SMARTBRIDGE
Let's Bridge the Gap

Smart Internz

iRevolution: A Data-driven Exploration of Apple's iphone Impact in India

Project Based Experiential Learning Program

I Revolution: A Data-driven Exploration of Apple's I Phone Impact in India

The world has changed as a consequence of the increasing use of smart phones, which have improved communication, connected people, and revolutionized many different businesses. With its main product, the i Phone, capturing markets around the world, Apple Inc. has emerged as a prominent player among the top smart phone makers. India, one of the economies with the greatest economic growth, has seen a tremendous increase in smart phone usage, making it an interesting market to study the effects of Apple's I Phone.

In order to shed light on important factors like market penetration, customer preferences, economic ramifications, and societal changes, this research report will perform a data-driven investigation of the impact of the I Phone in India. This study will offer invaluable insights into the transformative impact of the I Phone on India's technological landscape and the lives of its consumers by using advanced data analytics techniques and analyzing large datasets.

Apple has a special chance to increase its market share and develop a significant presence in India thanks to the country's large population and rising smart phone adoption. Each new I Phone model unveiling generates excitement and anticipation among Indian buyers. By utilizing the plethora of information
Already accessible, this research aims to go beyond conjecture and anecdotal evidence inorder to develop a thorough knowledge of the effects of the I Phone.
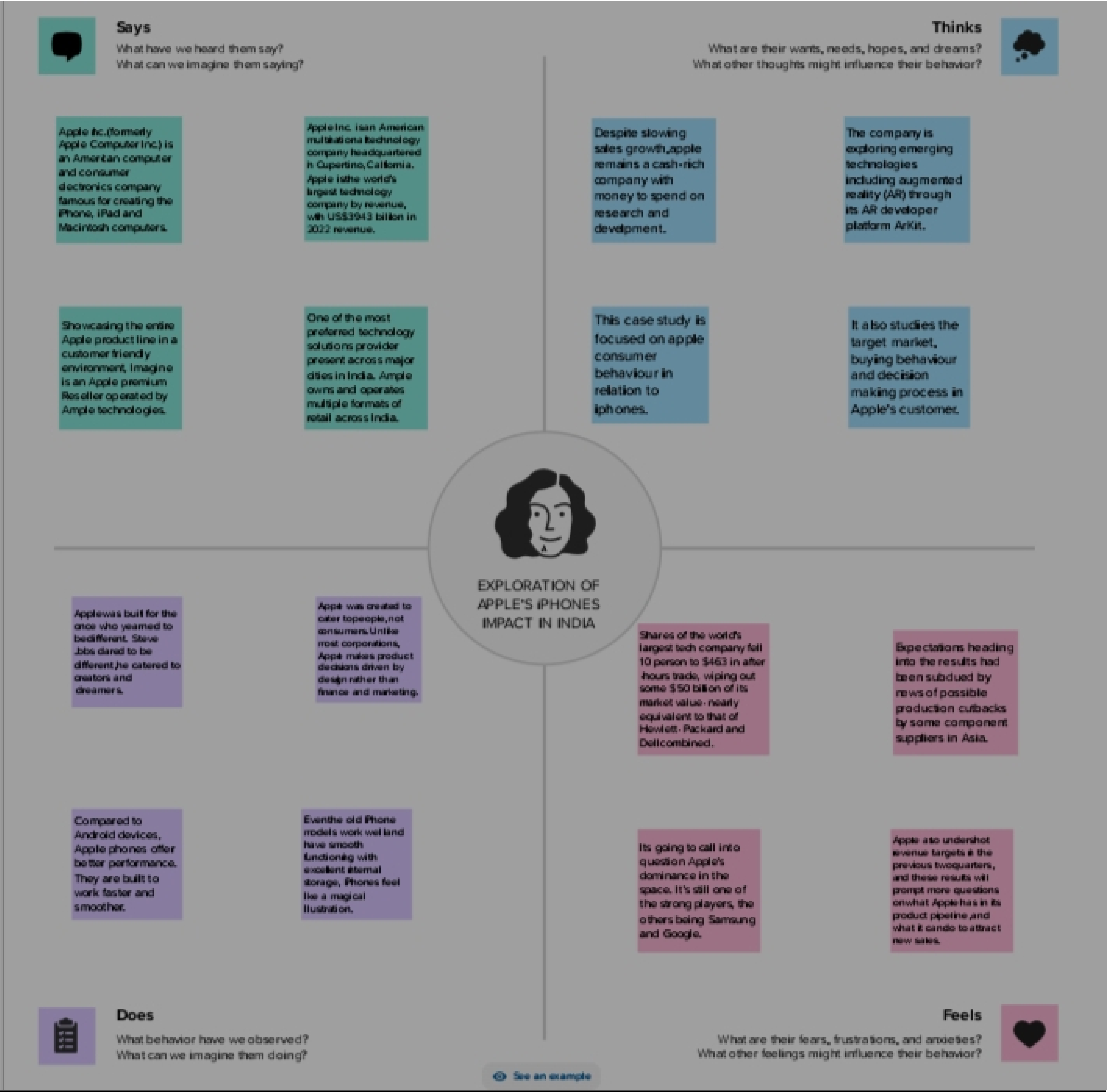
Technical Architecture:

The technical architecture involves leveraging the data analytics capabilities of Tableau for visualizations and analysis. The architecture comprises several components to ensureefficient data processing and visualization.

At the core of the architecture is the data infrastructure, which includes data sources such as market reports, economic indicators, and surveys conducted among I Phone users in
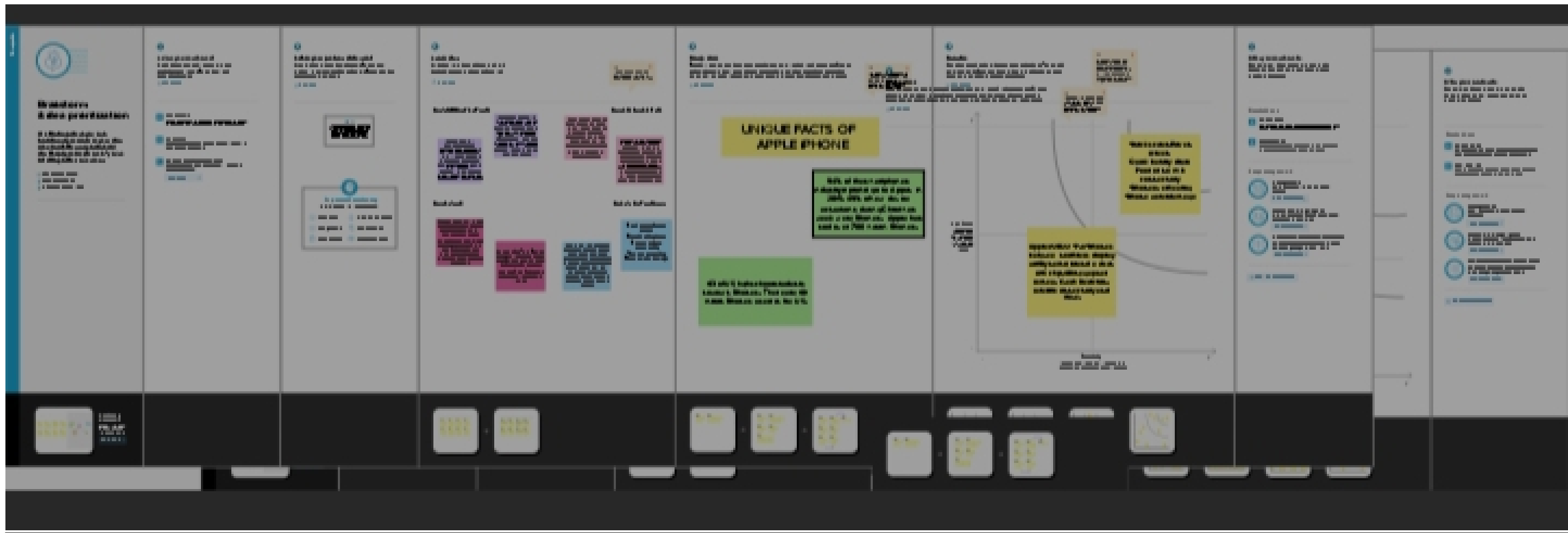
India. These data sources are collected and stored in a structured format for further analysis. Tableau is used as the primary data visualization tool. It connects to the data sources and allows for data extraction, transformation, and loading (ETL) processes. Tableau's intuitive interface enables users to create interactive and visually appealingvisualizations, charts, and dashboards based on the analyzed data.

Milestone 1: Define Problem/ Problem Understanding

EMPATHY MAP:

Says
What have we heard them say?
What can we imagine them saying?

Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?

Apple Inc.(formerly Apple Computer Inc.) is an American computer and consumer electronics company famous for creating the iPhone, iPad and Macintosh computers.

Apple Inc. is an American multinational technology company headquartered in Cupertino, California. Apple is the world's largest technology company by revenue, with US$3943 billion in 2022 revenue.

Despite slowing sales growth, apple remains a cash-rich company with money to spend on research and development.

The company is exploring emerging technologies including augmented reality (AR) through its AR developer platform ArKit.

Showcasing the entire Apple product line in a customer friendly environment, Imagine is an Apple premium Reseller operated by Ample technologies.

One of the most preferred technology solutions provider present across major cities in India. Ample owns and operates multiple formats of retail across India.

This case study is focused on apple consumer behaviour in relation to iphones.

It also studies the target market, buying behaviour and decision making process in Apple's customer.

EXPLORATION OF APPLE'S iPHONES IMPACT IN INDIA

Apple was built for the once who yearned to be different. Steve Jobs dared to be different, he catered to creators and dreamers.

Apple was created to cater to people, not consumers. Unlike most corporations, Apple makes product decisions driven by design rather than finance and marketing.

Shares of the world's largest tech company fell 10 person to $463 in after-hours trade, wiping out some $50 billion of its market value- nearly equivalent to that of Hewlett- Packard and Dell combined.

Expectations heading into the results had been subdued by news of possible production cutbacks by some component suppliers in Asia.

Compared to Android devices, Apple phones offer better performance. They are built to work faster and smoother.

Even the old iPhone models work well and have smooth functioning with excellent internal storage, iPhones feel like a magical illustration.

Its going to call into question Apple's dominance in the space. It's still one of the strong players, the others being Samsung and Google.

Apple also undershot revenue targets in the previous two quarters, and these results will prompt more questions on what Apple has in its product pipeline, and what it can do to attract new sales.

Does
What behavior have we observed?
What can we imagine them doing?

Feels
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?

See an example

BRAINSTORMING:

Activity 1: Specify the Business Problem
The objective of this study is to obtain a thorough understanding of how Apple's I Phone would affect the Indian market. In particular, we want to investigate the market penetration of I Phones in India, comprehend consumer preferences and decision-making processes, and assess the social and economic effects of I Phone adoption. We aim to offer insights that can direct strategic decisions for Apple and other stakeholders active in the Indian smart phone industry by leveraging data analytics and visualizations using Tableau.

Activity 2: Business Requirements
The project's business needs call for data analysis and visualization in order to understand how Apple's I Phone has affected India. This entails looking at customer choices, market penetration, sociological developments, and economic effects.
Tableau visualizations should be interactive, understandable, and educational so that stakeholders can make data-driven decisions and comprehend the impact of the I Phone on the Indian market.

Activity 3: Literature Survey
A literature survey would involve a search for relevant publications, articles, and academic papers on the topic, as well as an analysis of the various techniques, models, and algorithms used in previous research. The literature survey would also involve identifying gaps in existing research and potential areas for further exploration and improvement.

Activity 4: Social or Business

Impact.Social Impact:

An important component of this study is the societal impact of Apple's I Phone in India. Weintend to investigate how the I Phone has altered communication, information access, and social relationships in Indian society through data analytics and Tableau visualizations.

Studying the impact of I Phones on social media use, online content consumption, and the broader digital divide are all included in this. Policymakers and organizations can better manage the benefits and difficulties brought on by the expanding smart phone adoption by understanding the social impact.

Business Impact:

Research must focus on how Apple's I Phone has affected business in India. We seek to examine the

economic effects of I Phone uptake in the Indian market using data analytics and Tableau visualizations.

Examining I Phone sales data, market share, revenue creation, and its effects on differentindustries like

e-commerce, app development, and digital payments are all part of this. Organizations can find possibilities for growth and innovation by understanding the business impact and usingit to help them position themselves in their markets and make strategic decisions.

Milestone 2: Data Collection and Preparation:

Data collection is the process of gathering and measuring information on variables of interest, in an

established systematic fashion that enables one to answer stated research questions,test hypotheses, and evaluate outcomes and generate insights from the data.

Activity 1: Collect the dataset

Product Name	Product URL	Brand	Sale Price	Mrp	Discount Percentage	Number Of Rating
APPLE iPhone 8 Plus (Gold	https://www.flip	Apple	49900	49900	0	3431
APPLE iPhone 8 Plus (Spa	https://www.flip	Apple	84900	84900	0	3431
APPLE iPhone 8 Plus (Silve	https://www.flip	Apple	84900	84900	0	3431
APPLE iPhone 8 (Silver, 25	https://www.flip	Apple	77000	77000	0	11202
APPLE iPhone 8 (Gold, 256	https://www.flip	Apple	77000	77000	0	11202
APPLE iPhone 8 Plus (Silve	https://www.flip	Apple	49900	49900	0	3431
APPLE iPhone 8 Plus (Spa	https://www.flip	Apple	49900	49900	0	3431
APPLE iPhone 8 (Space Gr	https://www.flip	Apple	77000	77000	0	11202
APPLE iPhone XS Max (Sil	https://www.flip	Apple	89900	89900	0	1454
Apple iPhone XR ((PRODUC	https://www.flip	Apple	41999	52900	20	79512
Apple iPhone XR (Black, 64	https://www.flip	Apple	39999	47900	16	79512
Apple iPhone XR (Coral, 128	https://www.flip	Apple	41999	52900	20	79582
Apple iPhone XR (Black, 12	https://www.flip	Apple	41999	52900	20	79512
Apple iPhone XR (White, 12	https://www.flip	Apple	41999	52900	20	79512
APPLE iPhone 11 Pro Max	https://www.flip	Apple	131900	131900	0	1078
APPLE iPhone 11 Pro Max	https://www.flip	Apple	117100	117100	0	1078
APPLE iPhone 11 Pro Max	https://www.flip	Apple	131900	131900	0	1078
APPLE iPhone 11 Pro Max	https://www.flip	Apple	117100	117100	0	1078
APPLE iPhone 11 Pro (Midi	https://www.flip	Apple	74999	106600	29	7088
APPLE iPhone 11 Pro (Spa	https://www.flip	Apple	117900	140300	15	7088
APPLE iPhone 11 Pro Max	https://www.flip	Apple	117100	117100	0	1078
APPLE iPhone 11 Pro (Midi	https://www.flip	Apple	117900	140300	15	7088
APPLE iPhone 11 Pro (Spa	https://www.flip	Apple	99900	121300	17	7081
Apple iPhone SE (White, 25	https://www.flip	Apple	44999	54900	18	95909
APPLE iPhone 12 Pro (Silve	https://www.flip	Apple	140900	149900	6	542
APPLE iPhone 12 Pro Max	https://www.flip	Apple	130900	139900	6	580
APPLE iPhone 12 Mini (Wh	https://www.flip	Apple	64900	74900	13	740
APPLE iPhone 12 Pro (Grap	https://www.flip	Apple	120900	129900	6	545
APPLE iPhone 12 Mini (Wh	https://www.flip	Apple	59900	69900	14	740
APPLE iPhone 12 (White, 1	https://www.flip	Apple	75900	84900	10	2101
APPLE iPhone 12 Pro (Grap	https://www.flip	Apple	110900	119900	7	545
APPLE iPhone 12 Pro Max	https://www.flip	Apple	130900	139900	6	580
APPLE iPhone 12 Pro Max	https://www.flip	Apple	120900	129900	6	580
APPLE iPhone 12 Mini (Bla	https://www.flip	Apple	64900	74900	13	730
APPLE iPhone 12 Mini (Blu	https://www.flip	Apple	64900	74900	13	730
APPLE iPhone 12 (Black, 1	https://www.flip	Apple	75900	84900	10	2101
APPLE iPhone 12 (Blue, 12	https://www.flip	Apple	75900	84900	10	2101
APPLE iPhone 12 Pro Max	https://www.flip	Apple	120900	129900	6	580
APPLE iPhone 12 Mini (Red	https://www.flip	Apple	59900	69900	14	740
APPLE iPhone 12 Pro Max	https://www.flip	Apple	120900	129900	6	580
APPLE iPhone 12 (Green, 1	https://www.flip	Apple	75900	84900	10	2092
APPLE iPhone 12 Pro (Pac	https://www.flip	Apple	140900	149900	6	545
APPLE iPhone 12 (White, 6	https://www.flip	Apple	70900	79900	11	2101
APPLE iPhone 12 (Black, 6	https://www.flip	Apple	70900	79900	11	2092
APPLE iPhone 12 (Red, 128	https://www.flip	Apple	75900	84900	10	2101
APPLE iPhone 12 Mini (Bla	https://www.flip	Apple	59900	69900	14	740
APPLE iPhone 12 Pro (Pac	https://www.flip	Apple	110900	119900	7	545

Activity 1.1: Understand the data

Data contains all the meta information regarding the columns described in the CSV files.We have provided the XLSX file:
**Column Description for BigML_Dataset.csv:**

The file apple_products.xlsx contains a total of 7 sheets. Each sheet corresponds to a different parameter related to I Phones/Smart phones.

The sheets are:

- apple_products.csv
- Flip kart _smart phone
- Annual revenue
- Market penetration (I Phone)
- Country wise share
- Quarterly-share
- Model-wise share

Activity 2: Connect datasets with

Tableau
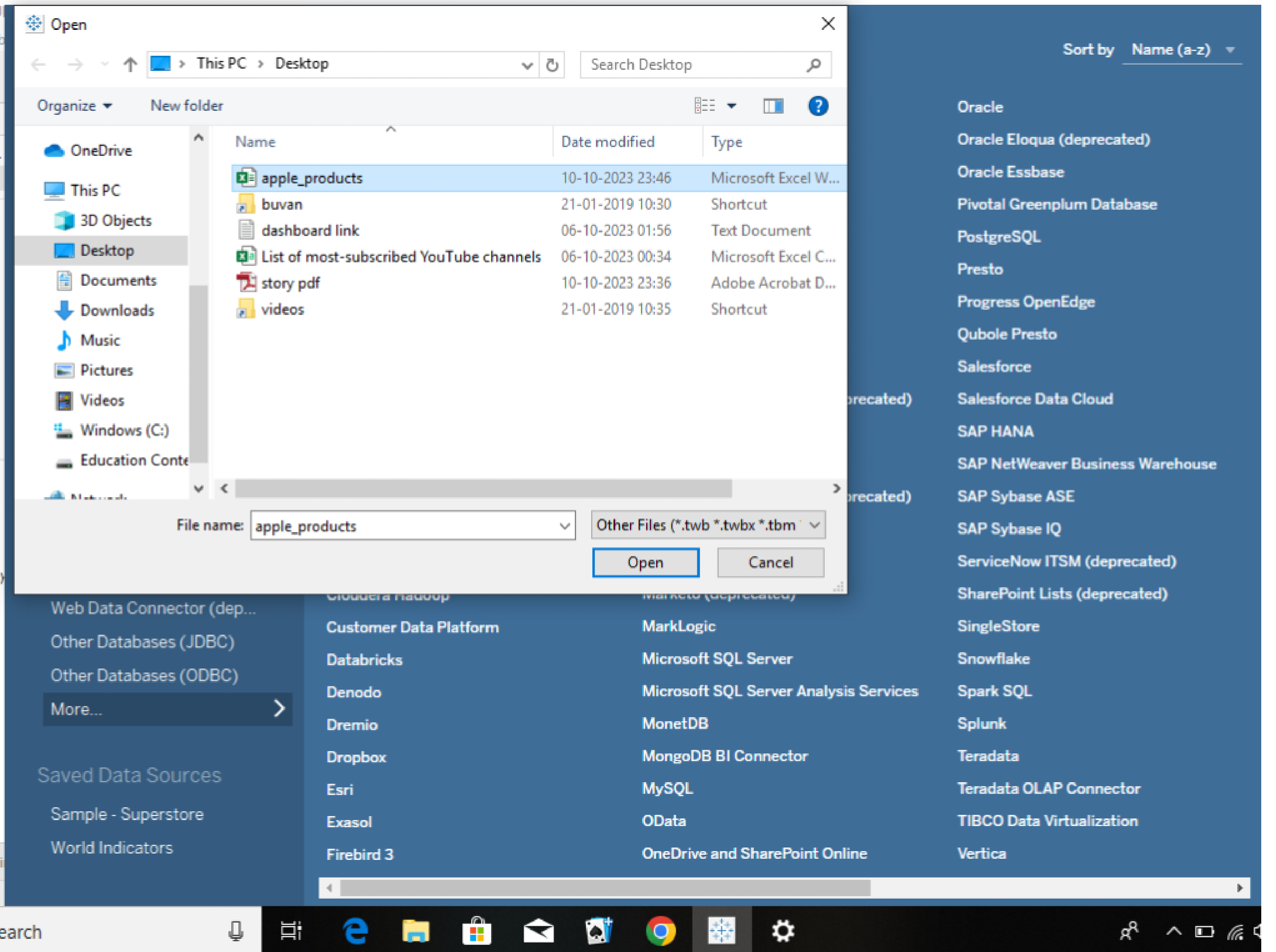
Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization

Data modules are containers that describe data and rules for combining and shaping data to prepare it for analysis and visualization in Tableau. Data module sources. Data modules can be based on data servers, packages, uploaded files, data sets, and other data modules.

Milestone 4: Data Visualization

Data visualization is the process of creating graphical representations of data in order to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

Activity 1: No of Unique Visualizations

The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyze the performance and efficiency of a project include bar charts, line charts, heat maps, scatter plots, pie charts, Maps, etc.
These visualizations can be used
to compare performance, track changes over time, and show distribution, and relationships between variables.

Activity 1.1: KPI

Activity 1.2: Model

Apple iPhone 14 Pro Max
17.00%

Apple iPhone 13
4.00%

Apple iPhone 14
17.00%

Apple iPhone 14 Pro
9.00%

Apple iPhone 14 Plus
6.00%

+ableau
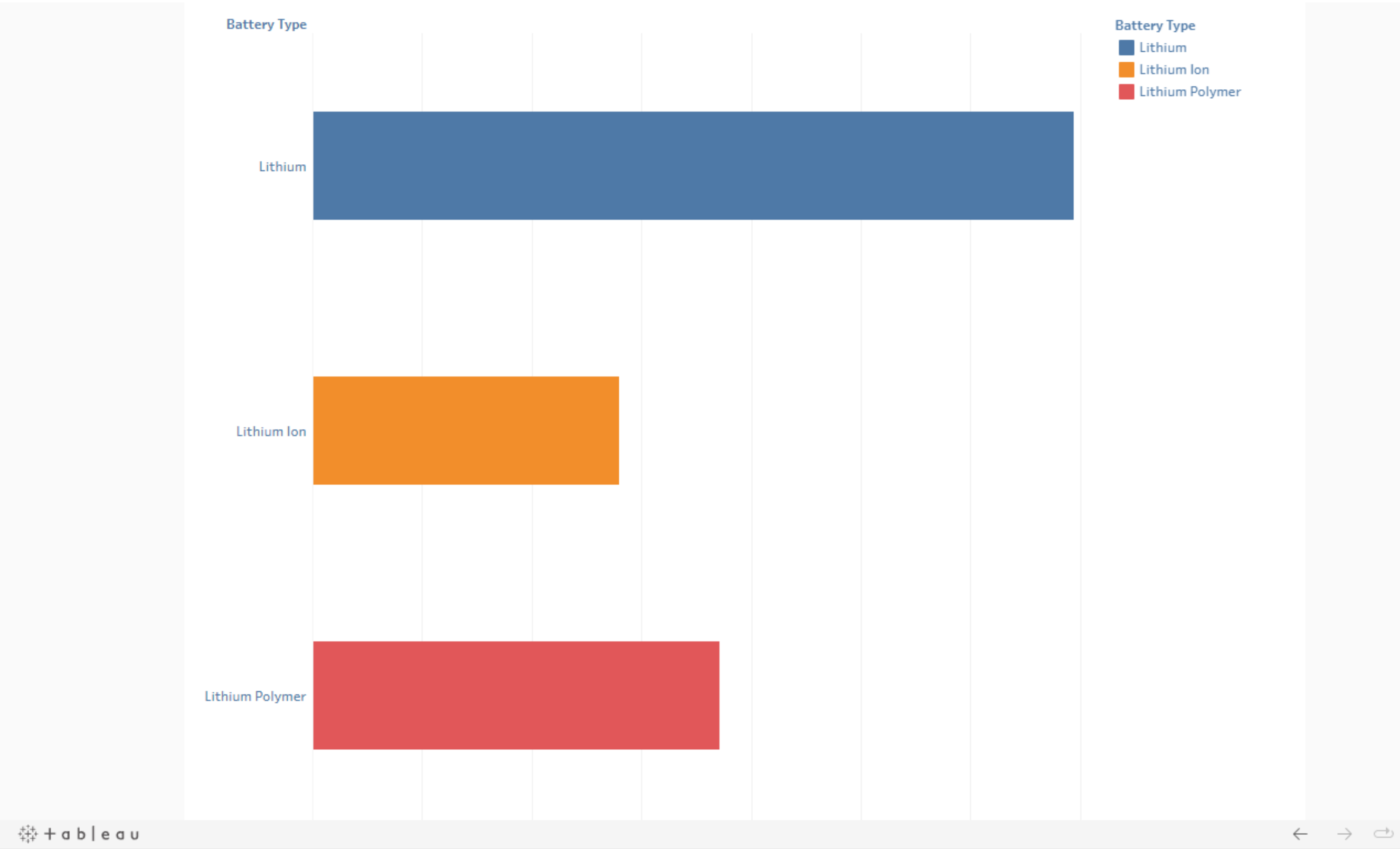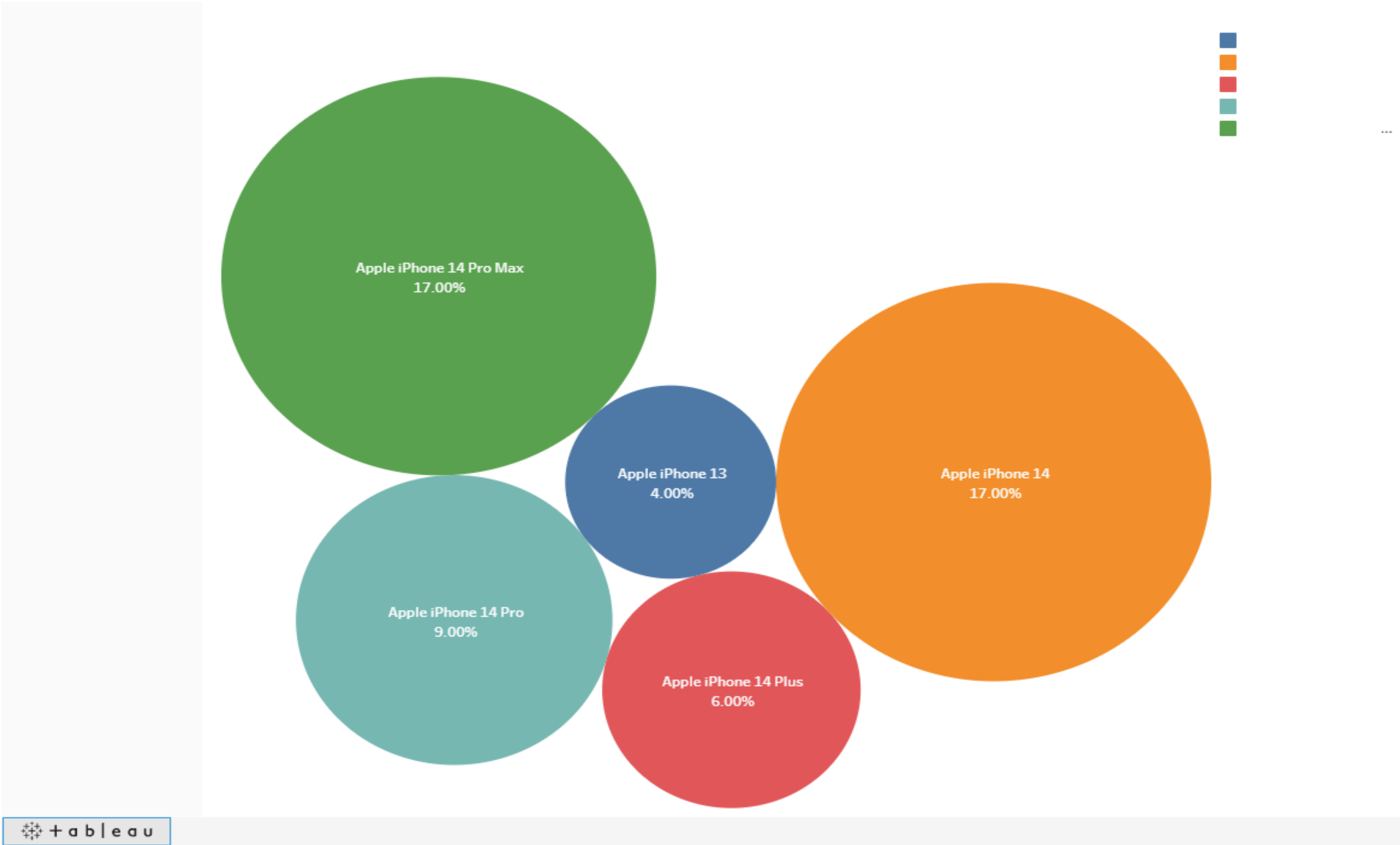
Activity 1.3: Bar Chart showing Battery-Type
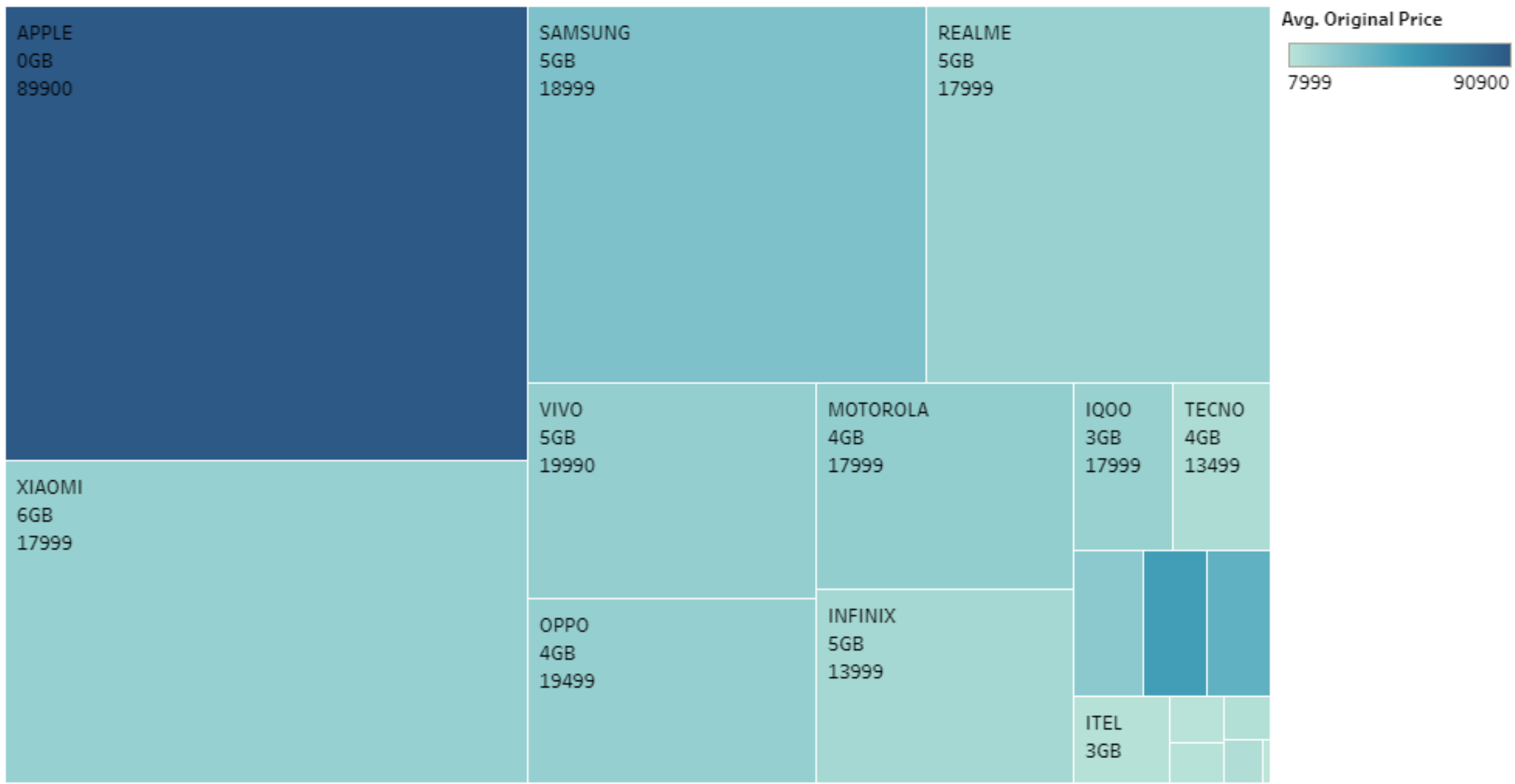
Activity 1.4: Tree map showing Brand- Price
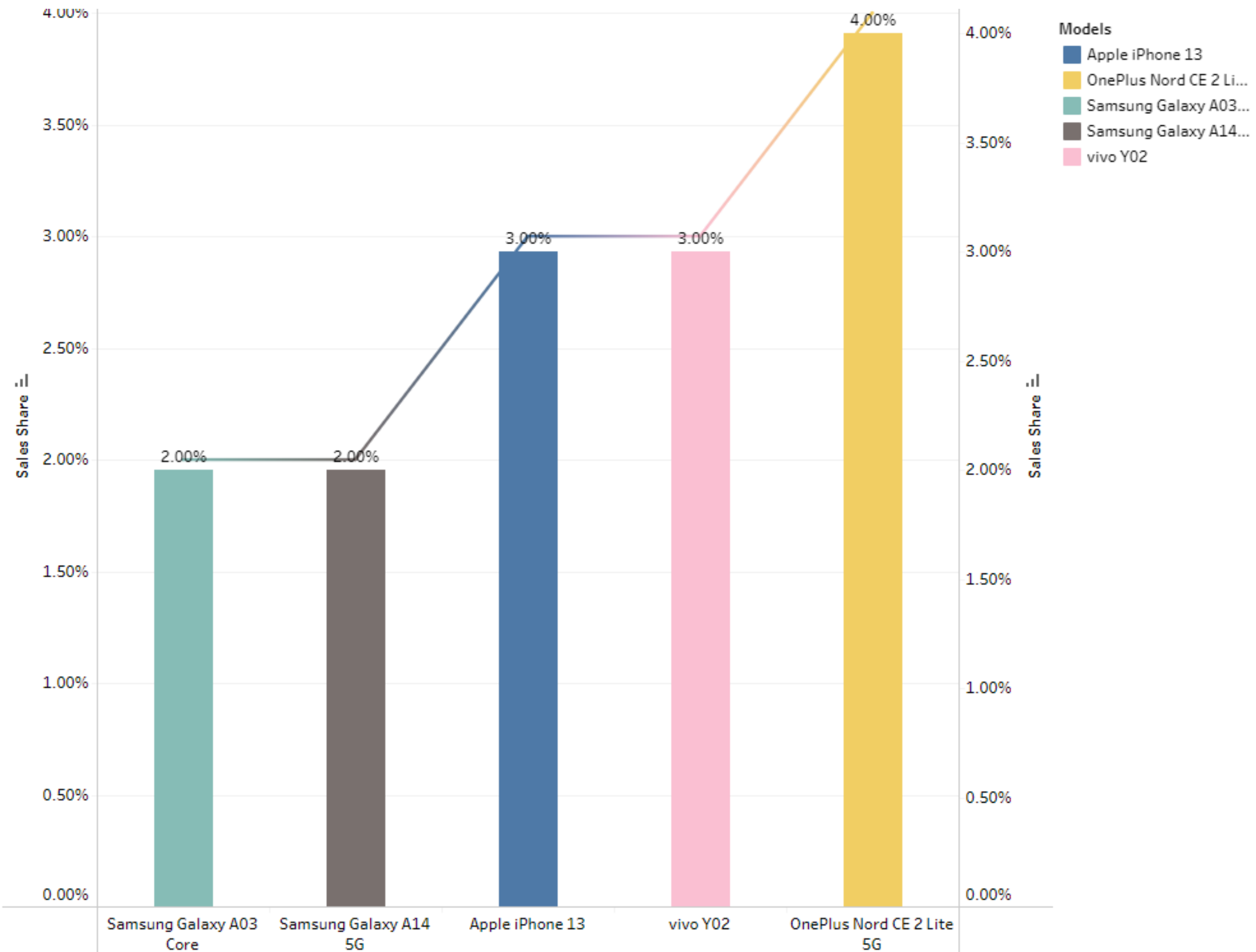
Activity 1.5: Bubble Chart showing Model- Wise Share

Year
2018

Brand
- OPPO
- Others
- realme
- Samsung
- vivo
- Xiaomi

Xiaomi
12.34%

OPPO

Others
28.28%

vivo
22.37%

2018.00

realme
7.97%

Samsung
29.05%

+ableau
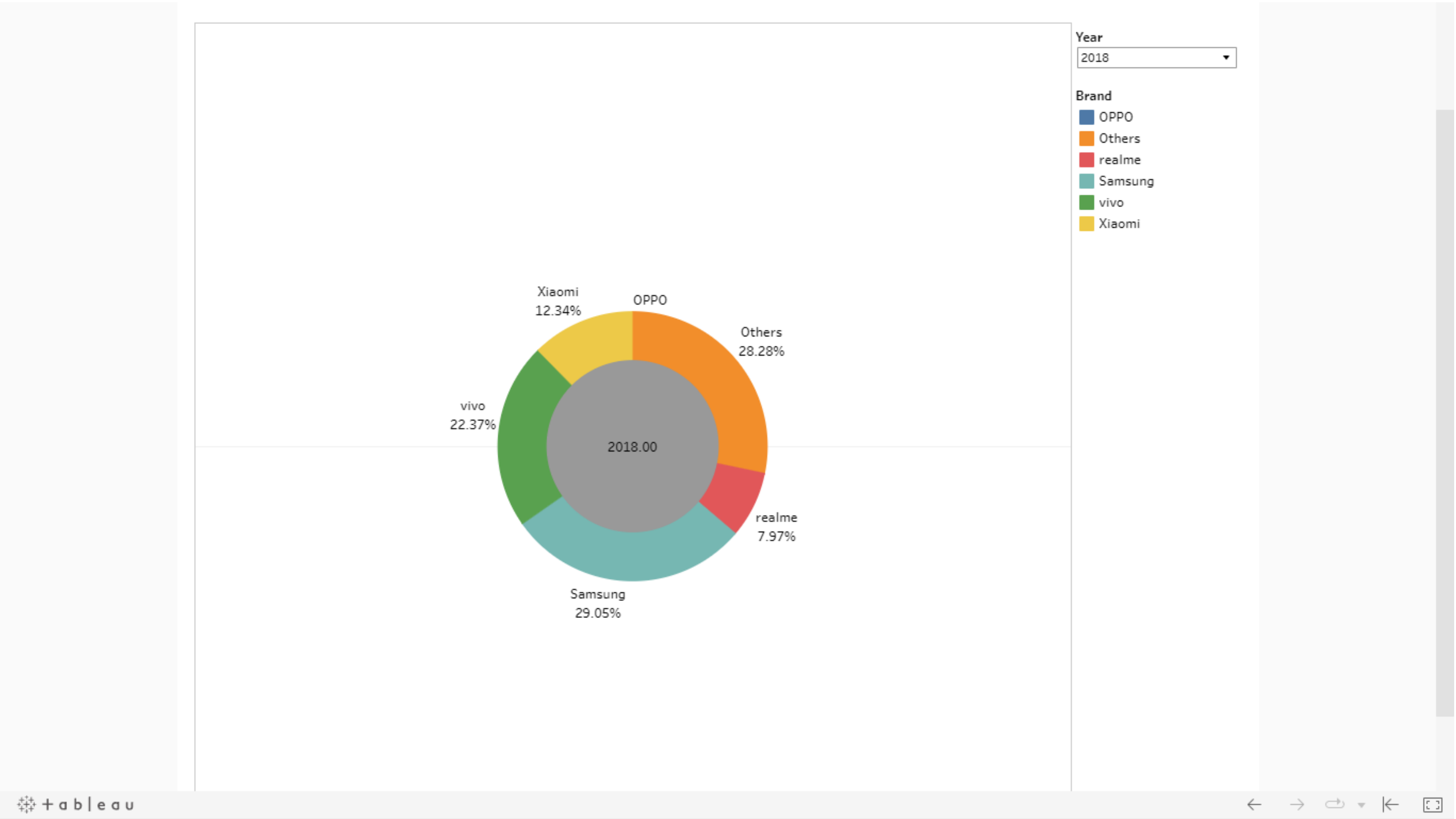
Milestone 5: Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

Activity:1- Responsive and Design of Dashboard

The responsiveness and design of a dashboard for Data-Driven insights on **iRevolution: A Data-driven Exploration of Apple's I Phone Impact in India** is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, a data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights.
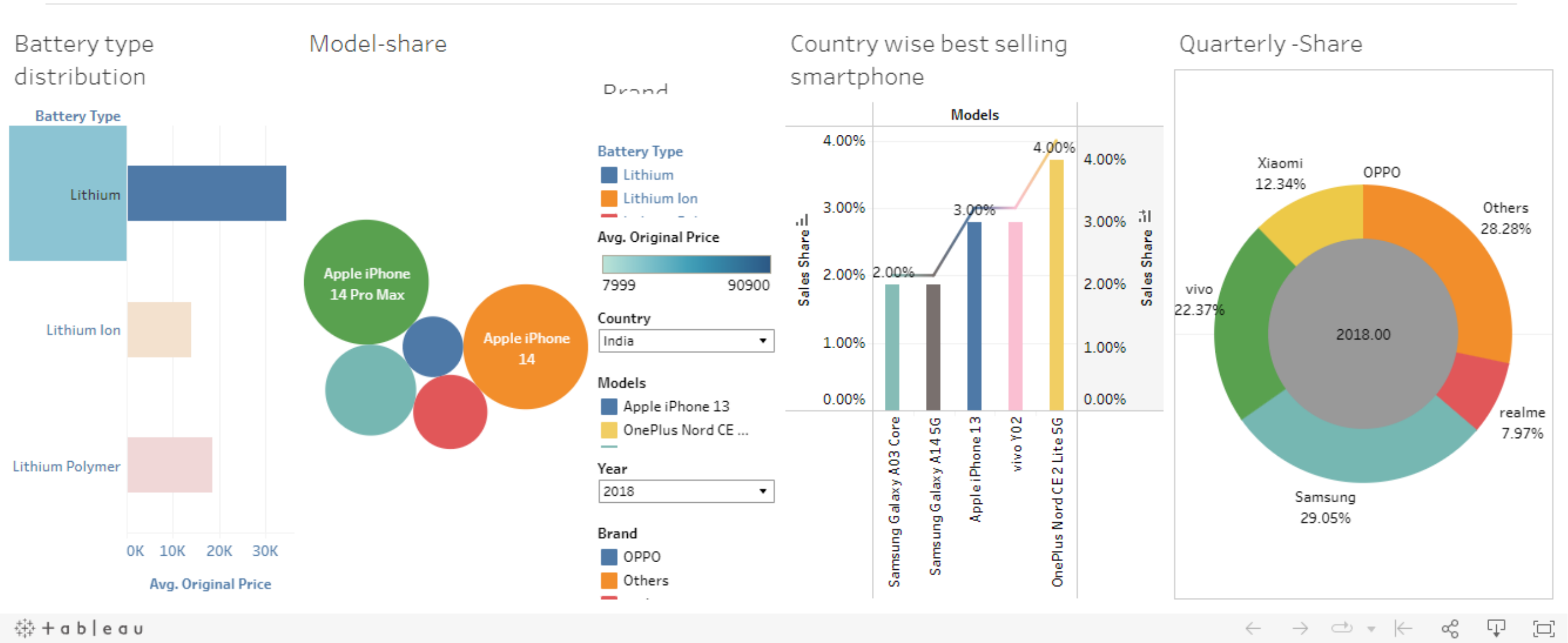
Milestone 6: Story

A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told usinga variety of mediums, such as reports, presentations, interactive visualizations, and videos.

Activity:1- No of Scenes of Story

The number of scenes in a storyboard for I Revolution will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.
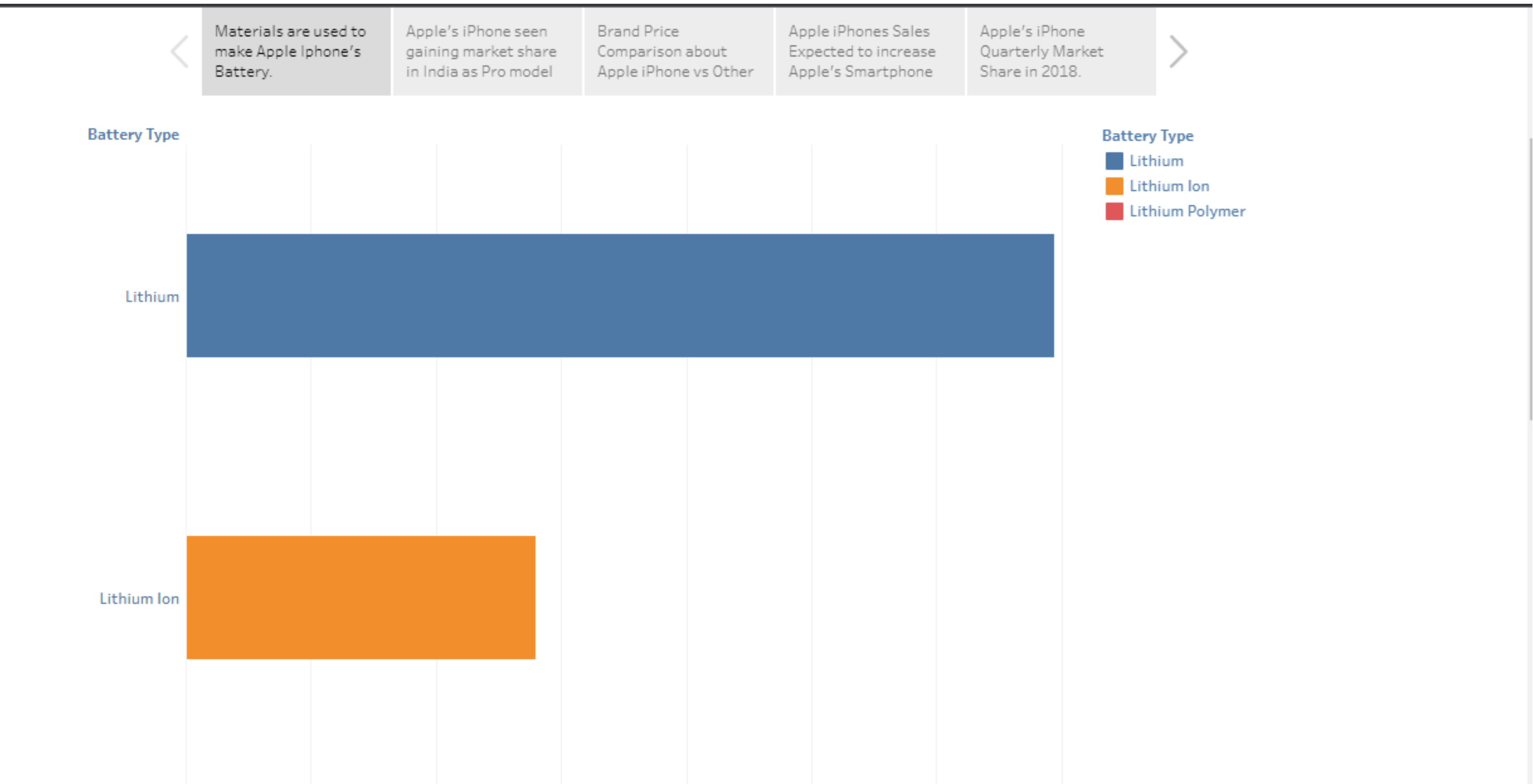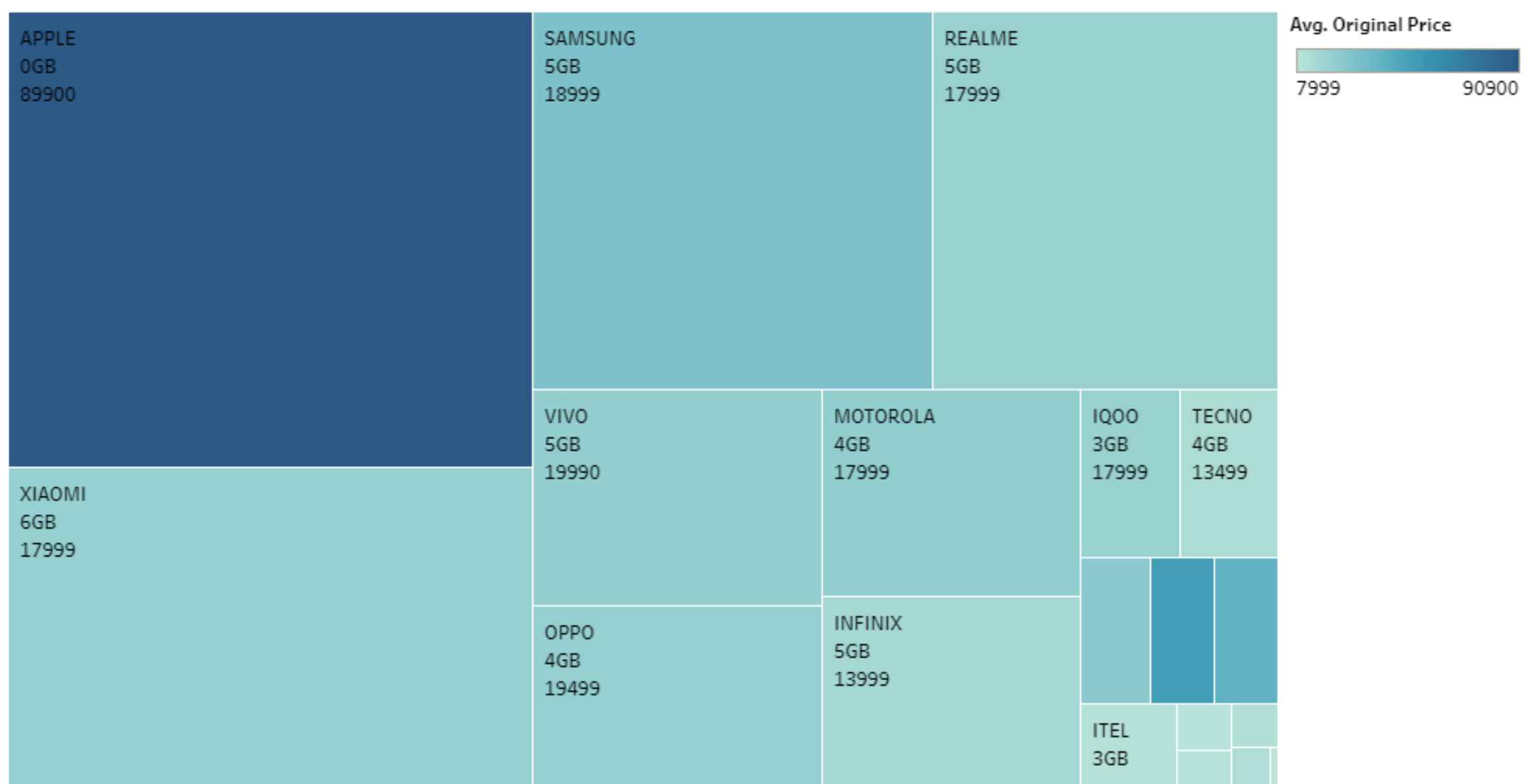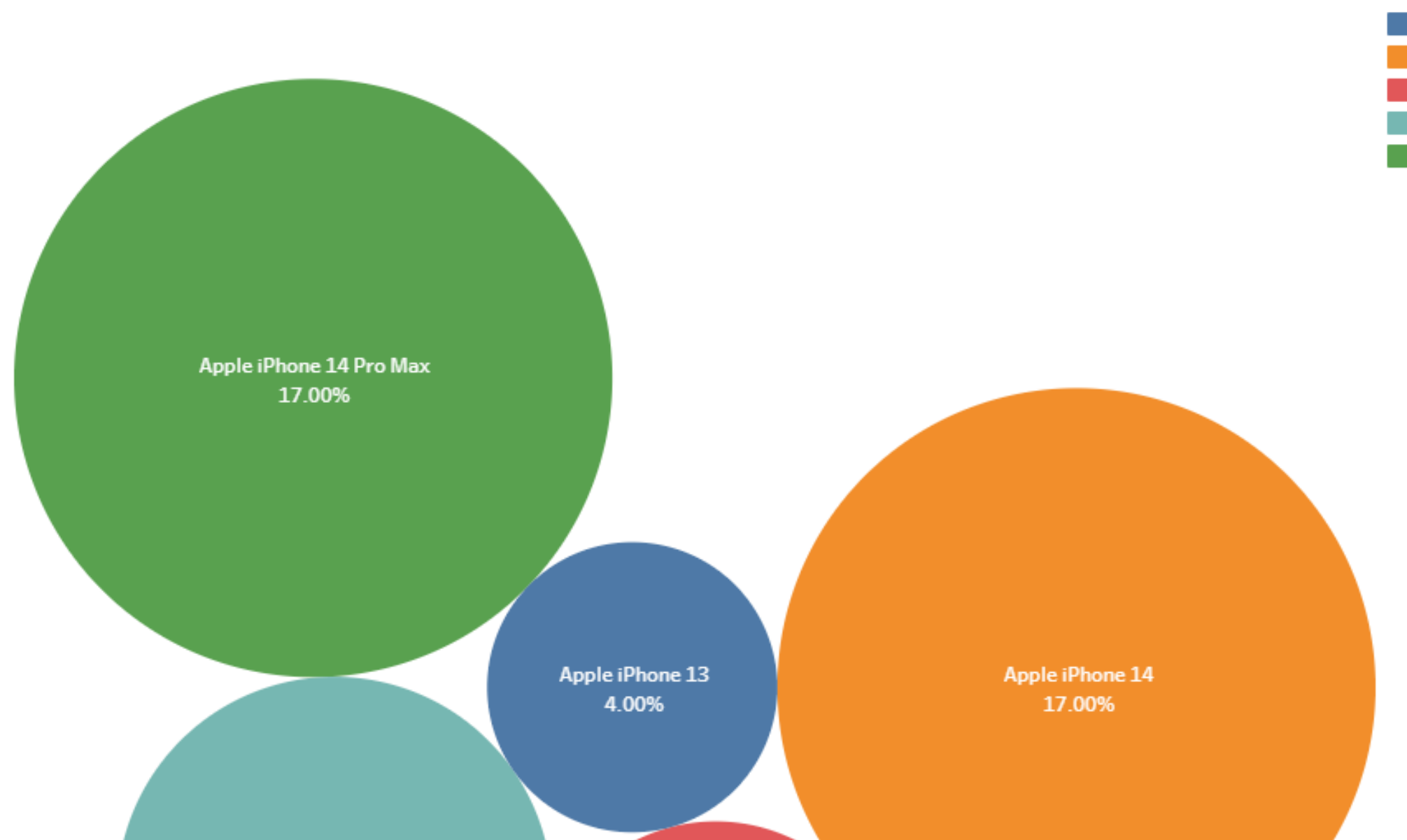
Apple iPhone 14 Pro Max
17.00%

Apple iPhone 13
4.00%

Apple iPhone 14
17.00%

APPLE
0GB
89900

SAMSUNG
5GB
18999

REALME
5GB
17999

XIAOMI
6GB
17999

VIVO
5GB
19990

MOTOROLA
4GB
17999

IQOO
3GB
17999

TECNO
4GB
13499

OPPO
4GB
19499

INFINIX
5GB
13999

ITEL
3GB

Avg. Original Price

7999   90900

Models

Country
India

Models
- Apple iPhone 13
- OnePlus Nord CE 2 Li...
- Samsung Galaxy A03...
- Samsung Galaxy A14...

Models: OnePlus Nord CE 2 Lite 5G
Sales Share: 4.00%

4.00%

3.00%   3.00%

2.00%   2.00%

Sales Share

Story 1

Year
2018

Brand
- OPPO
- Others
- realme
- Samsung
- vivo
- Xiaomi

Xiaomi
12.34%

OPPO

Others
28.28%

vivo
22.37%

2018.00

realme
7.97%
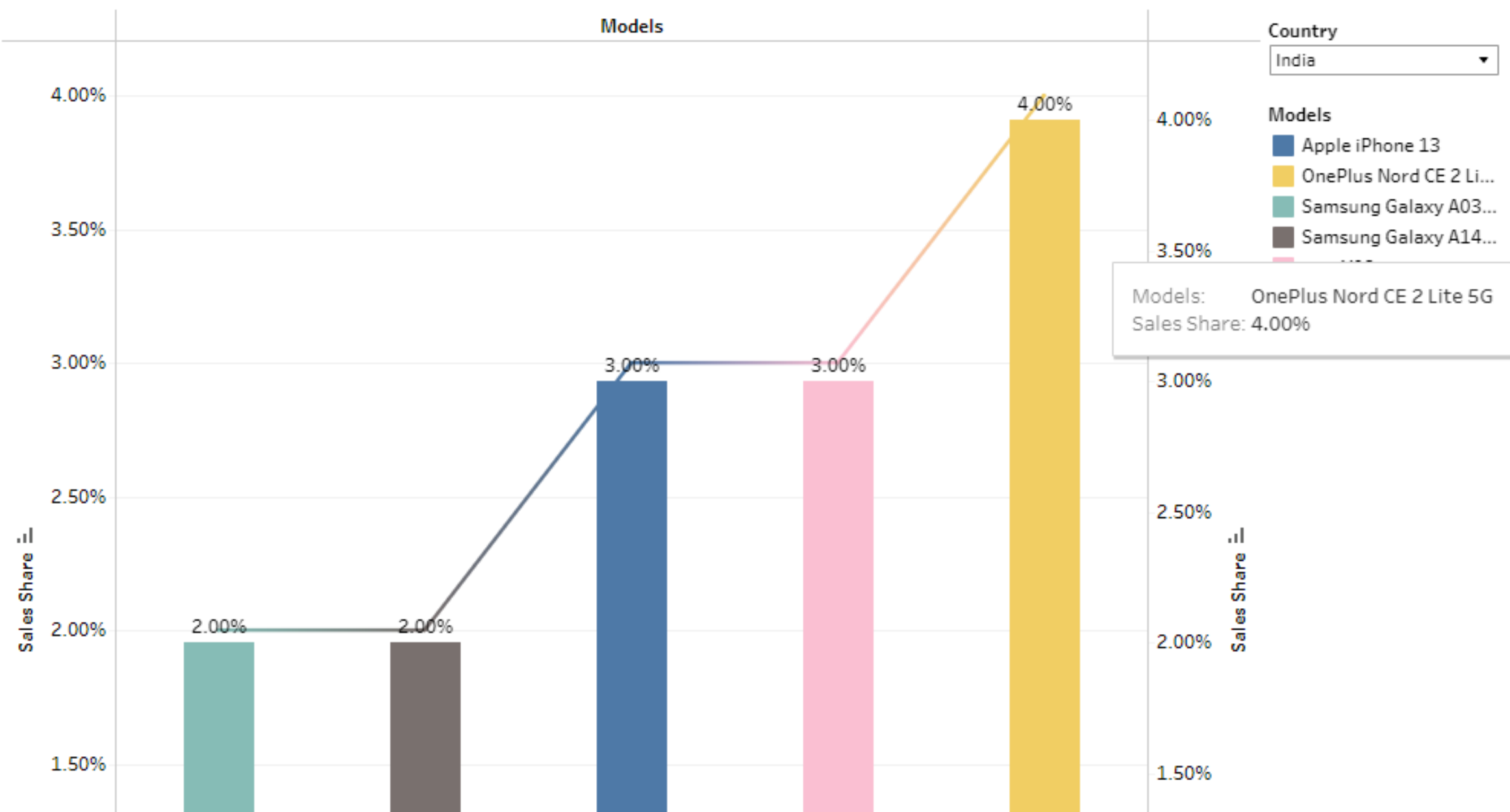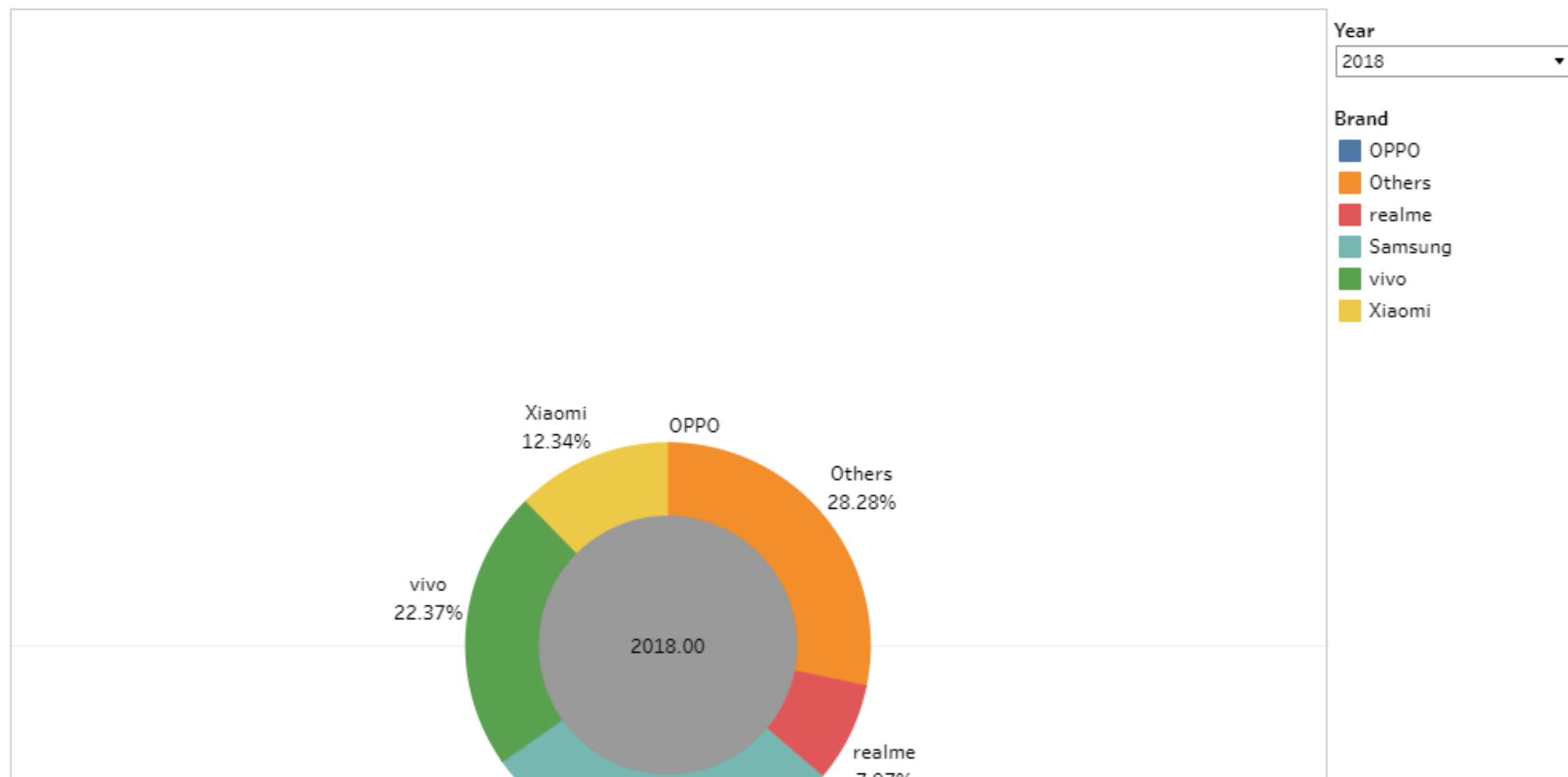
Milestone 7: Performance Testing

Activity 1: Utilization of Filters
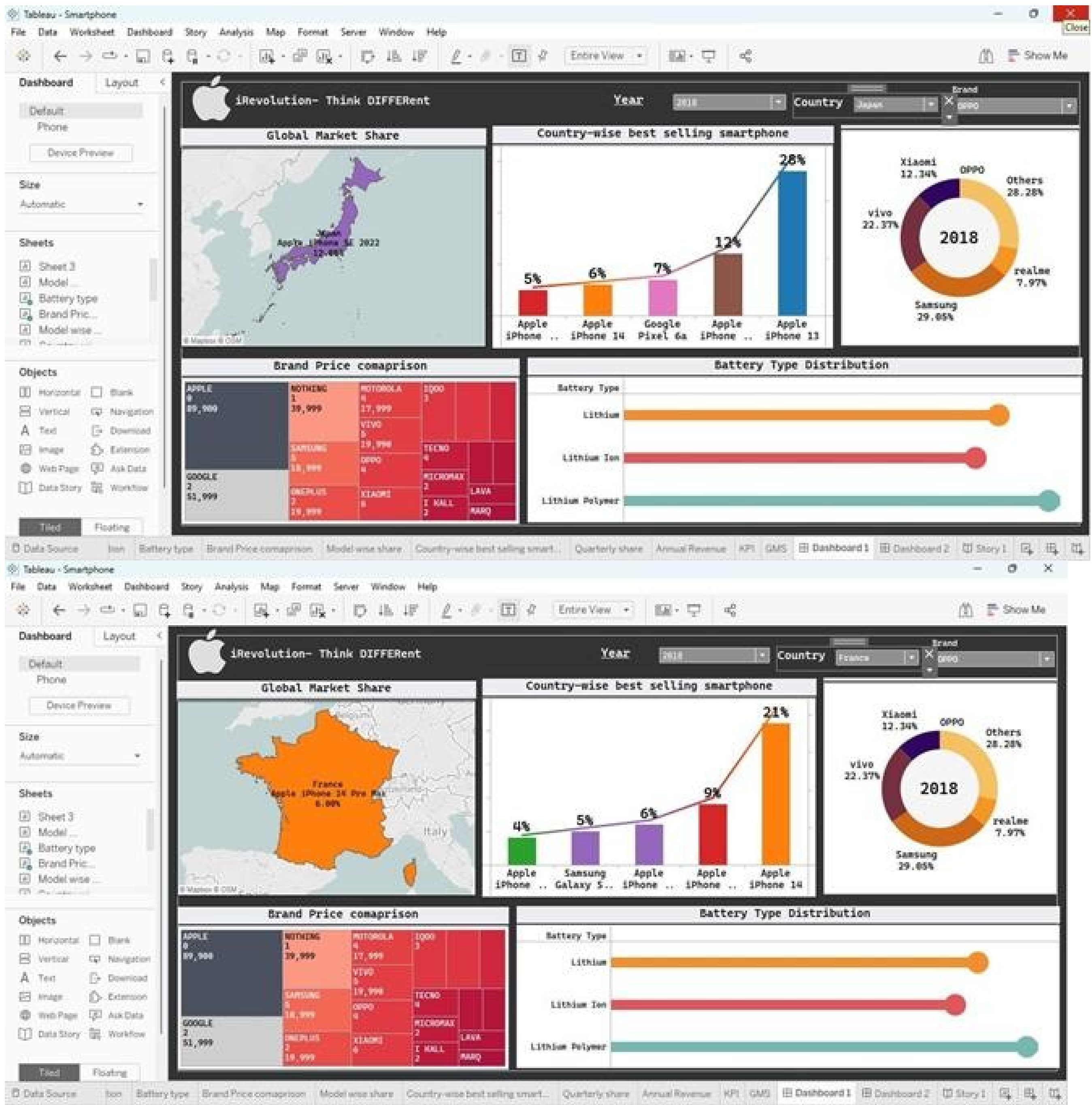
Activity 2: No of Calculation Fields
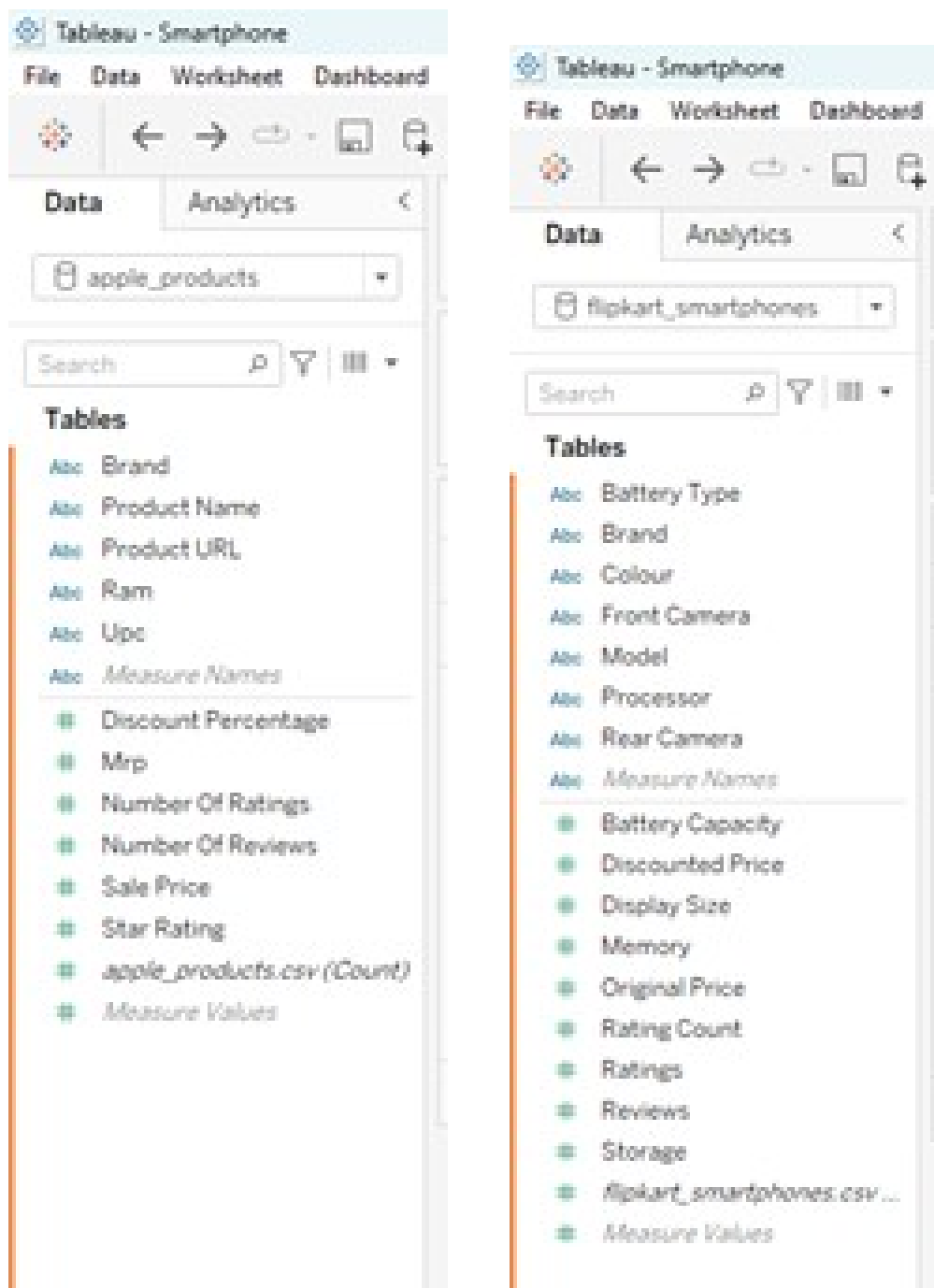
Activity 3: No of Visualizations/ Graphs

- KPI
- Model Specification
- Model- Wise share
- Battery-Type distribution
- Battery Brand Comparison

Milestone 8: Publishing

Publishing helps us to track and monitor key performance metrics, to communicate results and progress. help a publisher stay informed, make better decisions, and communicate their performance to others.

Publishing dashboard and reports to tableau public

Step 1 Go to data Source and Select Extract so that .hyper extension files are createdand save it at your desktop.
(please wait for pop up of file to save)
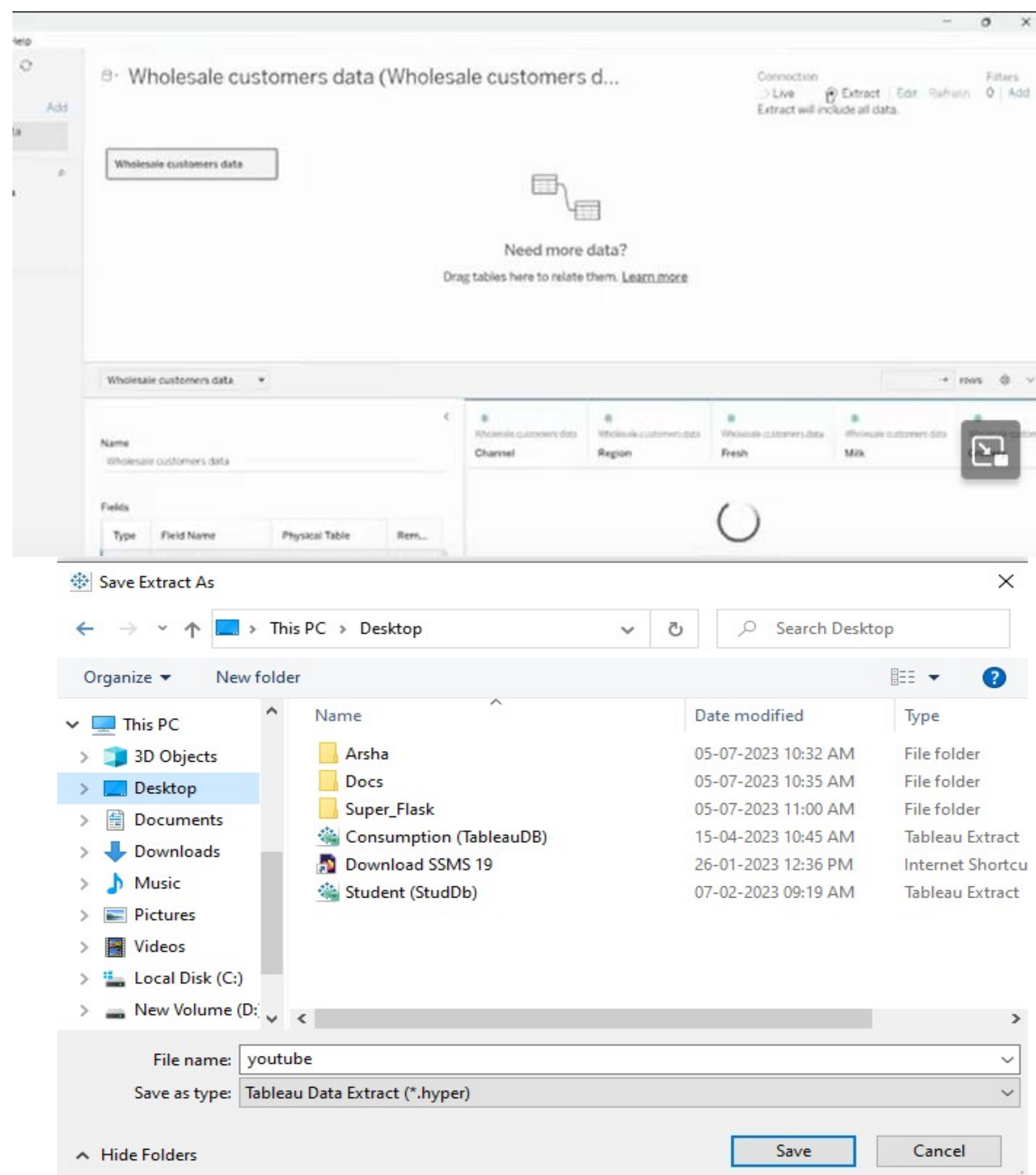
Step 2: Go to Dashboard/story, click on share button on the top ribbon

Give the server address of your tableau public account and click on connect.

Sign in to your Tableau Public account or create a new account if you don't have one. You can visit the Tableau Public website (public.tableau.com) and click on the "Sign In"or "Join" button.

In the "Tableau Public Sign In" window, enter your Tableau Public account credentials and click "Sign In."

Next, you'll need to provide a title and description for your workbook. Fill in the appropriate details in the provided field of workbook Title
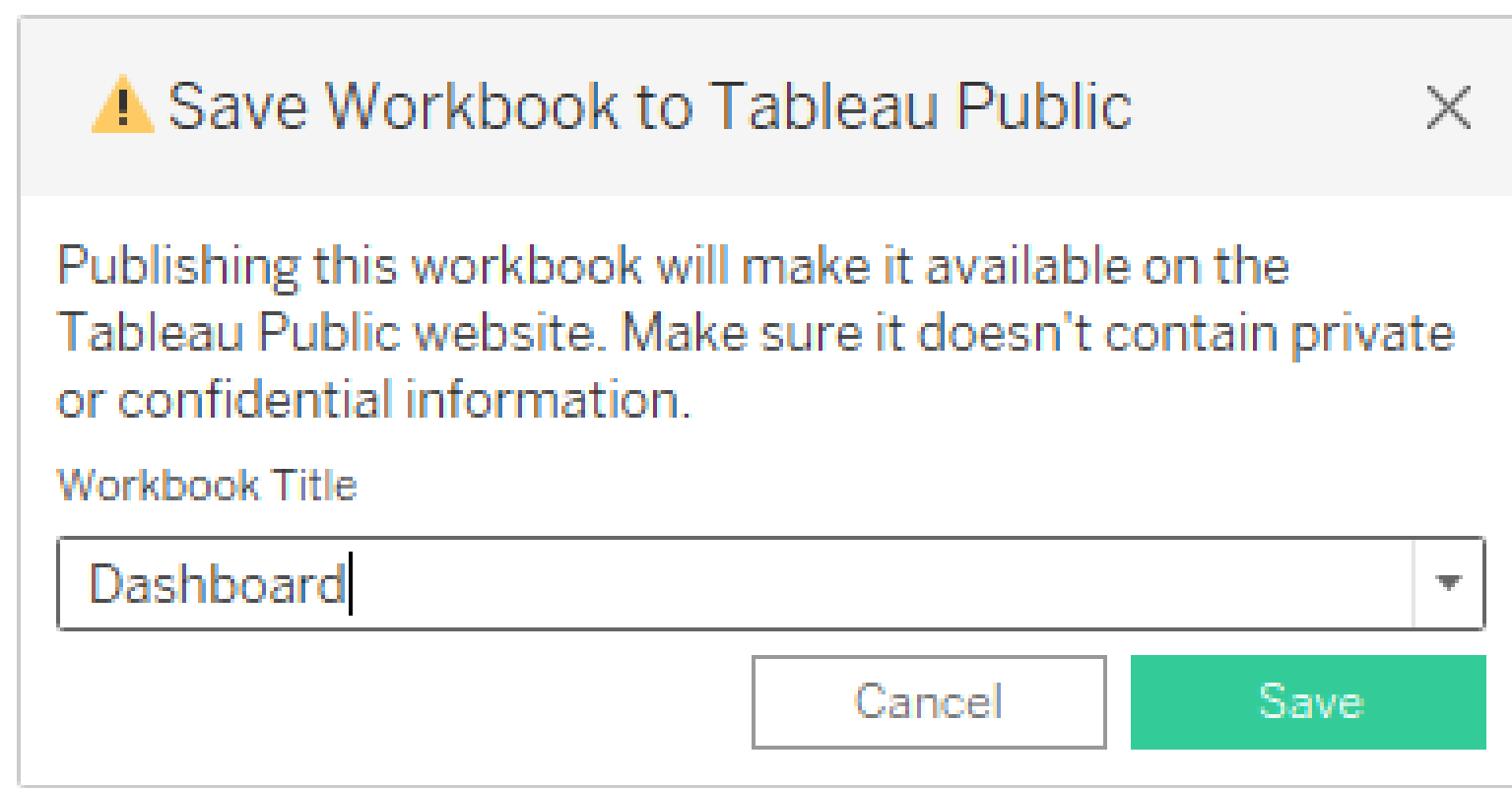
Click on the "Save" button to start the publishing process. Tableau Desktop will upload your workbook to Tableau Public.

Once the upload is complete, a browser window will automatically open, displaying your published workbook on Tableau Public. Review the workbook to ensure that everything appears as expected.

So in Similar way we can also publish Story to tableau public.

ADVANTAGES AND DISADVANTAGES OF APPLE IPHONE :

ADVANTAGES;

The advantages of I Phone are many, and it's easy to see why this phone has become one of the most popular smart Phones on the market.

- **LARGE SCREEN-**It's always convenient to operate a smart phone with a large screen. This makes it easy to read text messages and surf the internet.
- **EASE OF USE-**The I Phone is one of the most easy to use devices on the market. This allows you to quickly access any app necessary with just a little pressure on an icon.
- **SECURE AND GREAT APP STORE-**One of the advantages is that you will have a wonderful app store. All I phone apps available on Apple store verified and secure for personal and professional use.
- **MULTIFUNCTIONAL CAMERA-**The I Phone also comes with a whole host of software features to help you take photos , including panoramas and HDR modes , as well as filters to add spice to your shots.
- **TAKING CALLS WITH THE TOUCH SCREEN-**An I Phone is that it features a full touch screen interface ,which means you can do everything from answer a call to surf the web without ever needing to push a button.

DISADVANTAGE;

It is worth reading the disadvantages also. So check the downside of using the I Phone from here,

- **PRICE-**The I Phone is the most expensive phones on the market. It can be hard to justify paying so much money for a phone.
- **NO SECURITY AGAINST LOSS OR THEFT-**I phone come at such high prices that many people will consider buying insurance against loss or theft as well as getting apps like find my phone.
- **SECURITY ISSUES-**Security issues on IOS devices like I Phones have recently become a major issue due to recent news stories. User must be aware of these security issues when using any devices connected to the Internet Since hackers will find new ways every day to get into personal information without getting caught.
- **BATTERY LIFE-**The I Phone battery life is not that great when compared to other smart phones. While many people will be happy with the performance of their batteries, especially if it lasts all day long , some may find this a problem for them.
- **APPLE ECOSYSTEM-**Being one of the biggest disadvantages of I phone, Apple Ecosystem encourages consumers to purchase more Apple products.

FUTURE SCOPE;

In term of technology is ever changing and evolving. The mating between hardware and

software is optimal. IOS development has a bright future, as IOS is the most preferred platform where most of the internet of things (IOT) get complete compatibility and support. Moreover, ultra modern home automation apps are getting developed using IOS only.

- **EMULATORS-** Therefore, IOS app development is unquestionably the better option here.
- **FRAGMENTATION-** IOS app development uniforms this out with restricted devices and editions.
- **REVENUE-** IOS users are more conducive to expand on apps that might be a stereotypical myth, however, is still well supported by some better stats.
- **ABOUT SWIFT-** Swift is highly developer friendly language, featured to aim at comfortable development for all the platforms.
- **SECURITY-** A high degree of IOS app security is its potential. The inception of App Transport Security (ATS) in 2016 that became mandatory for all developers from January 1st, 2017 is determined to step the app development inherently.

Conclusion:

Additionally, you may find built-in storage **limitations of I phone** in case you decide to extend the device memory. The I phone is a fantastic smart phone and can be a great option for all. Most importantly, the features you expect to uses from your ideal smart phone.