 different platforms.

Please refer the link for the dataset used:

https://docs.google.com/spreadsheets/d/1-9mZxjqQipImgnGP6yVQWX8QjpDr6sBqXxPXNRKYq7o/edit?usp=sharing

The table consists of columns which gives detailed info about the following.

- Number of clicks per campaign

- Campaign ID

- Cost of Acquisition in dollars

- Channel used

- Campaign type

- Location

- Language of ad-campaign

- Target Audience

- Customer Segment

- Date

- Conversion rate

- ROI

In addition to these we have created calculated fields for calculating cost per click, acquisition cost and the cost per million clicks. These are the parameters used to calculate the performance of social media campaigns.

We will be looking at a visual overview of these campaigns at first:
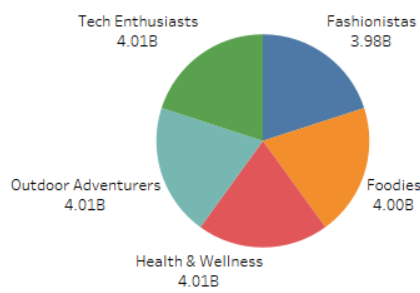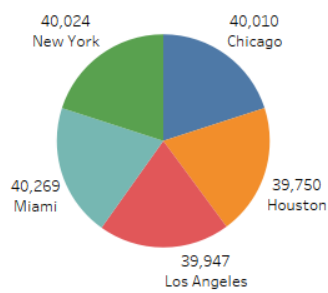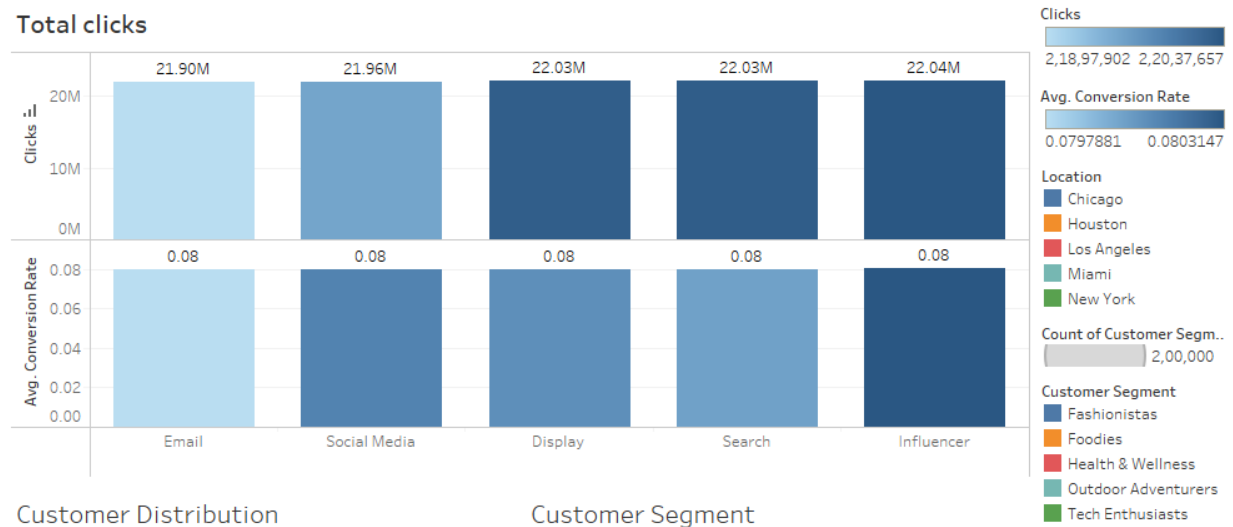
This dashboard shows an overview about the social media campaign in a quick glance. The customers are divided into five categories and the campaign was carried out at five locations. We can see that the greatest number of people involved in the campaign were from Miami, and the customer segment, which was involved the most was from Tech Enthusiasts, Outdoor Adventurers and from Health & Wellness background.

As we can see, from the bar graph at the top, the greatest number of clicks were received from influencers campaign for the firm over the whole course. Since conversion rate is the same for all the types of campaigns, the best type of campaign to pursue would be with the help of influencers.

Customer Segment

Target Audience	Fashionistas	Foodies	Health & Wellness	Outdoor Adventurers	Tech Enthusiasts
All Ages	0.080176	0.079942	0.080590	0.079271	0.079900
Men 18-24	0.080439	0.080560	0.079649	0.080284	0.080266
Men 25-34	0.079835	0.080504	0.080192	0.080461	0.079672
Women 25-...	0.078934	0.080070	0.080000	0.080665	0.079801
Women 35-...	0.079574	0.080216	0.079299	0.080207	0.081218

Language

Target Audience	English	French	German	Mandarin	Spanish
All Ages	0.080670	0.080391	0.079311	0.080498	0.079013
Men 18-24	0.080239	0.080673	0.080331	0.080282	0.079684
Men 25-34	0.080164	0.079966	0.080227	0.080111	0.080190
Women 25-...	0.079584	0.079636	0.080238	0.079637	0.080404
Women 35-...	0.080201	0.080601	0.079746	0.079643	0.080322

Clicks
4.30M — 4.48M
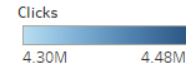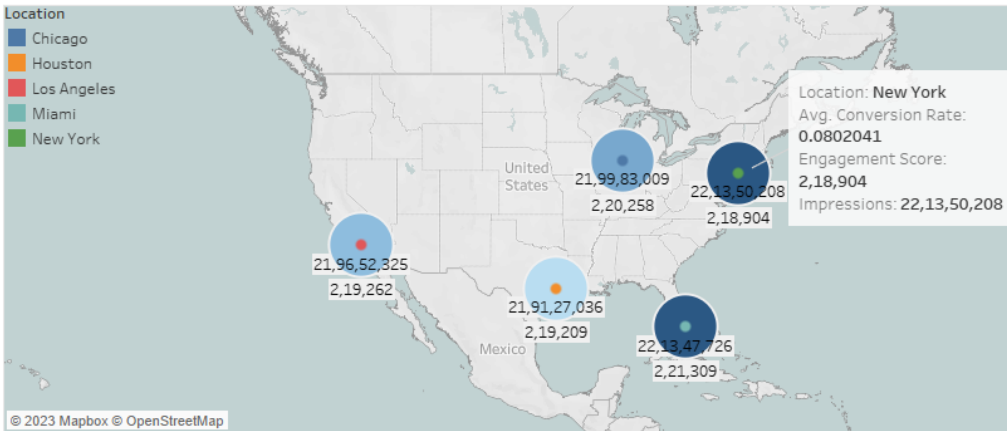
Target Age and Segment
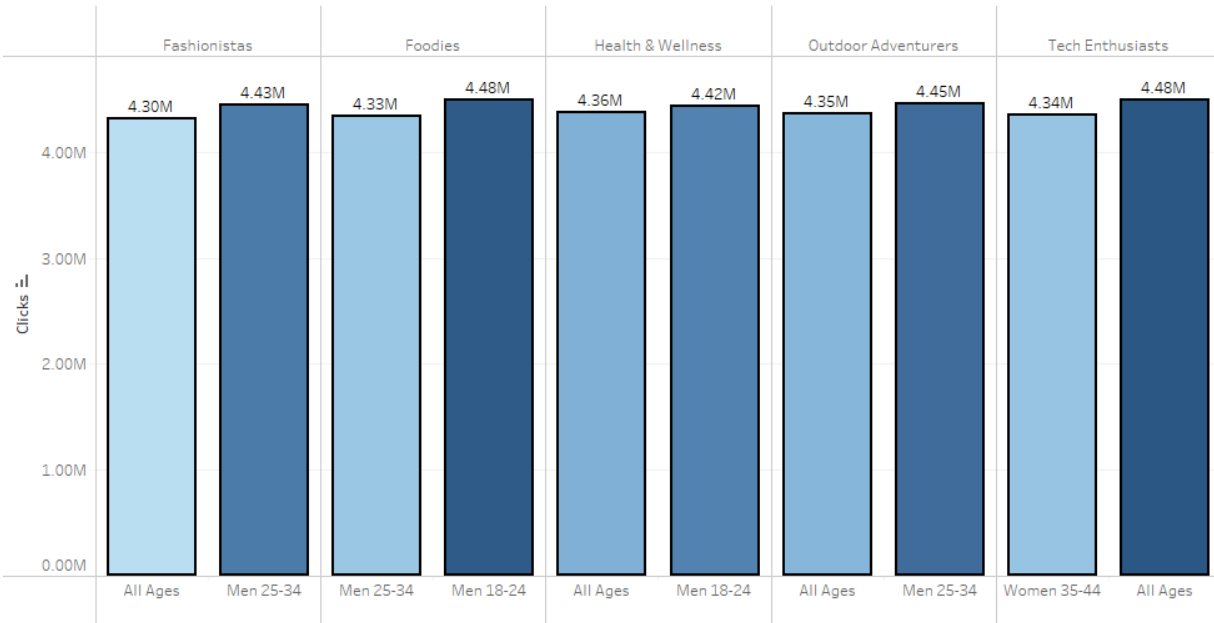
This dashboard gives an overview about the target audience and their interest towards the campaigns. The bar chart at the end shows the highest and lowest type of customer belonging to different audience group based on age. This gives an insight about which segment/target audience have given the most clicks and also about the conversion rate about them.

Now we, will inspect the maximum clicks, conversion rate, impression rate, and engagement based on location, customer segment and Target audience.

As we can see from the dashboard below, Foodies were the customers who had given most number of clicks and conversion. The most succesful campaign type was through use of influencer and the campaign language which had the most success was different when it came to different aspects. Surprisingly, the language Mandarian showed success compared to English and other languages which is native to the locations where the campaigns were held. We can also inpsect how these variables are distributed based on the location.

Location

Location
- Chicago
- Houston
- Los Angeles
- Miami
- New York

Location: **New York**
Avg. Conversion Rate:
0.0802041
Engagement Score:
2,18,904
Impressions: **22,13,50,208**

21,99,83,009
2,20,258

22,13,50,208
2,18,904

21,96,52,325
2,19,262

21,91,27,036
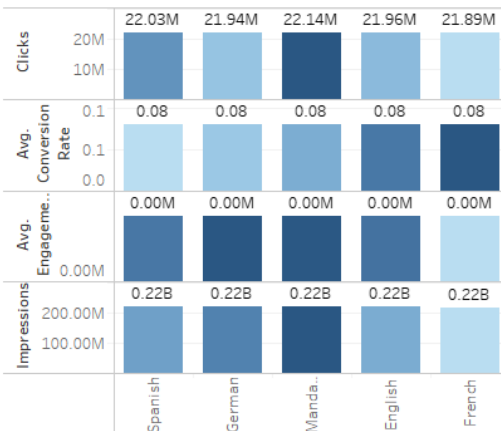2,19,209

22,13,47,726
2,21,309

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Customer Segment

	Foodies
Clicks	20M ... 10M ... 0M
Conversion Rate	3K ... 2K ... 1K ... 0K
Impressions	200M ... 100M ... 0M
Engagement Score	200K ... 100K ... 0K

Language

	Spanish	German	Manda..	English	French
Clicks	22.03M	21.94M	22.14M	21.96M	21.89M
Avg. Conversion Rate	0.08	0.08	0.08	0.08	0.08
Avg. Engageme..	0.00M	0.00M	0.00M	0.00M	0.00M
Impressions	0.22B	0.22B	0.22B	0.22B	0.22B

Campaign Type

Campaign Type

	Email	Search	Display	Social Me..	Influencer
Clicks	21.90M	22.03M	22.03M	21.96M	22.04M
Avg. Conversion..	0.08	0.08	0.08	0.08	0.08
Engagemen..	0.22M	0.22M	0.22M	0.22M	0.22M
Impressions	0.2B	0.2B	0.2B	0.2B	0.2B

Chapter Two: Evaluating the campaign

The campaign was conducted throughout the whole year. As we have visualized already, the campaign was conducted through various social media channels as well as through different campaigns towards different target audiences belonging to different age groups as well as different groups. We need to start evaluating different metrics so that we can evaluate the total performance of the social campaign.

- **Engagement Rate:** The percentage of your audience that engages with your content (via responses, comments, and shares) is known as the engagement rate.

- **Click through Rate:** The frequency of how much the audience clicks the link to go to another page, through our campaign link.

- **Conversion Rate:** The conversion rate gauges how frequently social media posts lead to conversion events like downloads, sales, or subscriptions. This is one of the most crucial social media marketing KPIs since it demonstrates the effectiveness of both sponsored and organic social media initiatives to fill your sales funnel.

- **Cost per Click (CPC):** The cost-per-click, or CPC, is the price you pay each time a user clicks on a social advertisement.

- **Cost per thousand impressions (CPM):** The term "cost per thousand impressions," or CPM, means precisely what it says. It is the price you spend for each 1,000 impressions of your social media advertisement.

We will be looking at all these parameters while evaluating the campaign conducted. In addition to this we need to evaluate another important parameter while calculating the performance.

Cost of Acquisition:

The overall amount a company incurs to bring on a new customer or buy an asset is known as the cost of acquisition.

- The sum of the costs spent when a company buys a new customer or an asset is known as the cost of acquisition.

- The cost of acquisition is a line item in accounting that comprises all costs associated with purchasing an asset.

- The whole cost of getting a new client is referred to as the cost of acquisition in sales and marketing.

We have columns available for engagement scores, impressions, and acquisition cost. There is a separate column with measures of ROI on each campaign value. We can use these measures to calculate the acquisition cost with various filters using the functions provided by Tableau.
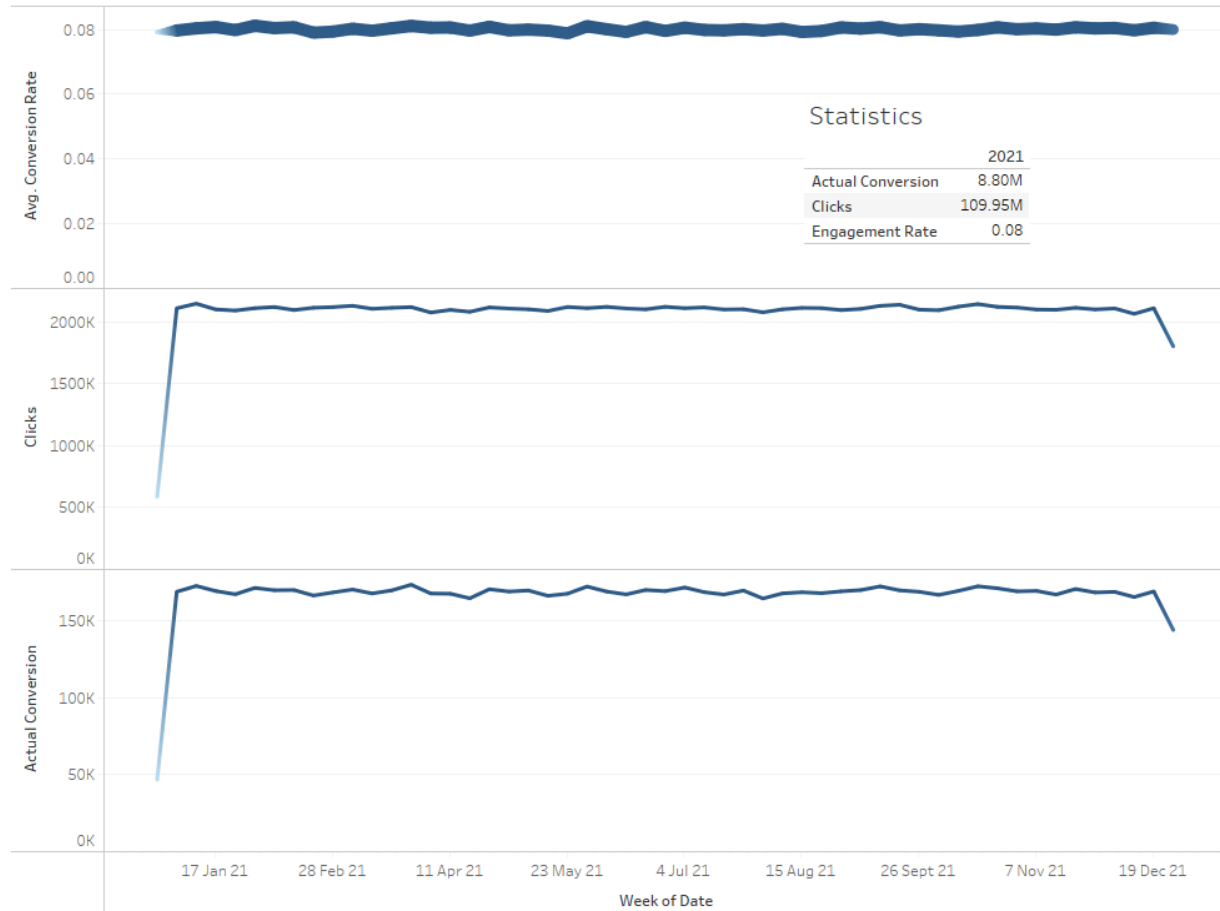

The attached dashboard shows detailed info about how the engagement has been split for the period of one year. The table within shows info about the overall engagement rate. As we can see, there has been more than 100 million clicks, only 8% of the total clicks have been converted, resulting in a total of 8.8 million conversions.

We can also find that the Clicks through rate has been consistent throughout the whole year averaging around 2 million per every week.

We can now find the cost per click metric to evaluate the total revenue income we have gained through each click by combining the number of clicks per day and ROI with the same. We then need to divide the same with the total number of audiences involved.

We can find the same with the help of the function called, calculated fields in Tableau, which will be demonstrated in the next chapter.

Clicks and Revenue with Clicks over Time

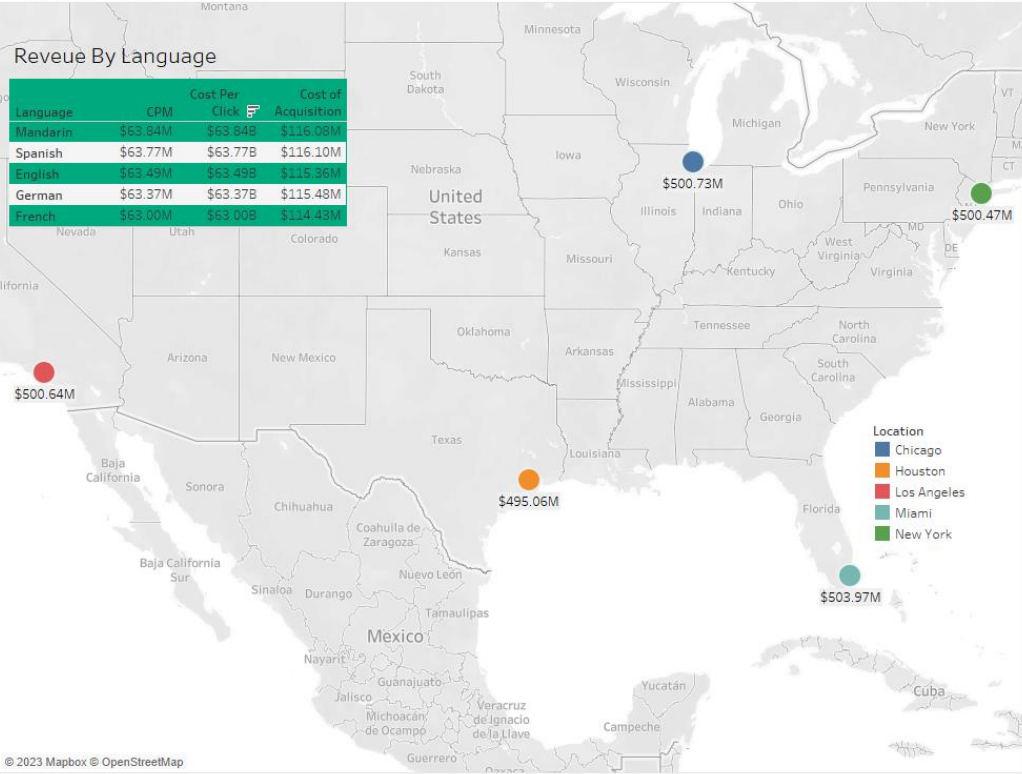| Click_Statistics		
	Date	
		2021
Clicks		109.95M
Cost Per Click		$317.46B
CPM		$317.46M
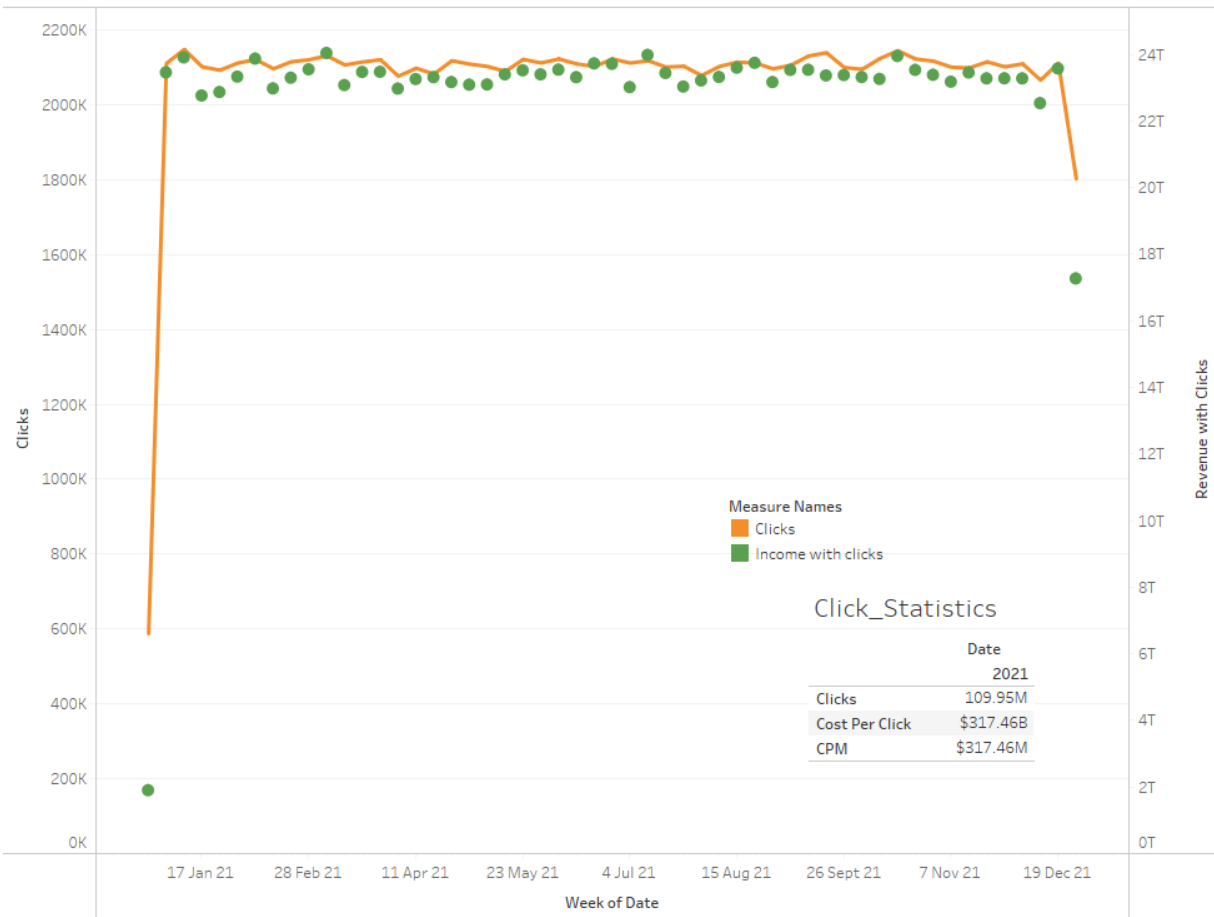
The above dashboard gives an overview about Statistics with respect to the clicks. The marketing team has aquired a total of $317.46 billion from each audience as the factor is calculated as clicks times the cost of acquisition by the total number of people participated. We have also calculated Clicks per million impressions, which is $317.46 million.
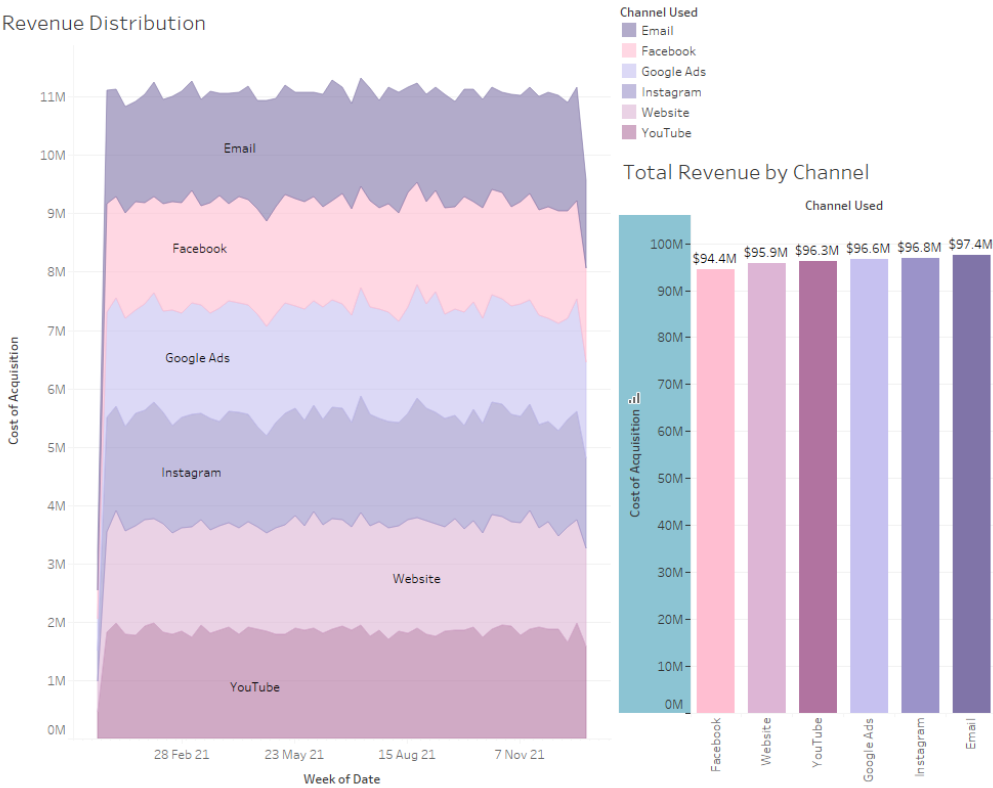
We can evaluate the distribution of the revenue with respect to the language and region, which can give us an overview on what and where to concentrate next. In the below dashboard, it is clear eventhough, the distribution is almost the same, but since the values are in the range of billions, a small change means a lot of difference in the profits. The language mandarin has provided the highest revenue income, which is a topic to be analyzed on, but we will need a new data and survey to get results for the reason. As of now, we can only confirm that we need to give more importance to the Mandarin as well as to location Miami.

Refer the dashboard below for more insights on the discussions mentioned here.

Revenue

Reveue By Language

Language	CPM	Cost Per Click	Cost of Acquisition
Mandarin	$63.84M	$63.84B	$116.08M
Spanish	$63.77M	$63.77B	$116.10M
English	$63.49M	$63.49B	$115.36M
German	$63.37M	$63.37B	$115.48M
French	$63.00M	$63.00B	$114.43M

Location:
- Chicago — $500.73M
- Houston — $495.06M
- Los Angeles — $500.64M
- Miami — $503.97M
- New York — $500.47M

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Revenue Distribution

Channel Used:
- Email
- Facebook
- Google Ads
- Instagram
- Website
- YouTube

Total Revenue by Channel

Channel Used

Facebook	Website	YouTube	Google Ads	Instagram	Email
$94.4M	$95.9M	$96.3M	$96.6M	$96.8M	$97.4M

Email has contributed towards the most cost of acquisition for the campaign followed by Instagram. The difference is subtle when taking different channels into consideration. We can conclude that every channel was a success, contributing almost equally towards the complete revenue.
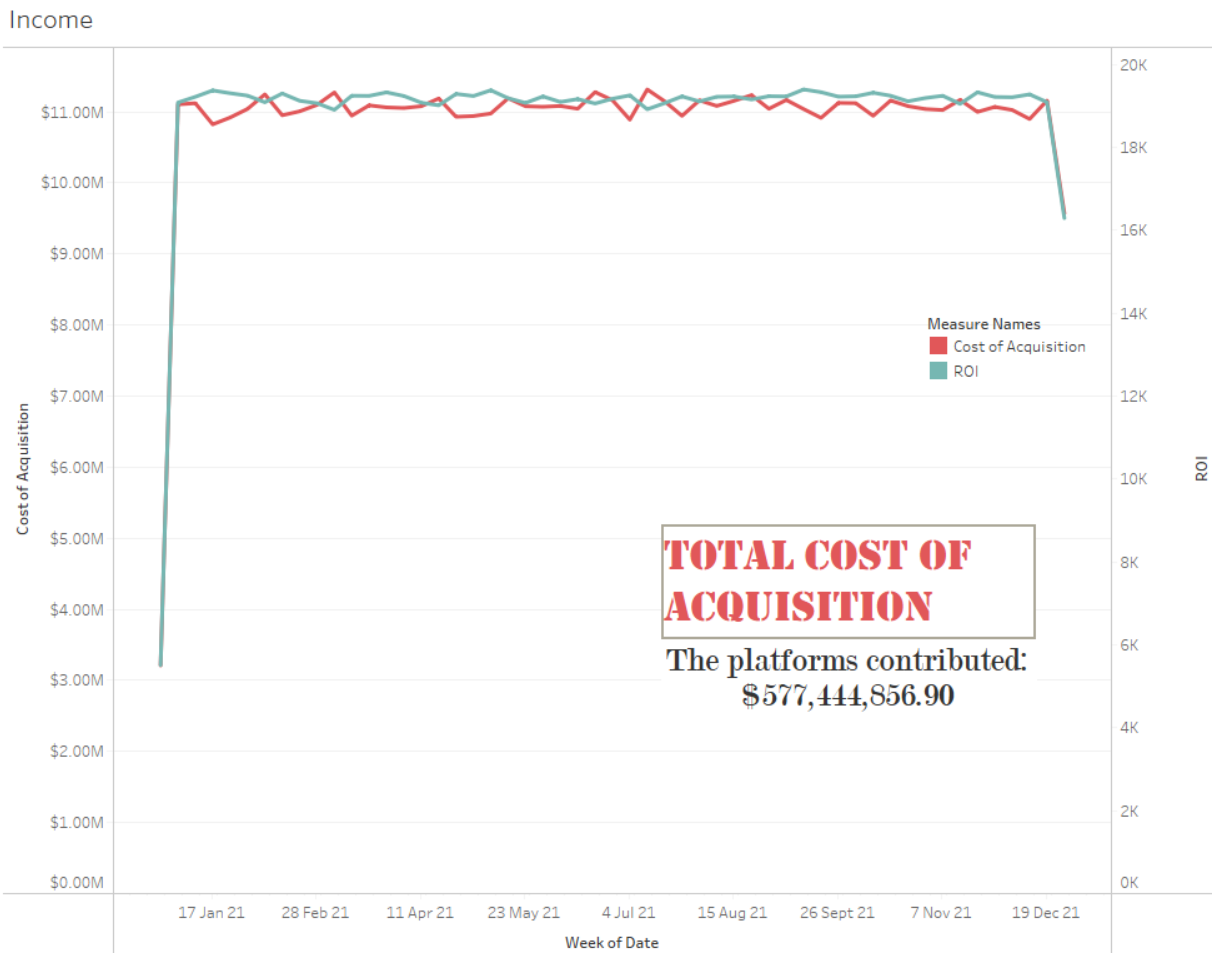
As we can see from the final dashboard, a total of $577 Million has been received as income due to the social campaign that we have evaluated.

With the current Analysis, we have found that our main customers belong to the group of Tech Enthusiasts. Most of our customers belong to the location Miami. We were able to measure success of our platform campaign using all the details. If we had more data, it would have made it easier to analyze how and why we are not receiving the required response.

Chapter Three: The story of the campaign

With all the analysis that we have conducted, we can now formulate a story with the help of all the dashboards that we have created and using the metrics we have calculated to find out more to track the performance of the campaign.

The firms wanted to increase their ad revenue using campaigns during the period for the year 2021. Plans were created to proceed with the campaigning using different channels and different social media. They selected 5 campaign types which were email, search, social media, influencer, and display ads. In social media, they had selected 5 different platforms which were Instagram, Facebook, Google Ads, YouTube, Email, and their websites respectively. The campaign received massive support from all the customer portfolios as well as different classifications of age. This firms had conducted this campaign at five locations: New York, Miami, Houston, Chicago, and Los Angeles.

The campaign had an overall conversion rate of 0.08 throughout the whole year. This value remained almost a constant throughout the whole campaign. This cannot be called as a successful campaign as out of 100 only 8 were converted. There should have been better methods taken and more reach out for the campaign to audiences to whom this will have had better results. As we saw, each group of audience have been distributed in an equal manner. It would be wise to concentrate better on maybe 2 types of audiences and increase the overall conversion rate by maximizing the profit through campaign and giving the same importance to rest of the groups, so that the whole profit will grow.

The locations that were considered will also play a crucial role as many factors can be included while selecting the location for the ad campaign. These factors may be ease of transportation of product or better customer understanding and satisfaction for the firm. This will also mean that they can better change their products to suit to these locations. We have also found that in every location, the conversion rate was 0.08, which means it would be wise to select few locations and try to increase the ad revenue from the specific locations. This will give profit for the firm by not having to invest more at different locations, rather can invest little and concentrate on less places and to increase in concentrating more on specific customer types and audience groups.

The campaign has been effective in producing a total output of $577 Million throughout the whole year, with an average of $1.5 Million each day. This output has been with only a 0.08 conversion rate on average. This could be increased throughout the next years with the help of better strategical analysis and planning. The clicks throughout have seen better results, but the clicks had low conversion rate. A better analysis and better ads and other developments in the product phase could help in better conversion. There can be better modes of representation as well as better ad publishments, so that we can achieve a better conversion rate.

As we have observed when it came to the ad language sector, more people from Mandarin background have been involved in contributing more revenue. This can be taken into consideration while planning for future as to increase the reach towards these segments of people.

The trend lines suggests that this strategy is effective moving forward with helping in yielding similar results for the coming year.

Conclusion

We have been able to evaluate a social media campaign which was carried out at different levels and different platforms. We learned about the different metrics that is involved during the evaluation of a social media campaign as well as calculated the same for the dataset which we used. These values gave insights to track the performance of the campaign as well as better decide on which type of campaign to better focus on for the next time and what type of customers contribute more towards the revenue. Also, gave us insights on which location/language to focus on during the campaign.

We have used Tableau for creating effective dashboards and visualizing different aspects for calculating and analyzing the social campaign and performance in a better way. This gives us more insight towards the capabilities of Tableau as well towards better analyzing thinking and strategy planning capabilities throughout.

In conclusion, the social media campaigning is currently one of the best-known marketing strategies which is being taken up by every field and sector in helping them increase the number of customers with customer acquisition.

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