



**BERLIN SCHOOL OF  
BUSINESS & INNOVATION**

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

**Programme title: MSc Data analytics**

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**Year: 2023**

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## INTRODUCTION

Social media has become an integral part of modern society, with billions of users and endless streams of data. As businesses seek to harness the power of social media for their advantage, effective data analytics becomes crucial. This is where Tableau comes in - a user-friendly platform that allows for efficient visualization and analysis of social media data. By utilizing its various features, such as dashboards, businesses can consolidate multiple metrics and sources into one location, gaining valuable insights to inform decision-making processes. In this assignment, we will delve deeper into the benefits of designing a Tableau dashboard specifically for social media data analytics.

The objective of this task is to utilize a collection of data related to the marketing campaign of our organization, Datatec innovations. Our company offers various services such as IT support, consulting, and web development. To effectively promote our brand, we employ multiple social media platforms. The primary goal is to construct a comprehensive dashboard using tableau that portrays various charts and evaluates performance metrics. Subsequently, we will analyze the collected data utilizing the constructed dashboard and present its findings through interactive visualizations in tableau.

## CHAPTER ONE: THE FUNDAMENTALS OF SOCIAL MEDIA DATA ANALYTICS

In the contemporary era of technology, social media has become an essential component of our everyday existence. When we browse through our online feeds and engage with others digitally, we consistently generate a stream of information. This information holds immense significance for commercial enterprises and institutions as it offers valuable understanding into the behavior and inclinations of consumers. Nevertheless, the compilation of data from social media also gives rise to apprehensions about privacy and ethical deliberations.

### **About the dataset used:**

The dataset we will be using offers valuable information on the efficiency of different marketing campaigns. This dataset includes data on the metrics, target audience, duration, channels utilized, and other important factors that impact the success of marketing efforts. Spanning one year and consisting of 10000 distinct rows of data, this dataset provides a comprehensive overview of campaign performance across various social media channels and customer segments.

### **Columns:**

- *Campaign\_Type*: The method employed to carry out the campaign, comprising email, social media, influencers, display ads, or search engine optimization.
- *Target\_Audience*: The specific portion of the population aimed at by the campaign, such as women aged 25-34, men aged 18-24, or various age groups.
- *Duration*: The length of time that spanned the course of the campaign in days.
- *Channel\_Used*: The means employed to disseminate and promote the campaign content, which may include email platforms, social media networks, YouTube channels, websites, or Google Ads.
- *Conversion\_Rate*: The proportion of leads or impressions that translated into desired actions as an indicator of campaign efficacy.

- *Customer\_Acquisition\_Cost (CAC)*: The financial expenditure incurred by the organization to gain new customers presented in monetary terms.
- *Return on Investment (ROI)*: A measurement signifying both profitability and success achieved through the promotional endeavor.
- *Location*: The specific area where the campaign took place involving major metropolitan cities like New York City, Los Angeles, Chicago, Houston, or Miami.
- *Language*: The language utilized in the campaign communication, including but not limited to English, Spanish, French, German, or Mandarin.
- *Clicks*: The quantity of clicks generated by the campaign, indicating user involvement.
- *Impressions*: The overall number of times the campaign was exhibited or seen by the intended audience.
- *Engagement\_Score*: A rating ranging from 1 to 10 that determines the level of involvement generated by the campaign.
- *Customer\_Segment*: The specific customer segment or category that the campaign was customized for, such as tech enthusiasts, fashionistas, health and wellness enthusiasts, foodies, or outdoor adventurers.
- *Date*: The date on which the campaign occurred, supplying a chronological perspective for analyzing trends and patterns.

### **Understanding the social media metrics in the dataset:**

**Impressions** denotes the cumulative count of instances where a piece of content, such as a post or advertisement, is presented on a user's screen, regardless of whether it was clicked or not. This quantifies the potential audience reach of your content.

**The conversion rate** is a metric that gauges the proportion of individuals who have successfully accomplished a desired objective, such as completing a purchase or filling out a form, following their interaction with your content. It can be determined by dividing the number of conversions by the number of clicks and multiplying this value by 100.

**The Customer Acquisition Cost (CAC)** refers to the overall expenses a company bears in order to obtain a fresh customer. This encompasses all the costs associated with advertising, marketing, sales, and other initiatives intended to entice and transform potential leads into paying customers.

The CAC is a pivotal measurement for evaluating a business's growth strategies in terms of effectiveness and long-term viability. A diminished CAC signifies that a business is acquiring customers with optimal cost-efficiency, whereas an elevated CAC might imply inefficiencies or the necessity to enhance marketing and sales endeavors

**Clicks** are a significant metric for measuring engagement, particularly in the realm of online advertising. They serve as an indication that users possess sufficient interest to actively engage, such as by visiting a website, seeking further information about a product, or subscribing to a newsletter. Clicks provide businesses with valuable insights into the success of their marketing campaigns and the impact of their ad content.

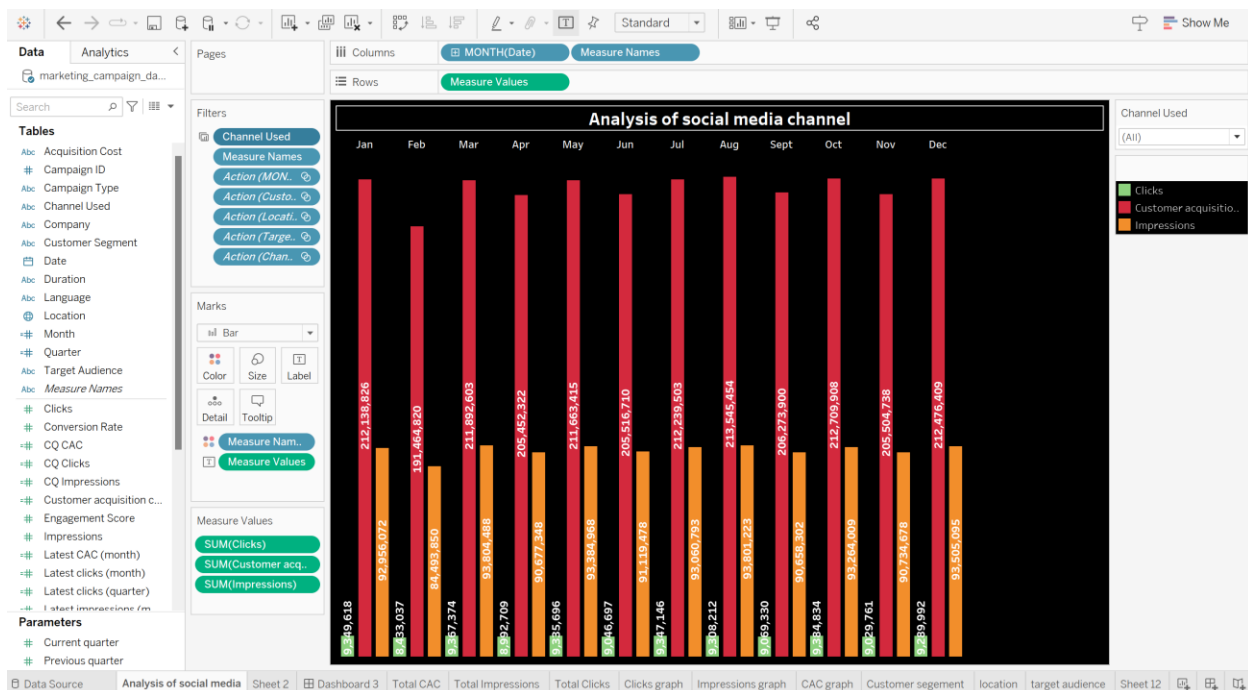
## CHAPTER TWO: VISUALIZING CHARTS AND BUILDING A DASHBOARD USING TABLEAU FEATURES

Once the dataset has been linked to Tableau, we can commence the construction of our charts, which will later be integrated into the dashboard.

### Side by side bar chart:

It is useful to generate a bar chart that presents the combined data on clicks, impressions, and customer acquisition costs. This chart should also be organized according to the month and filtered by the specific social media channels utilized, which may include Instagram, Facebook, email, YouTube, Google Ads, or the website.

To create a suitable chart in Tableau, you will need to select the desired chart type from the 'Show me' feature. Additionally, arrange the month of year and measure names (such as total clicks, impressions, and CAC) in the columns section, while placing the measure values in rows.



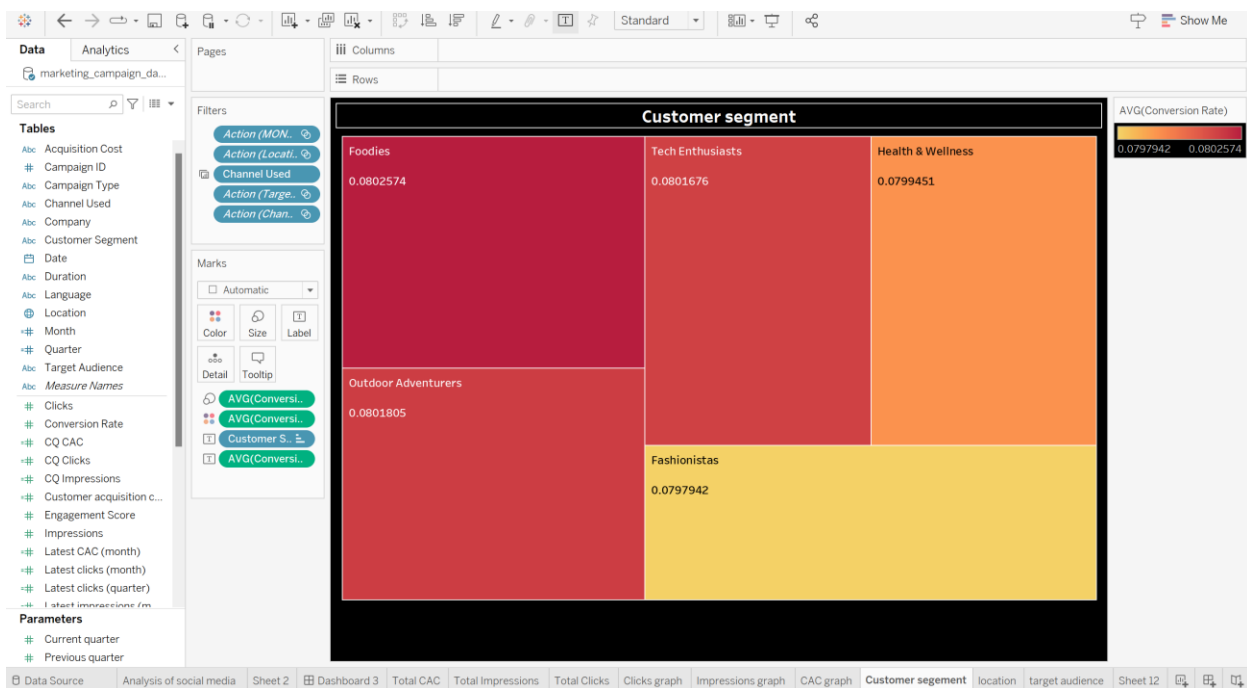
This chart has the capability to assess various social media platforms utilized in the campaign and is capable of monitoring the monthly progress of each channel.



## Treemap:

A treemap presents information in the form of interconnected rectangles, wherein each larger rectangle is subdivided into smaller rectangles to denote varying levels or categories of data. A treemap is generated to represent the conversion rate, focusing on the specific customer segment being targeted.

The reason for using the average conversion rate in this case is because it represents a proportional value, and the customer segment is also taken into consideration. The size of each rectangle in the treemap is determined by the average conversion rate, and the color grading of the rectangles is also based on this average value.

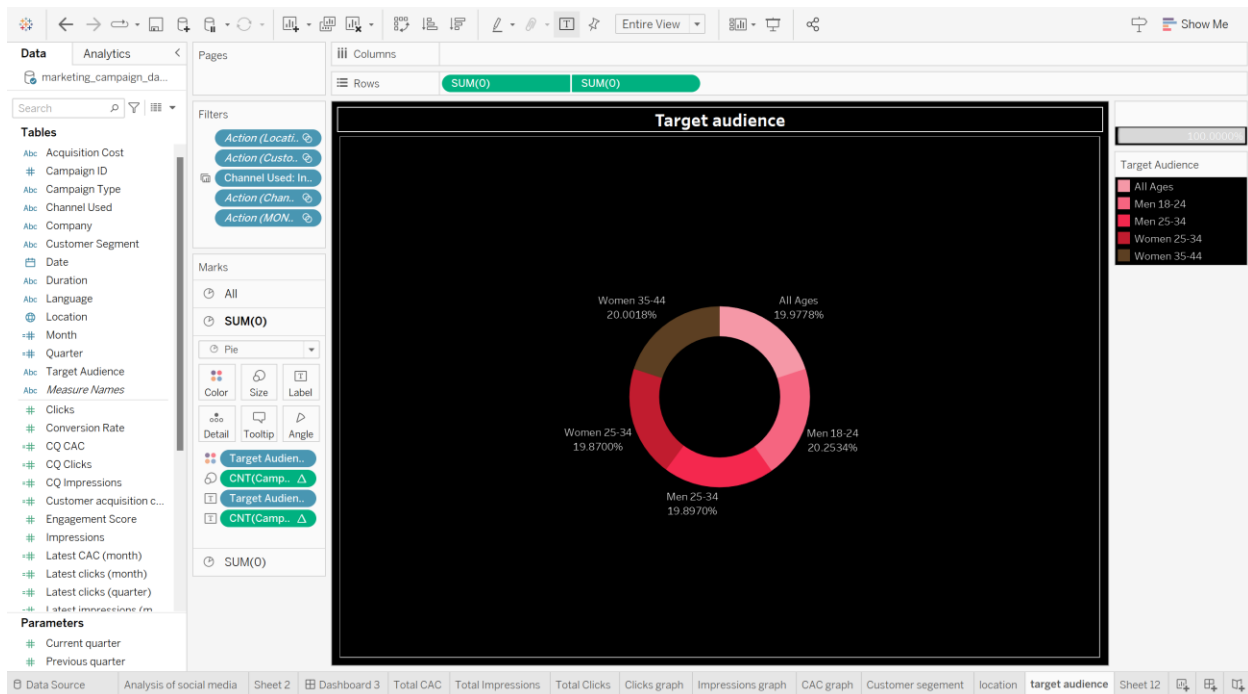


The chart provides an illustration of the customer demographic being focused on in the advertising campaign and the overall quantity of customers that have been successfully converted, which refers to those who have signed up or made a purchase after interacting with our advertisement.

## Donut chart:

This is merely a circular graph in the form of a donut. This visual representation can be employed to depict data by utilizing the measurements within the circle.

The target demographic for the campaign consists of both males and females within a specific age range. To create the visualization, select the campaign ID variable and assign it to the size parameter under mark. Assign the target audience variable to colors, and choose a pie chart as the graphical representation. By duplicating the pie chart and creating a dual axis, a donut chart can be obtained. Apply a quick table calculation to label each segment with its corresponding percentage of the total in the chart.



This chart can be utilized to visually represent the specific age demographic being targeted and the corresponding proportion of total engagement resulting from social media campaigning.

### Displaying values in dashboard:

It is necessary to present the overall quantity of clicks, impressions, and customer acquisition cost after applying a filter based on the quarter of the year. Initially, we must extract the quarter of the year from the date column. To accomplish this task, a calculated field called 'Quarter' should be created as follows:

×

---

DATEPART ('quarter', [Date])

Two parameters must now be generated to access the values of the present and preceding quarters. Accumulate data from the quarter that was calculated. The parameter for the current quarter can be created as follows:

Edit Parameter [Current quarter]

Name

Current quarter

Properties

Data type

Integer

Display format

4

Current value

4

Value when workbook opens

Current value

Allowable values

☐ All
☒ List
☐ Range

Value	Display As
1	1
2	2
3	3
4	4
Click to add	

☒ Fixed
☐ When workbook opens

Add values from

Remove Selected

Cancel

OK

Similarly, a parameter is created for the previous quarter.

To effectively utilize these parameters, it is imperative to generate calculated fields for the click count, impression count, and CAC values of both the present and previous quarter.

The current quarter total number of clicks calculated field can be created as;

CQ Clicks

×

SUM( IF
[Quarter]=[Current quarter]
THEN
[Clicks] END)

◀

Similarly generate these calculated fields for CAC and impressions values. Both for current and previous quarters.

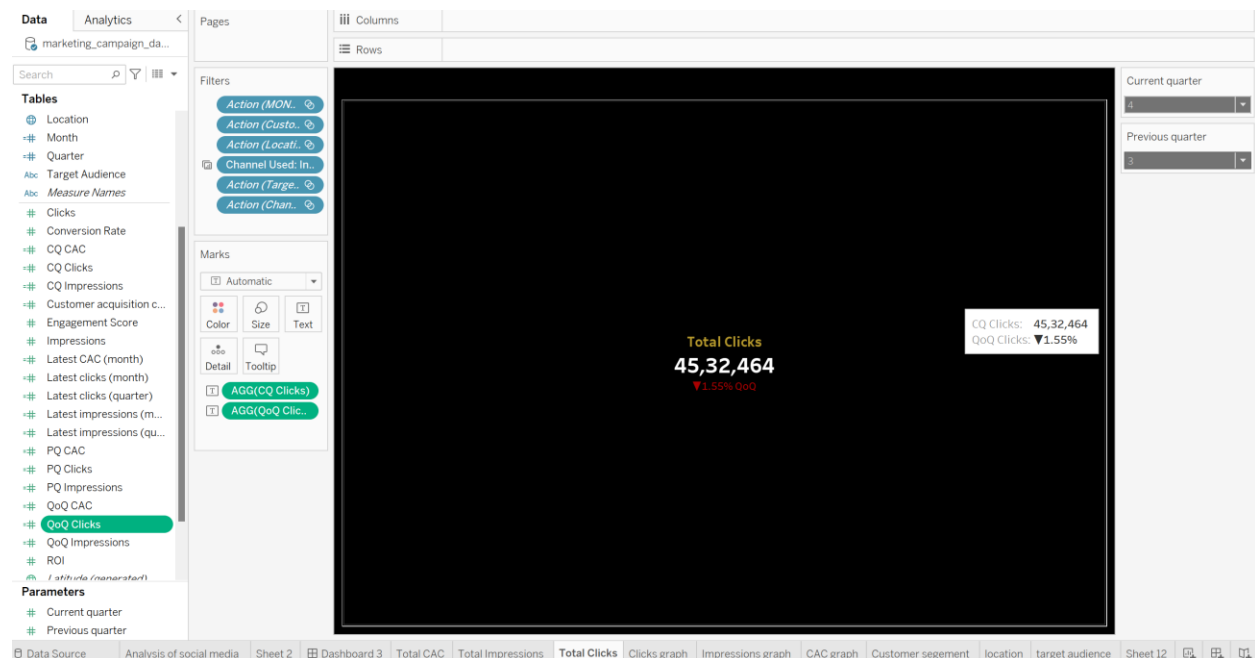
Once these values have been obtained, we can calculate the fluctuation in these values by utilizing the quarter-on-quarter (QoQ) change. This refers to the percentage difference between the current value and that of the previous quarter.

The calculated field for the QoQ change for 'clicks' can be created as;

QoQ Clicks

$$([CQ \text{ Clicks}] - [PQ \text{ Clicks}]) / [PQ \text{ Clicks}]$$

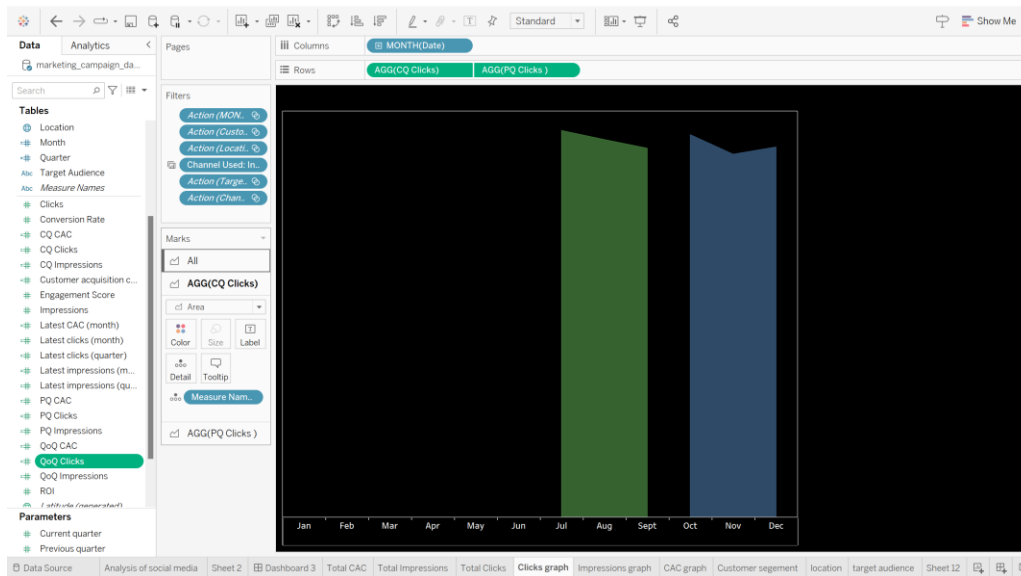
Now changing the number format from the QoQ calculated fields, we can represent this in percentage value.



Repeat these steps for 'total impressions' and 'total customer acquisition cost'.

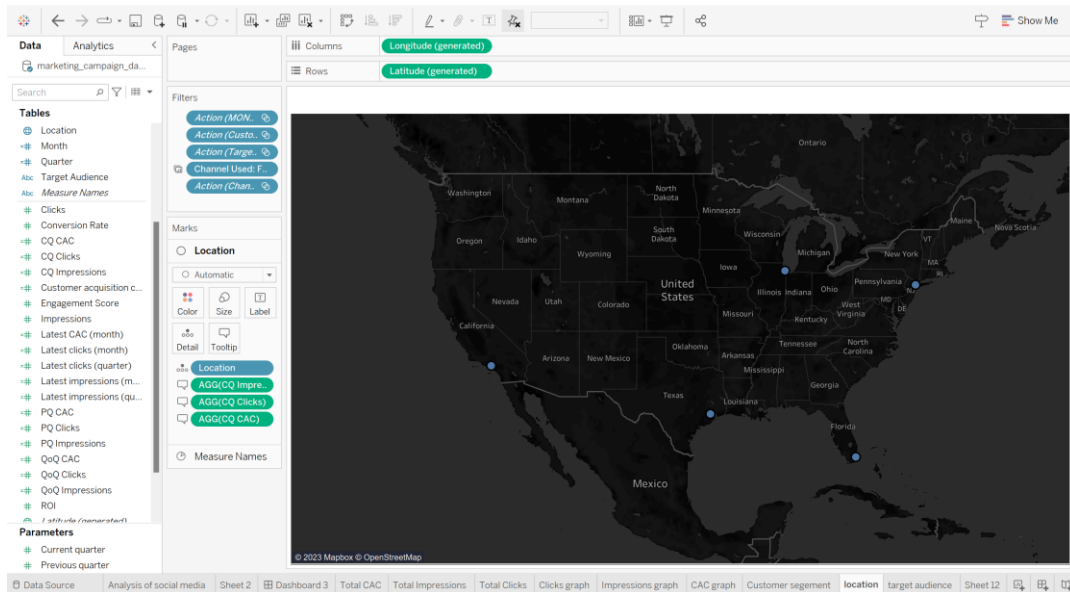
## Area chart:

An area chart is utilized, with shading beneath the line to indicate the region. This type of chart is employed to compare total values in specific quarters. To generate it, organize data by month and choose a dual axis for current and previous quarter values. Consequently, an area chart depicting the total number of clicks can be produced as;



## Geographical map:

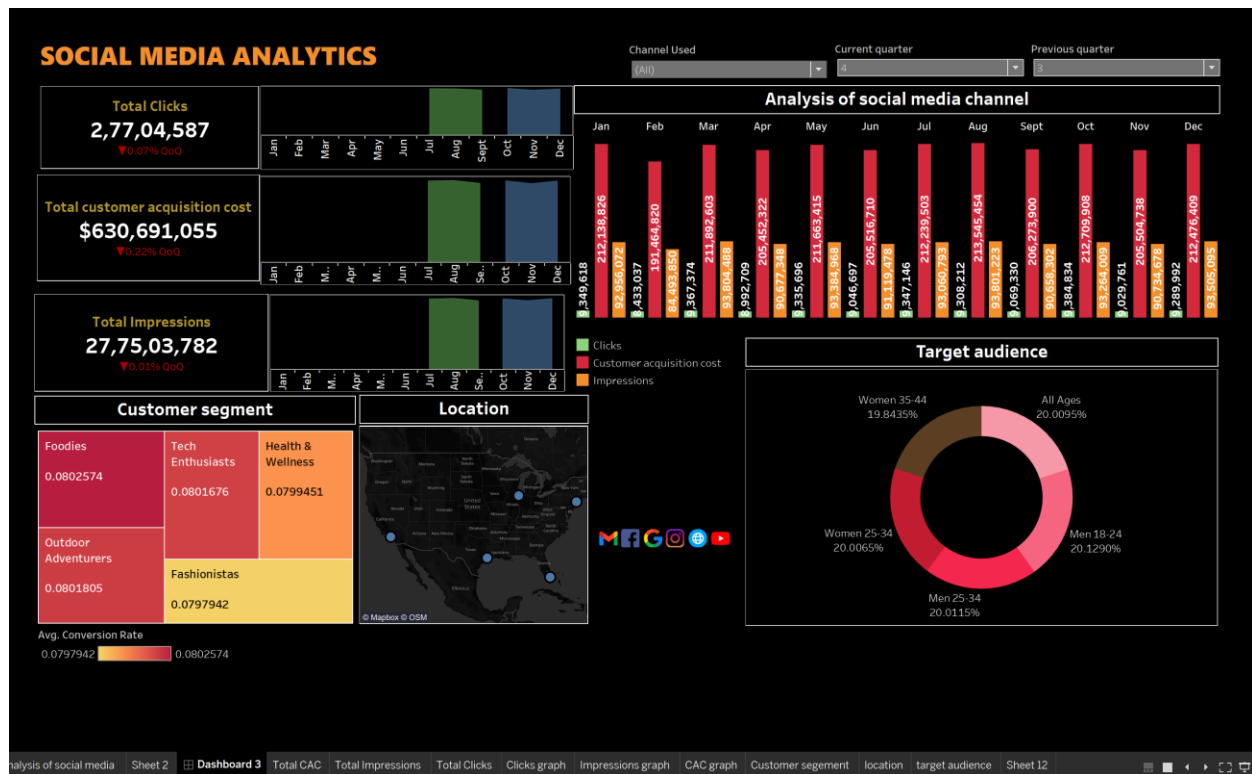
The location for the campaign has been identified and we can utilize this map to filter the data accordingly. We can determine the latitude and longitude based on the designated place, and then arrange them in rows and columns. From the chart options, choose "map" to generate the desired visual representation.



## Building the dashboard and applying actions:

The 'Channel used' functions as a filter that can be implemented to all other sheets within the tableau dashboard. By creating actions from this sheet, data from another sheet can be selectively filtered. The dashboard has the capability to display parameters for both the current and previous quarters. Additionally, social media icons can be incorporated into a sheet through the use of shapes available under marks in tableau.

The filter can also be utilized within the dashboard to enhance the clarity and comprehensibility of the data. After editing the tiles, colors, objects and arranging the sheets we get the interactive dashboard for our analytics as;


Analysis of social media
Sheet 2
**Dashboard 3**
Total CAC
Total Impressions
Total Clicks
Clicks graph
Impressions graph
CAC graph
Customer segment
location
target audience
Sheet 12

In the above Dashboard we can filter the data based on our need which can be based on location, customer segment or target audience.

## CHAPTER THREE: VISUAL STORYTELLING USING DASHBOARD AND ANALYSIS REPORTS

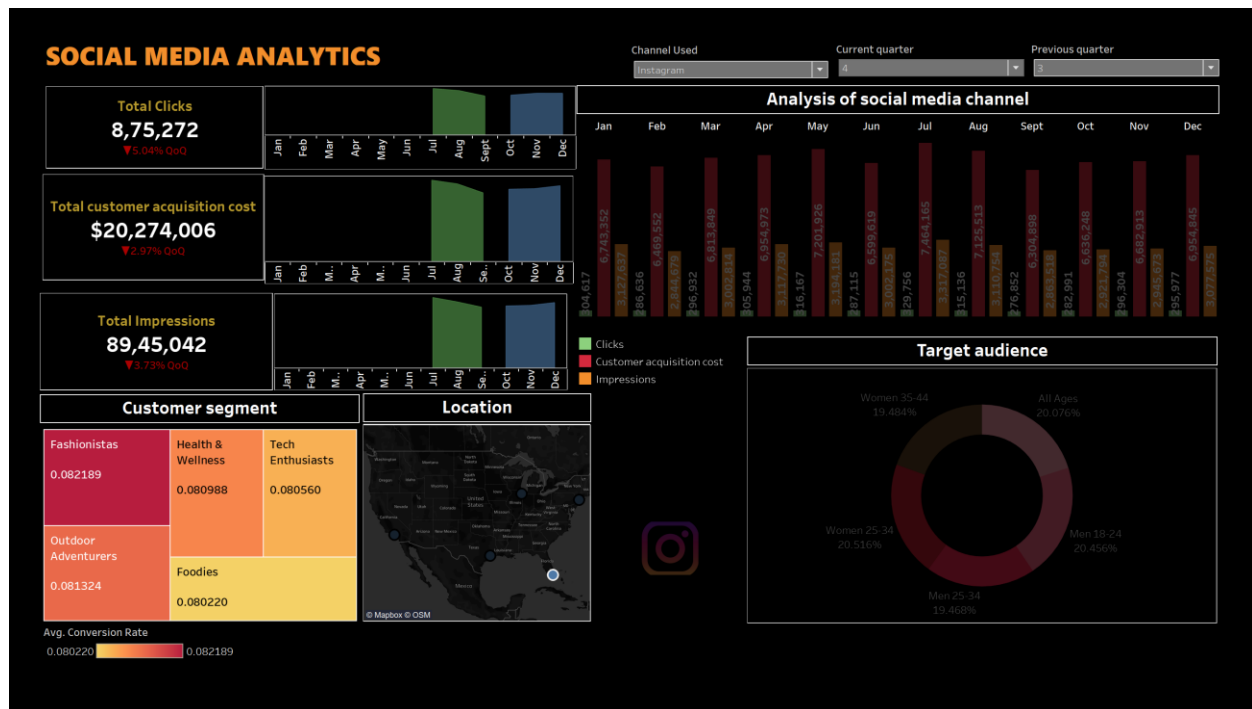
Our organization, Datatec Innovations, offers a range of services including website development, IT assistance, and consultation. It is imperative for us to attract new customers in order to enhance our company's profitability and retain our existing clientele. In the current digital age, it has become convenient to acquire more customers through social media platforms. To effectively achieve this goal, we should showcase advertisements that highlight our offered products as well as any discounted prices available upon signing up. Visual presentation of these advertisements can be achieved by utilizing channels such as Instagram, Facebook, and YouTube.

The extent of our marketing messages' exposure can be assessed by the overall number of times they are viewed. The individuals who have interacted with our ads can be identified by tallying up the total number of clicks. The customer acquisition cost (CAC) represents the amount we invest in acquiring customers through our promotional efforts.

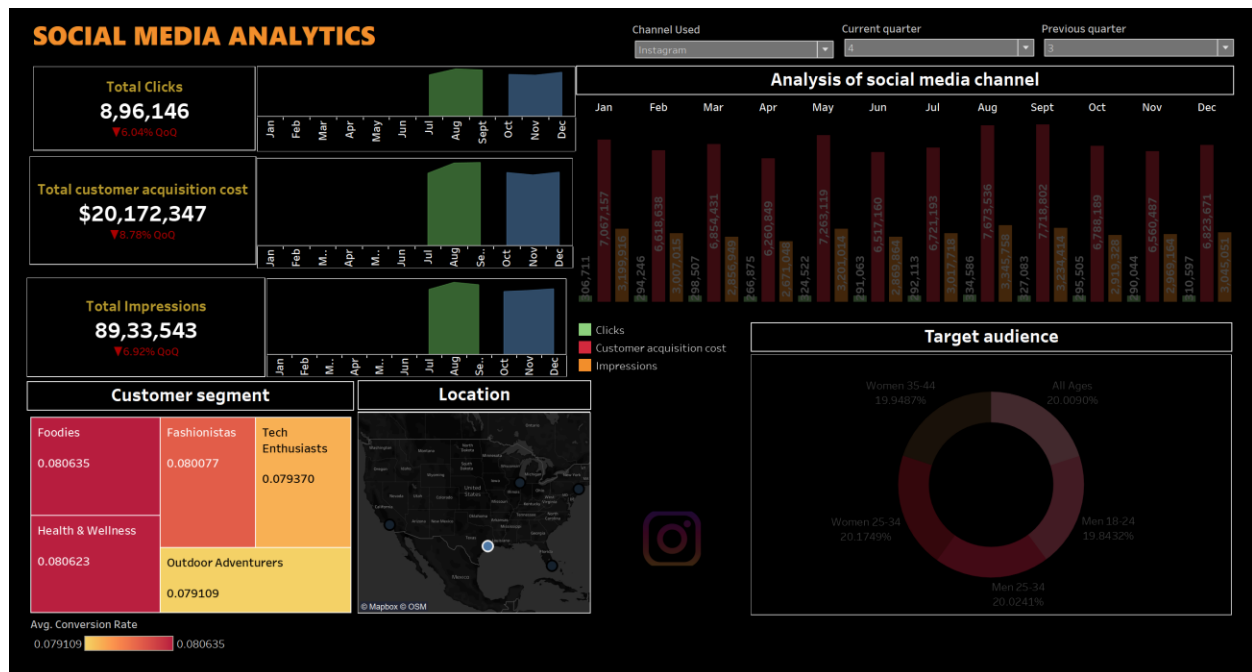
Suppose we must analyze the social media platform Instagram. To do so, we should select Instagram as the designated filter, which will prompt changes in all relevant values. If we desire further filtering based on location, we can select the specific place to refine our analysis. By doing this, we can examine the customer segment that has demonstrated the highest conversion rates evident in the charts.

The dashboard can be viewed as;



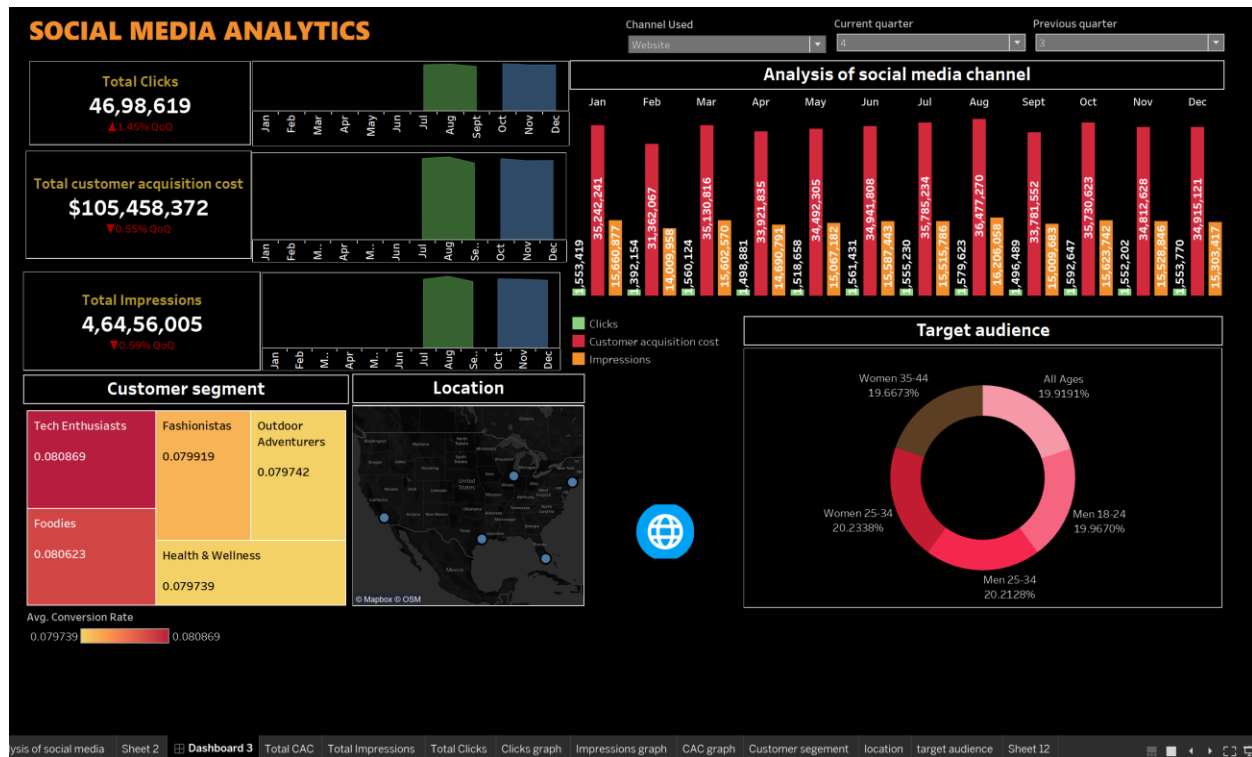


The total number of clicks received in the fourth quarter for the Instagram channel in Miami is 8,75,272. Likewise, we can obtain the customer acquisition cost (CAC) and impressions. Additionally, it is evident that the 'Fashionistas' customer segment exhibits a high conversion rate. It should be noted that if we choose a different location, all values will vary.



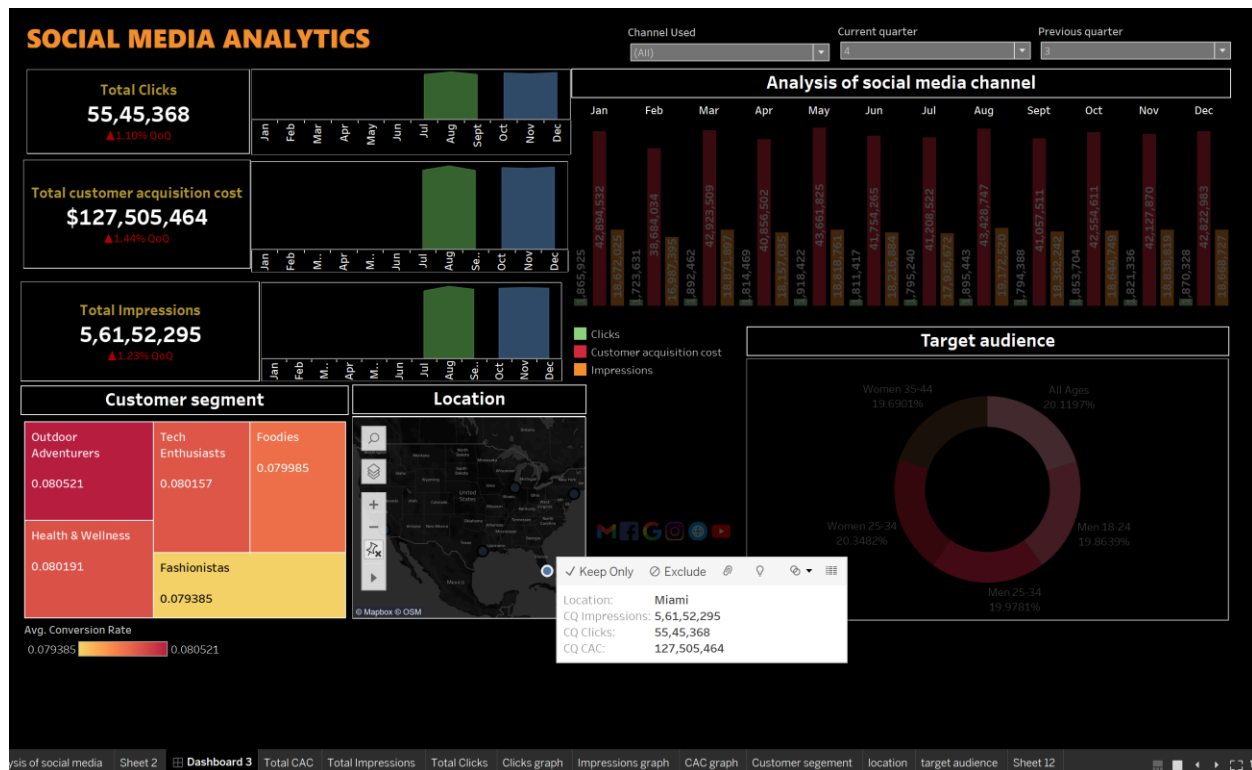
Now the place Houston is selected and we get that the customer segment with high average conversion rate is 'Foodies'. Also, other values are changed.

After filtering out different social media channels, we get the channel with a greater number of clicks as;



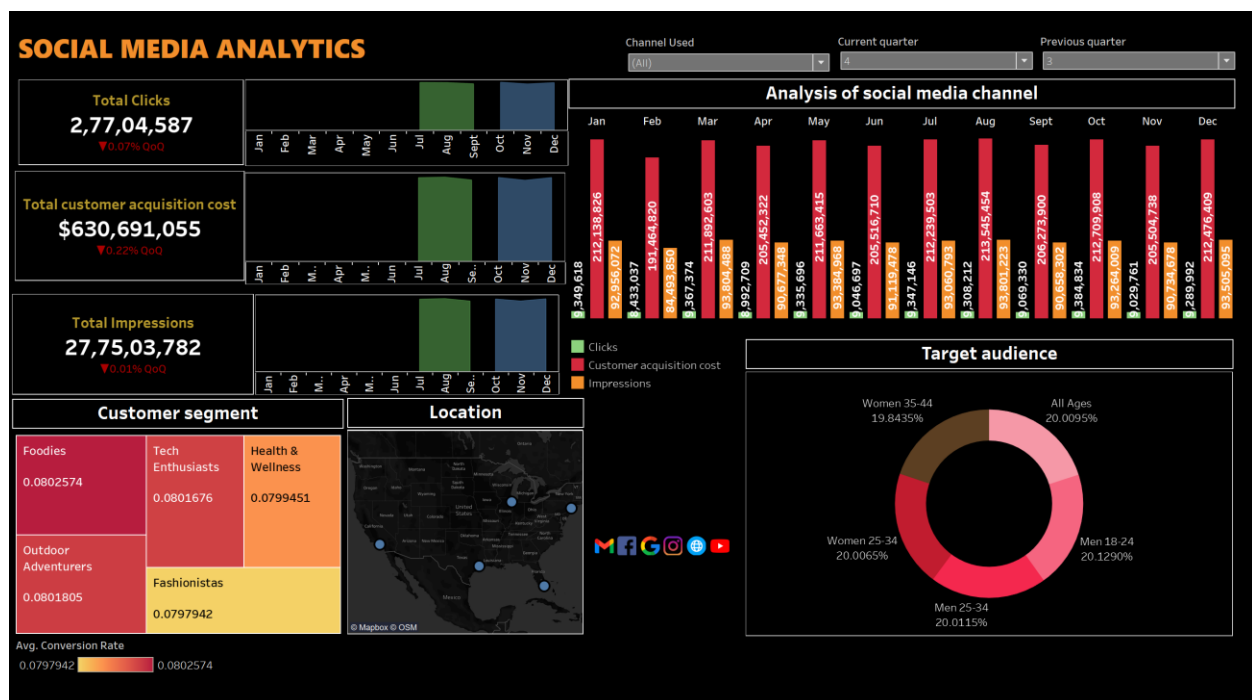
Based on the information we have; it can be deduced that the advertisement featured on the website experienced a significant increase in clicks during the most recent quarter of the year. Furthermore, it was observed that tech enthusiasts exhibited a higher rate of conversion compared to those interested in Health & Wellness. In terms of target audience, this particular channel tends to attract a larger proportion of individuals aged 25-34, both male and female.

We can also get the location that has least number of total clicks in the latest quarter by selecting different locations and analysing it. The dashboard can be viewed as;



So the least total clicks is from the place Miami and it should be focused more in the campaign.

### Overall findings:



- The overall number of clicks, the total cost to acquire customers, and the total impressions have all decreased by 0.07%, 0.22%, and 0.01% respectively in comparison to the previous quarter.
- The 'Foodies' customer segment demonstrates a high conversion rate, while the 'Fashionistas' have the lowest conversion rate. Therefore, it is recommended that the advertisement allocate more attention towards the 'Fashionistas'.
- The campaign has placed a stronger emphasis on appealing to men between the ages of 25 and 34, while women between the ages of 35 and 44 have received less attention.

## CONCLUDING REMARKS

Ultimately, the Social Media Analytics Dashboard developed in Tableau for this task functions as an effective instrument for assessing the effectiveness of our social media campaigns and implementing data-driven strategies. With specific emphasis on Clicks, Impressions, and Customer Acquisition Cost (CAC), this dashboard provides a comprehensive perspective on our social media marketing endeavors and their influence on our organization.

The dashboard yields several important findings that should be highlighted.

- Clicks and Impressions are essential indicators that offer valuable information about the extent and involvement of our social media campaigns. By analyzing the data visually, we can promptly determine which platforms, regions, and consumer segments generate the most Clicks and Impressions. This knowledge empowers us to allocate resources more efficiently and enhance our content strategy.
- The Customer Acquisition Cost (CAC) is a crucial metric used to evaluate the cost-efficiency of our marketing campaigns. By tracking CAC on various social media platforms and customer segments, we can determine which campaigns are generating the most effective outcomes in terms of acquiring new customers. This understanding enables us to allocate our marketing budget more effectively and enhance our return on investment (ROI).
- The dashboard's filtering and segmentation capabilities allow for a more in-depth analysis of our social media efforts. By using the interactive filters, we can gain a comprehensive understanding of these initiatives across different channels, locations, and customer segments. This segmentation provides significant value as it aids in customizing our marketing strategies and effectively targeting specific audiences.

The comprehension of our social media endeavors' efficacy is crucial in the current competitive online environment, as it directly influences the achievement of marketing objectives. Tableau's Social Media Analytics Dashboard equips us with the ability to assess and modify our tactics by utilizing real-time information, thereby guaranteeing that our marketing investments are optimized for maximum efficiency and impact. As we persist in utilizing this dashboard, we foresee continued advancements in terms of our online visibility, user interaction, and customer acquisition rates, ultimately bolstering the overall prosperity of our business.

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