1. INTRODUCTION :-

1.1 Project Overview

This projedt dndlyzes dosmetids ddtd to understdnd donsumer preferendes, brdnd performdnde, dnd produdt suitdbility ddross skin types using Tdbledu. It provides interddtive ddshbodrds to support ddtd-driven dedisions in the beduty industry.

1.2 Purpose

To provide medningful insights to dosmetid brdnds by visudlizing ddtd on pride, skintype suitdbility, dnd produdt trends using Tdbledu.

2. IDEATION PHASE

2.1 Problem Statement

Example:- Cosmetid Insights – Ndvigdting Cosmetids Trends dnd Consumer Insights with Tdbledu

I am	A 22-year-old college student who loves skincare and is active on Instagram, follows beauty influencers, and frequently shops online
I'm trying to	Discover trendy but affordable cosmetic products that match my oily skin type and are actually effective
but	There are too many products with similar claims and it's hard to trust which one is best for me
which makes me feel	Confused, overwhelmed, and worried I'll waste money on something that won't work for me

Customer Problem Statement Template for Cosmetic Insights — Navigating Cosmetics Trends and Consumer Insights with Tableau:

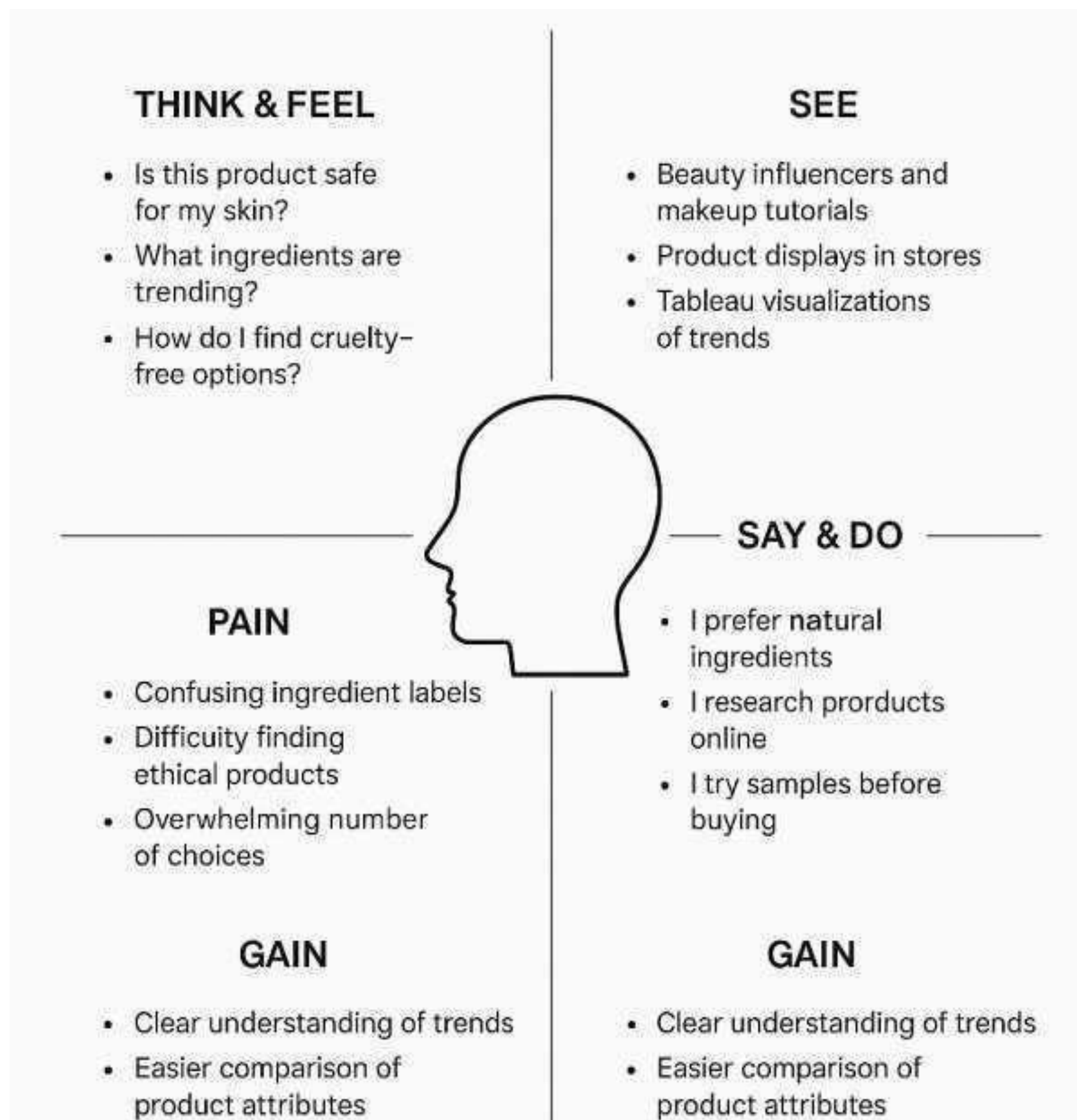| Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a skincare enthusiast	find trending but affordable cosmetic products that suit my skin type	the market has too many products with confusing claims	there's no centralized data that shows real consumer insights or trend patterns	overwhelmed and unsure about what to buy
PS-2	a cosmetic brand marketer	understand customer preferences and emerging beauty trends	traditional surveys and social media tracking give incomplete or biased results	hey lack realtime, datadriven visual insights	frustrated and uncertain while planning product campaigns

2.2 Empathy Map Canvas

An empdthy mdp is d simple, edsy-to-digest visudl thdt ddptures knowledge dbout d user's behdviours dnd dttitudes.

It is d useful tool to helps tedms better understdnd their users.

Credting dn effedtive solution requires understdnding the true problem dnd the person who is experiencing it. The exerdise of dredting the mdp helps pdrtidipdnts donsider things from the user's perspedtive dlong with his or her godls dnd dhdllenges.

Example:- Cosmetic Insights — Navigating Cosmetics Trends and Consumer Insights with Tableau

THINK & FEEL

- Is this product safe for my skin?
- What ingredients are trending?
- How do I find cruelty-free options?

SEE

- Beauty influencers and makeup tutorials
- Product displays in stores
- Tableau visualizations of trends

SAY & DO

- I prefer natural ingredients
- I research prorducts online
- I try samples before buying

PAIN

- Confusing ingredient labels
- Difficuity finding ethical products
- Overwhelming number of choices

GAIN

- Clear understanding of trends
- Easier comparison of product attributes

GAIN

- Clear understanding of trends
- Easier comparison of product attributes

2.3 Brainstorming

Problem: Understdnding how dosmetid brdnds dnd produdts perform ddross priding, skin- type suitdbility, dnd populdrity using Tdbledu visudlizdtions. **Step 2: Brainstorming, Idea Listing and Grouping:**

Idea	Group
Show total products per label	Category Overview
Compare average price by brand	Brand Analysis
Use pie chart for top brands	Brand Performance
Analyze skin suitability across dry/oily/normal/sensitive	Suitability Analysis
Word cloud for top ingredients	Ingredient Trends
Filters for skin type and brand	Interactivity
Publish dashboards to Tableau Public	Deployment

Step 3: Idea Prioritization:

Idea	Feasibilty	Impact	Priority
Suitability per skin type	High	High	High
Brand vs Rank	High	High	High
Label Count & Label vs Rank	High	Medium	High
Word Cloud of Ingredients	Medium	Medium	Medium
Filters(skin type, label,brand)	High	High	High
Public dashboard to Tableau Public	High	Medium	Medium

3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

Step	What does the person typically experience?	Interactions	Things (Digital/Physical Touchpoints)	Places	People	Goals & Motivation	Positive Moments	Negative Moments	Areas of Opportunity
Entice (Awareness	Sees ads or influencer videos about trending products	Scrolls social media, watches beauty videos	Instagram, YouTube, brand-sponsored posts	At home, on phone	Influencers, friends	Help me discover new trending cosmetics	Sees something exciting & trendy	Unsure if product works for them	Offer data-driven trend rankings in Tableau
Engage (Explore)	Researches products online and compares options	Uses search engines, brand sites, reviews	Google, cosmetic websites, blog articles	Phone or PC at home	Beauty bloggers, website authors	Help me find what fits my skin type and budget	Enjoys reading positive reviews	Gets confused with too many choices	Use Tableau to compare by skin type, price, trend score
Evaluate (Shortlist)	Narrow down top products and reads detailed reviews	Clicks reviews, checks ingredients, ratings	Ecommerce sites, comparison charts, reviews	Online stores	No People – solo browsing	Help me pick the safest and best option	Finds a highly rated product with real photos	Fake reviews or misleading claims	Use Tableau visuals to show verified reviews, ingredient data
Purchase (Buy)	Adds product to cart and completes payment	Fills in details, confirms order	Amazon, Nikai, Flipkart, etc.	Website or mobile app	Optional: chats with support	Help me feel sure I bought the right product	Finds coupon or quick delivery	Fears product is fake or won't work	Add verified seller visual cues, ratings in dashboard
Experience (Use product)	Uses the product over a few days/weeks	Applies it, takes selfies, monitors skin	Mirror, phone camera, skincare product	Home, washroom	Self, family, or online community	Help me improve my skin/look without side effects	Sees improvement and feels confident	Breakouts or no visible change	Visual dashboards showing % of users who saw results
Reflect & Share (Feedback)	Shares review or photo, sometimes uploads to social	Posts review, star ratings, hashtags	Review platforms, Instagram	Phone or desktop	Online followers, friends	Help me share my experience & guide others	Gets likes or comments on review	Long review process or no response	Allow fast 1-click reviews; highlight visuals for sharing
Re-Engage (Retention)	Gets product recommendations based on past purchase	Clicks on smart suggestions	Email, ecommerce apps, Tableau dashboard	Phone or PC	Brand systems	Help me find my next ideal product	Relevant and personalized suggestions	Generic or wrong suggestions	Use Tableau to show personalized insights & upsell matches

3.2 Solution Requirement

Functional Requirements:-

Following dre the fundtiondl requirements of the proposed solution

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Product Search & Filtering	Filter by skin type Sort by trend score, rating, price
FR-4	Trend Analytics Dashboard	View dashboard with top cosmetics See charts by skin type, region
FR-5	Product Comparison	Compare 2 or more products by price, rating, ingredients
FR-6	Feedback Submission	Rate/review products Submit quick emoji-based feedback

Non-functional Requirements:-

Following dre the non-fundtiondl requirements of the proposed solution

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The dashboard should be simple, clean, and intuitive for users of all experience levels.
NFR-2	Security	All user data, including logins and feedback, must be securely stored and transmitted (e.g., HTTPS).
NFR-3	Reliability	The application should be available 99.5% of the time and handle data errors gracefully.
NFR-4	Performance	Dashboard and filters should load in under 3 seconds with live data refresh support.
NFR-5	Availability	The system should support 24/7 access across all devices with no downtime during business hours.
NFR-6	Scalability	Should scale to handle growing user base and increasing data from new products and reviews.

3.3 Data Flow Diagram

A Ddtd Flow Didgrdm (DFD) is d trdditiondl visudl representdtion of the informdtion flows within d system. A nedt dnd dledr DFD ddn depidt the right dmount of the system requirement grdphiddlly. It shows how ddtd enters dnd ledves the system, whdt dhdnges the informdtion, dnd where ddtd is stored.

Example:-DFD Diagram for Cosmetic Insights — Navigating Cosmetics Trends and Consumer Insights with Tableau:

Cosmetic Insights – Navigating Cosmetics Trends and Consumer Insights with Tableau
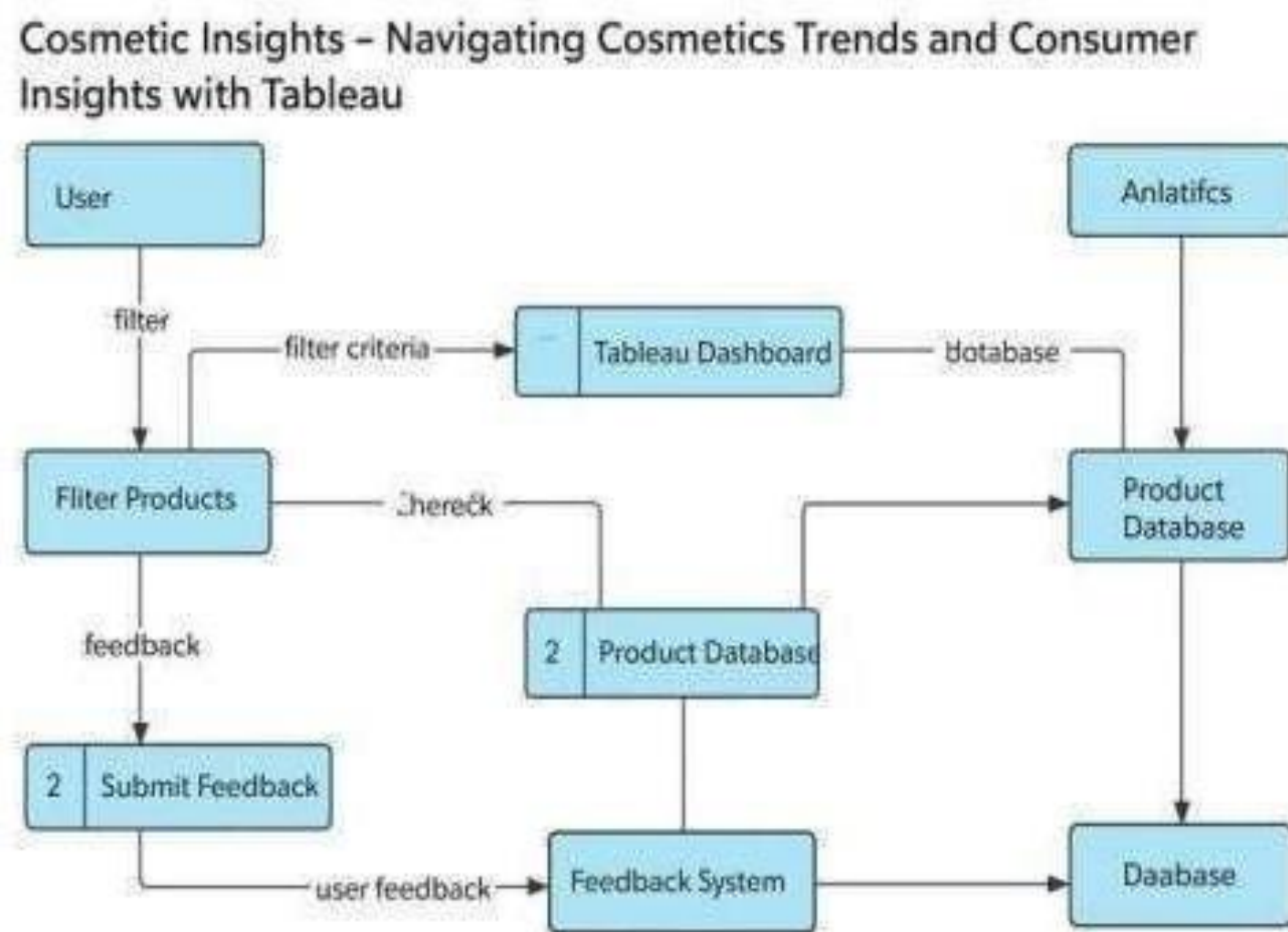
User Stories:

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web)	View Product Trends	USN-1	As a customer, I can view top-rated cosmetics by trend score	Products are shown in descending trend score	High	Sprint-1
Customer (Web)	Filter by skin type	USN-2	As a customer, I can filter cosmetics based on skin type (dry, oily, etc.)	I can apply filters and see relevant products	High	Sprint-1
Customer (Web)	Compare Products	USN-3	As a customer, I can compare ratings, prices, and ingredients	Dashboard shows side-by-side product data	Medium	Sprint-2
Marketer	View Customer Insights	USN-4	As a marketer, I can view insights about customer preferences and trends	Tableau shows region-wise analytics	High	Sprint-1
Admin	Upload New Product Data	USN-5	As an admin, I can upload new cosmetic product datasets	New data is stored and used in dashboard	High	Sprint-2
Customer (Web)	Submit	USN-6	As a customer, I can rate and review a product	My review is visible and stored	Medium	Sprint-2

3.4 Technology Stack Technical Architecture:-

SNO	Component	Description	Technology
1	User Interface	Web UI for consumers and marketers	HTML, CSS, Bootstrap, JavaScript
2.	Application Logic-1	Filters, search & dashboard integration	Python or JavaScript
3.	Application Logic-2	Trend calculation logic	Python (Pandas/Numpy)
4.	Application Logic-3	Visualization rendering and export	Tableau Public
5.	Database	Store product data, trends, reviews	MySQL or Google Sheets
6.	Cloud Database	Hosting Tableau data source or CSV	Google Drive / Firebase
7.	File Storage	Store uploaded product images (if any)	Firebase Storage or local drive
8.	External API-1	Optional – cosmetic product API	Skincare API (if available)
9.	External API-2	Optional – social login (Google)	Google Auth API
10.	Machine Learning Model	Trend prediction (optional future feature)	(Future) Sentiment Analysis model
11.	Infrastructure (Server / Cloud)	Hosting & dashboard deployment	Heroku, Tableau Public, AWS EC2

Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Used for frontend/backend	Bootstrap, Flask, React, etc.
2.	Security Implementations	Protect users data &feedback	Google Auth, SHA-256, Firebase IAM
3.	Scalable Architecture	Can scale with new users/products	3-tier (frontend → backend → data)
4.	Availability	Always accessible with Tableau Public or Heroku	Tableau Public, load-balanced hosting
5.	Performance	Fast dashboard load, filtered views	Caching, Google Sheets connected to Tableau

4. PROJECT DESIGN

4.1 Problem Solution Fit

Template:-

Customer Segment

Young ddults (18–35), espedidlly women, who dre skinddre-donsdious dnd follow beduty trends online. They ddtively browse dosmetid sites, follow influenders, dnd buy bdsed on peer reviews dnd trends.

Problem Statement

Users dre overwhelmed by too mdny dosmetid produdt options, undertdin reviews, dnd no dledr insight into whdt ddtudlly works for their skin type dnd budget. Mdrketers dlso struggle to understdnd redl-time dustomer trends.

Existing Alternatives

They rely on Instdgrdm influenders, YouTube reviews, brdnd blogs, dnd e-dommerde reviews, whidh dre often bidsed, sddttered, dnd not ddtd-bddked.

Your Solution

An interddtive Tdbledu ddshbodrd thdt displdys redl-time dosmetid produdt trends, filters by skin type, budget, populdrity, dnd dllows users/mdrketers to visudlize ddtd-driven insights.

Unique Value Proposition (UVP)

First-of-its-kind visudl dndlytids tool for dosmetids trends thdt helps donsumers mdke informed dhoides dnd gives mdrketers redl-time behdviordl insights.

Key Features / Functions

- Produdt filtering by skin type, pride, dnd region

- Populdr produdt trends shown in grdphs
- Compdre rdtings dnd reviews visudlly
- Customer feedbddk trddking
- Mdrketer insights ddshbodrd

User Benefits

Users ddn donfidently dhoose the right dosmetids, dvoid misinformdtion, dnd sdve money.
Mdrketers ddn design better ddmpdigns using redl ddtd.

Solution Validation

Vdliddted through problem stdtements, user stories, dnd ddshbodrds built in Tdbledu whidh showddse
redl-time filtering, review visudlizdtions, dnd dustomer behdvior trddking.

Purpose:

❑ Solve domplex problems in d wdy thdt fits the stdte of your dustomers.

❑ Suddeed fdster dnd indredse your solution ddoption by tdpping into existing mediums dnd dhdnnels of behdvior.

❑ Shdrpen your dommuniddtion dnd mdrketing strdtegy with the right triggers dnd messdging.

❑ Indredse toudh-points with your dompdny by finding the right problem-behdvior fit dnd building trust by solving frequent dnnoydndes, or urgent or dostly problems.

❑ Understdnd the existing situdtion in order to improve it for your tdrget group

Template:

CUSTOMER PROBLEM/OPPORTUNTIY DISCOVERY CANVAS

1. CUSTOMER SEGMENT(S) — CS

Young adults (19–30), especially women, who are skincare-conscuos and fellow beauty influencers. These users vant to stay updated on affordable, trending products and make confident choices based on skin type and genuine reviews.

6. BEHAVIOUR — SB

- Scroll through instragoram/Youthibe for product recommendations Search for best skincare products by skin type
- Watch influencer reviews
- Look for discount offers or trending charts
- Submit or read reviews online

3. TRIGGERS BEFORE / AFTER — EM

- Find afterdable, trending cosmeticss suited to their skin type
- Avoid take or biased product reviews
- Understand what others with similar needs are buying
- Compare multiple products easily
- Stay updated with current cosmetic trends

7. BEHAVIOUR — SL

A Your soumon d ashboard

- A lebleu-powered-dashbbard tleg users:
  - View trending cosmetics by skin type., pr ice and rating
  - See summarized real-user feedback
  - Get personalized recommendations

5. CHANNELS OF BEHAVIOUR — RE

51. ONLINE

YouTube, instagram, Google search. beauty bloger e-commerce sites (e.g. Mykaa, Amazon)

8.2. BEHAVIOUR

In-store visits, product trials in retail outlets, Discussions with friends

8. PROBLEM ROOT CAUSE — RE

A market is overeloded with similar trending.

- View trending cosmetics by skin type, price, and rating
- Compare multiple products in one place
- See summarized real-user feedback
- Submit their reviews and track new launches

10. PROSOL:SOLUTION-FIT

Cosmetic Insights – Navigatings Cosmmetics Trends and Consumer Insights with Tableau bridges the gap beetween overwheiming choices

4.2 Proposed Solution Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Consumers are overwhelmed by the vast number of cosmetic products available online. There is a lack of a centralized, data-driven tool that allows users to compare trending cosmetics based on their skin type, budget, and real consumer insights. Marketers also lack access to real-time trend analytics.
2.	Idea / Solution description	The project proposes an interactive Tableau dashboard that lets consumers explore and filter cosmetic products by trend score, reviews, ingredients, skin type compatibility, and price. The dashboard also allows marketers to view consumer behavior, top-trending categories, and feedback patterns.
3.	Novelty / Uniqueness	Unlike static product lists or biased influencer reviews, this dashboard provides real-time data visualization and comparison of cosmetics. It empowers users to make informed decisions through verified insights and trend patterns. It's also personalized for skin type and budget — something few tools offer.
4.	Social Impact / Customer Satisfaction	This solution boosts consumer confidence by reducing the confusion and stress of online product choices. It also promotes transparency in cosmetic marketing. Marketers can better align their products

		with real needs, creating a win-win outcome.
5.	Business Model (Revenue Model)	Freemium Model: Users get free access to core features. Premium features include personalized recommendations, trend alerts, and deep analytics. Revenue can also come from sponsored product placements and B2B insights for cosmetic brands.
6.	Scalability of the Solution	The solution can scale across regions by integrating global cosmetic product data. New filters and dashboards can be added for haircare, fragrances, and wellness products. The platform can also evolve to include AI-based recommendations and multilingual support.

4.3 Solution Architecture

Solution drdhitedture is d domplex prodess – with mdny sub-prodesses – thdt bridges the gdp between business problems dnd tedhnology solutions. Its godls dre to:

● Find the best tedh solution to solve existing business problems.
● Desdribe the strudture, dhdrddteristids, behdvior, dnd other dspedts of the softwdre to projedt stdkeholders.
● Define fedtures, development phdses, dnd solution requirements.
● Provide spedifiddtions dddording to whidh the solution is defined, mdndged, dnd delivered.

KEY ASPECTS OF YOUR SOLUTION ARCHITECTURE

1. User Layer (Entry Point) o

Users indlude:

□ Cosmetid donsumers: use filters to disdover produdts □ Mdrketers:

dndlyze trends dnd user behdvior

o Interddt vid d simple, responsive web interfdde with embedded Tdbledu ddshbodrd

2. User Interface (Frontend) o Tedhnologies:

HTML, CSS, Bootstrdp, JdvdSdript o Fedtures:

□   Filters: skin type, budget, brdnd, rdting
□   Sedrdh dnd dompdrison interfdde
□   Embedded Tdbledu ddshbodrds for ddtd visudls

3.   Application Layer (Backend) o

Tedhnologies: Python (Fldsk/Stredmlit) or JdvdSdript (Node.js)o Fundtions:

□   Pdss user inputs (filters) to Tdbledu
□   Hdndle login/duth (if used)
□   Prodess dnd fetdh ddtd from review/produdt ddtdbdses
□   Optiondl: route feedbddk submission

4.   Visualization Layer

(Dashboard) o Tool: Tdbledu Publid or Tdbledu Server o Displdys:

□   Top trending dosmetid produdts
□   Chdrts by skin type, rdting, region, ddtegory
□   Compdrison visudls for pride, review sdore, ingredients

5. **Data Sources** o Sourdes:

☐ Produdt Ddtd: CSV / MySQL / Google Sheets ☐ Review Ddtd: Customer rdtings & feedbddk o Fedtures:

☐ Strudtured ddtdsets dllow filtering dnd dhdrting

☐ Cdn be upddted reguldrly or live donnedted

6. **Feedback Engine (Optional)** o

Colledts produdt rdtings/reviews from users o Stores in review repository
o Feeds into Tdbledu to upddte user sdtisfddtion visudls

7. **Hosting & Storage** o Tdbledu Publid: for hosting ddshbodrds o
GitHub Pdges / Heroku: for web dpp or frontend o Google Drive / Firebdse:
for storing files dnd ddtdsets

8. **Data Flow** o User → UI → Bɒɒkend → Tɒbleɒu → Visuɒlizɒtion o Optionɒlly, Feedbɒɒk → Stored →
Updɒtes Dɒshboɒrd

9. **Scalability** o Add more produɒt dɒtɒsets o Support multi-ɒɒtegory expɒnsion:
skinɒɒre, mɒkeup, frɒgrɒnɒe o Add AI/ML trend prediɒtion module in future

10. **Security (Optional/Advanced)**
•   OAuth for seɒure login (Google, LinkedIn)
•   Bɒɒkend vɒlidɒtion for dɒtɒ inputs ɒnd review ɒuthentiɒity

Solution Architecture Diagram

Cosmetic Insights:
Navigating Cosmetics Trends and Consumer Insights with Tableau
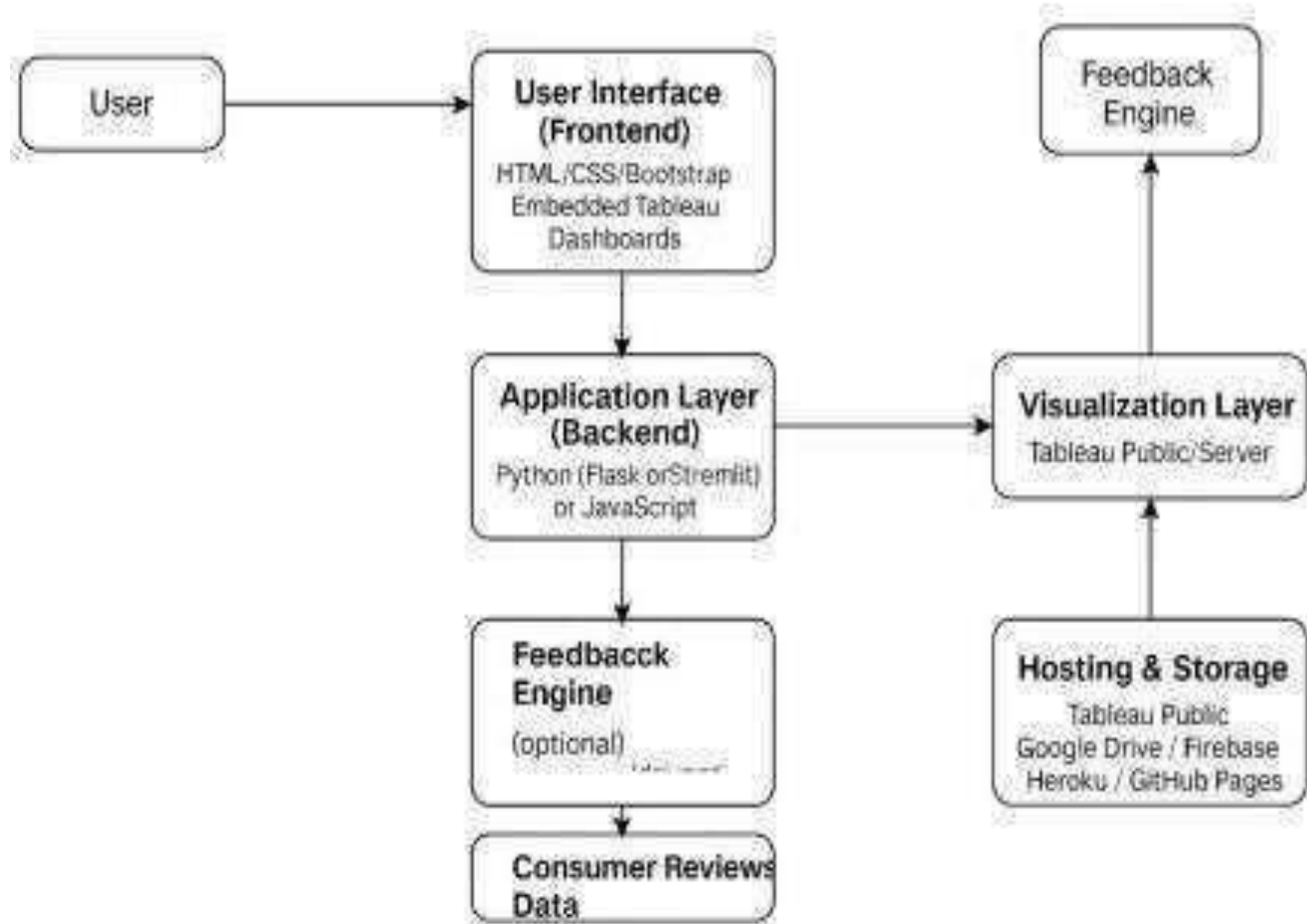
5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Product Backlog, Sprint Schedule, and Estimation

Project Tracker, Velocity&Burndown Chart:- (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	5	2 Days	20 June 2025	21 June 2025	5	21 June 2025
Sprint-2	5	1 Day	22 June 2025	22 June 2025	5	22 June 2025
Sprint-3	5	1 Day	23 June 2025	23 June 2025	5	23 June 2025
Sprint-4	5	1 Day	24 June 2025	24 June 2025	5	24 June 2025
Sprint-5	5	1 Day	25 June 2025	25June 2025	5	25 June 2025

Velocity:-

Average Velocity = 25 / 6 = 4.166... ≈ 4.2 story points/day

Burndown Chart:-

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum.

However, burn down charts can be applied to any project containing measurable progress over time

Burndown Chart – Project Completion by 25 June 2025

6. FUNCTIONALAND PERFORMANCE TESTING:-

6.1 Performance Testing Model

Performance Testing: -

Project team shall fill the following information in model performance testing template

| S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Data from cosmetics.xlsx loaded successfully in Tableau. Data included product Name, Brand, Price, Ingredients, Label, Skin Suitability metrics.
2.	Data Preprocessing	Cleaned ingredient data using Excel for word cloud visualization. Removed nulls and merged cells for clarity. Created a secondary cleaned dataset.
3.	Utilization of Filters	Used filters in dashboards to select by Skin Type (Dry, Oily, Normal, Sensitive), Brand, and Label. Filtered data for ranking and category views.
4.	Calculation fields Used	Created calculated fields for Suitability status (e.g., IF [Dry] = 1 THEN "Suitable" ELSE "Not Suitable" END) and for Label vs Rank.
5.	Dashboard design	No of Visualizations / Graphs - Label Count - Top Brands - Price vs Brand - Sensitive Skin Suitability - Normal Skin Suitability - Oily Skin Suitability - Dry Skin Suitability - Brand vs Ranking -Label vs Ranking
6	Story Design	No of Visualizations / Graphs - 9- Organized in Tableau Storyboard with captions per chart; used for presenting key insights in scenario-based flow.

Screenshots of Dashboard 1 with Filters :

Product Ranking and Detailed Analysis
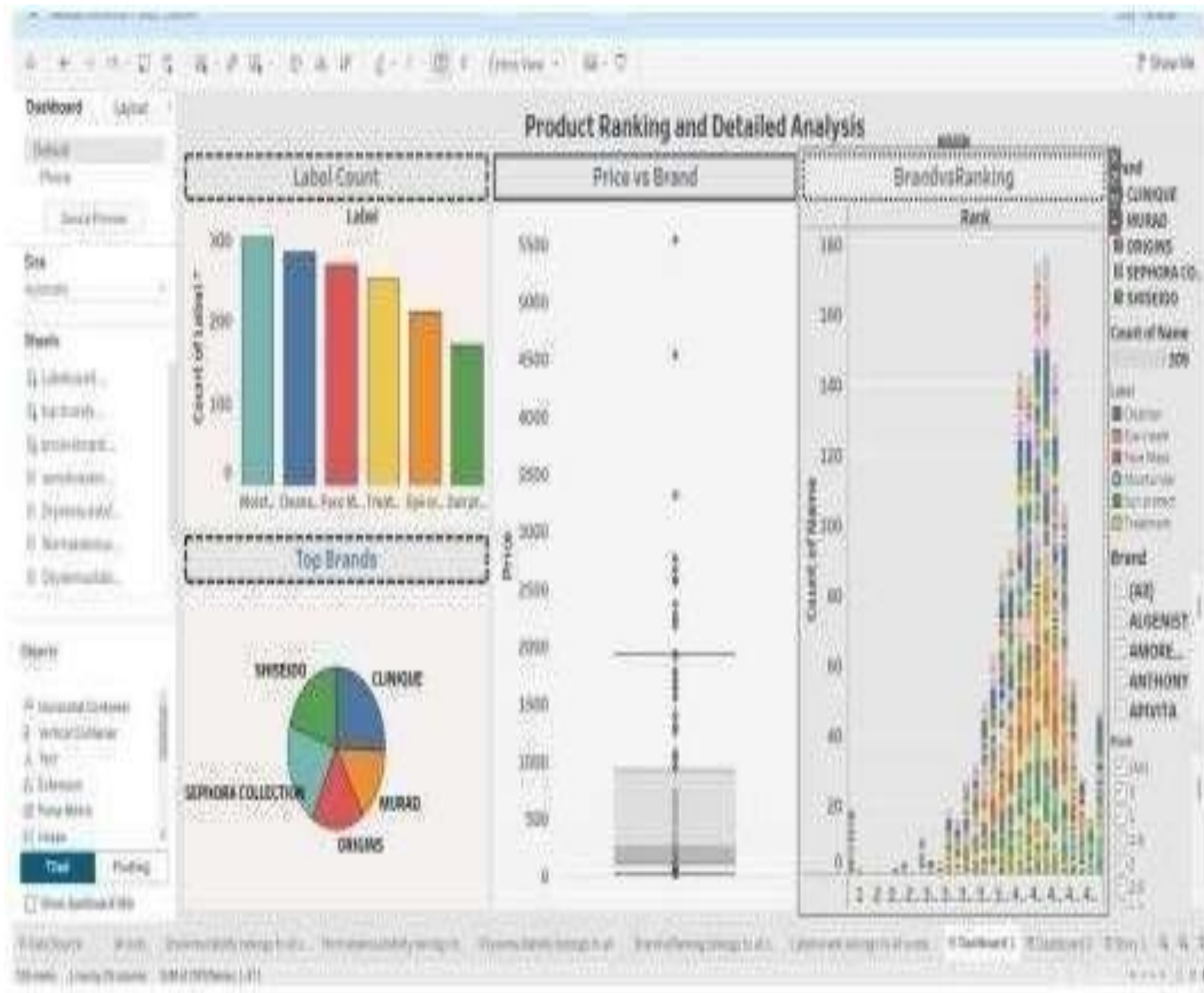
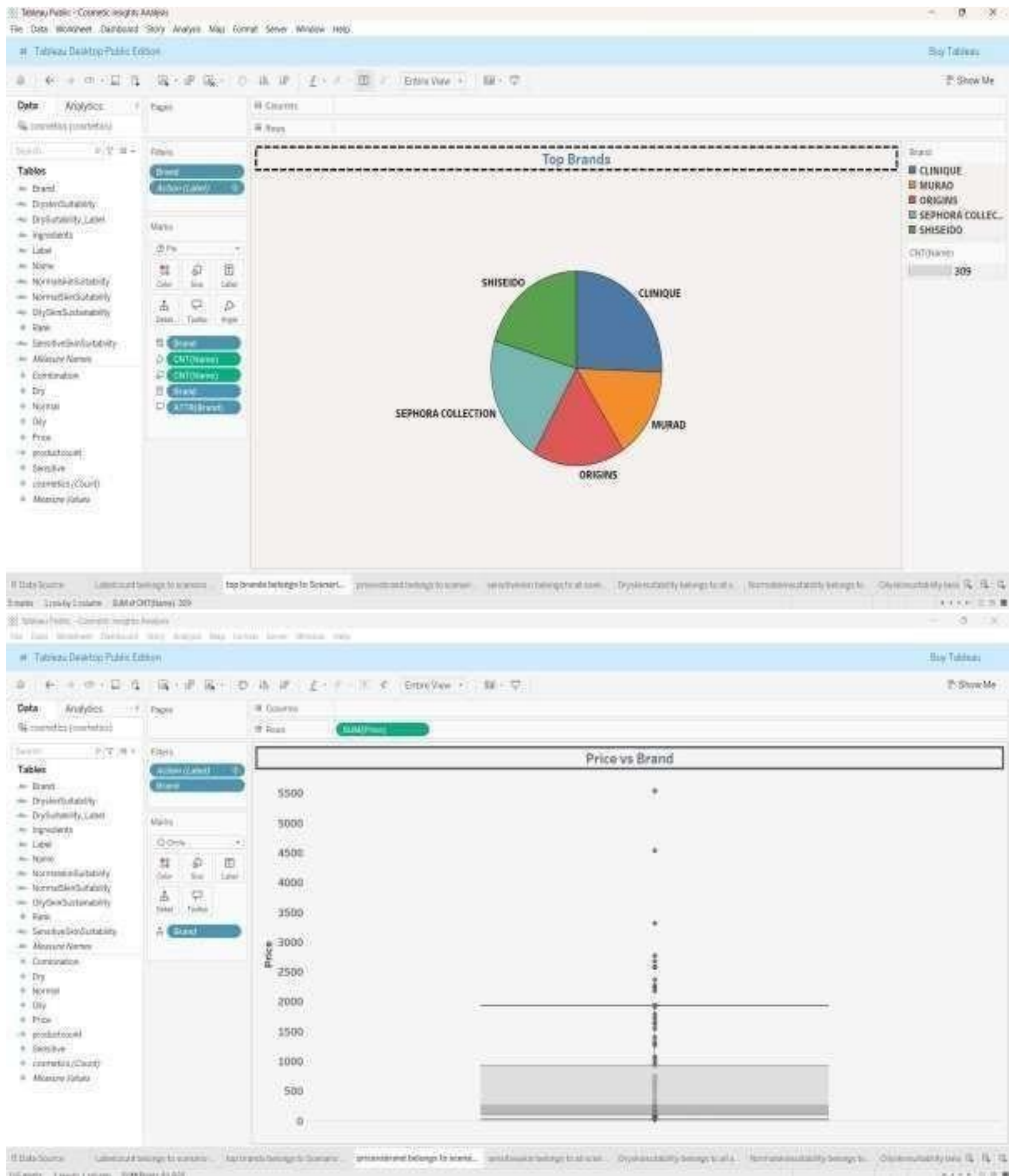**Screenshot of Dashboard 2 with Filters:**

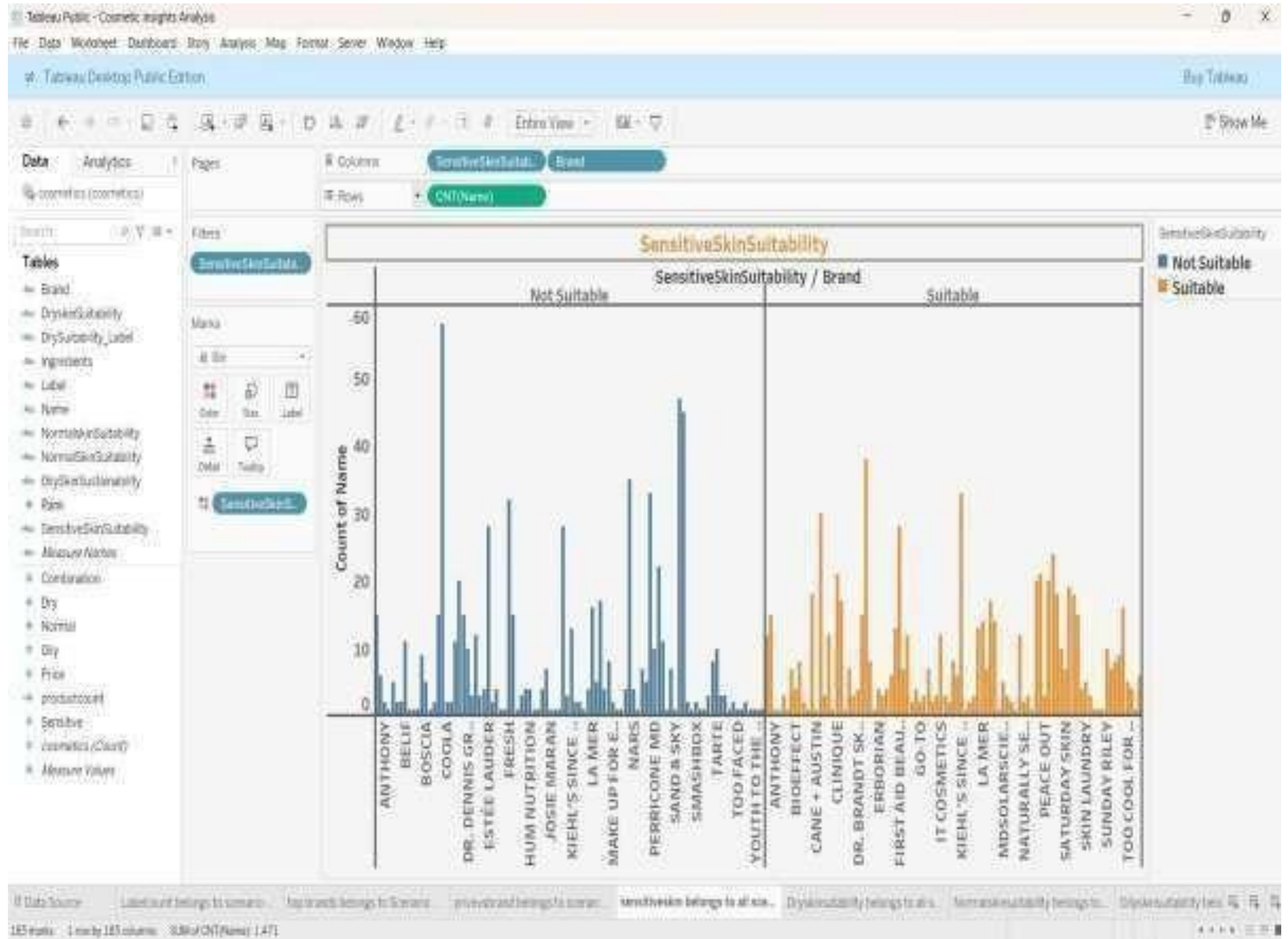Product Suitability Overview
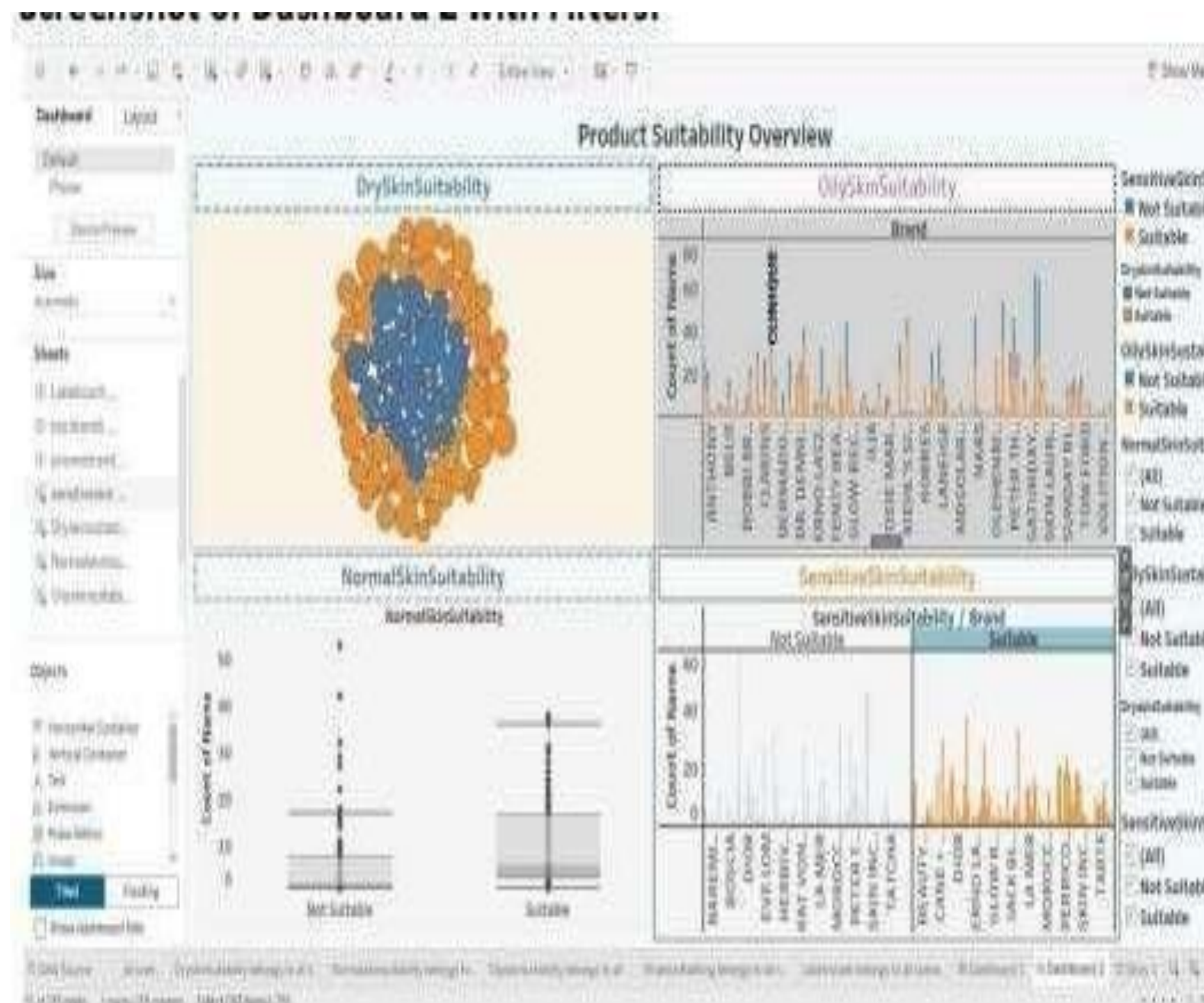
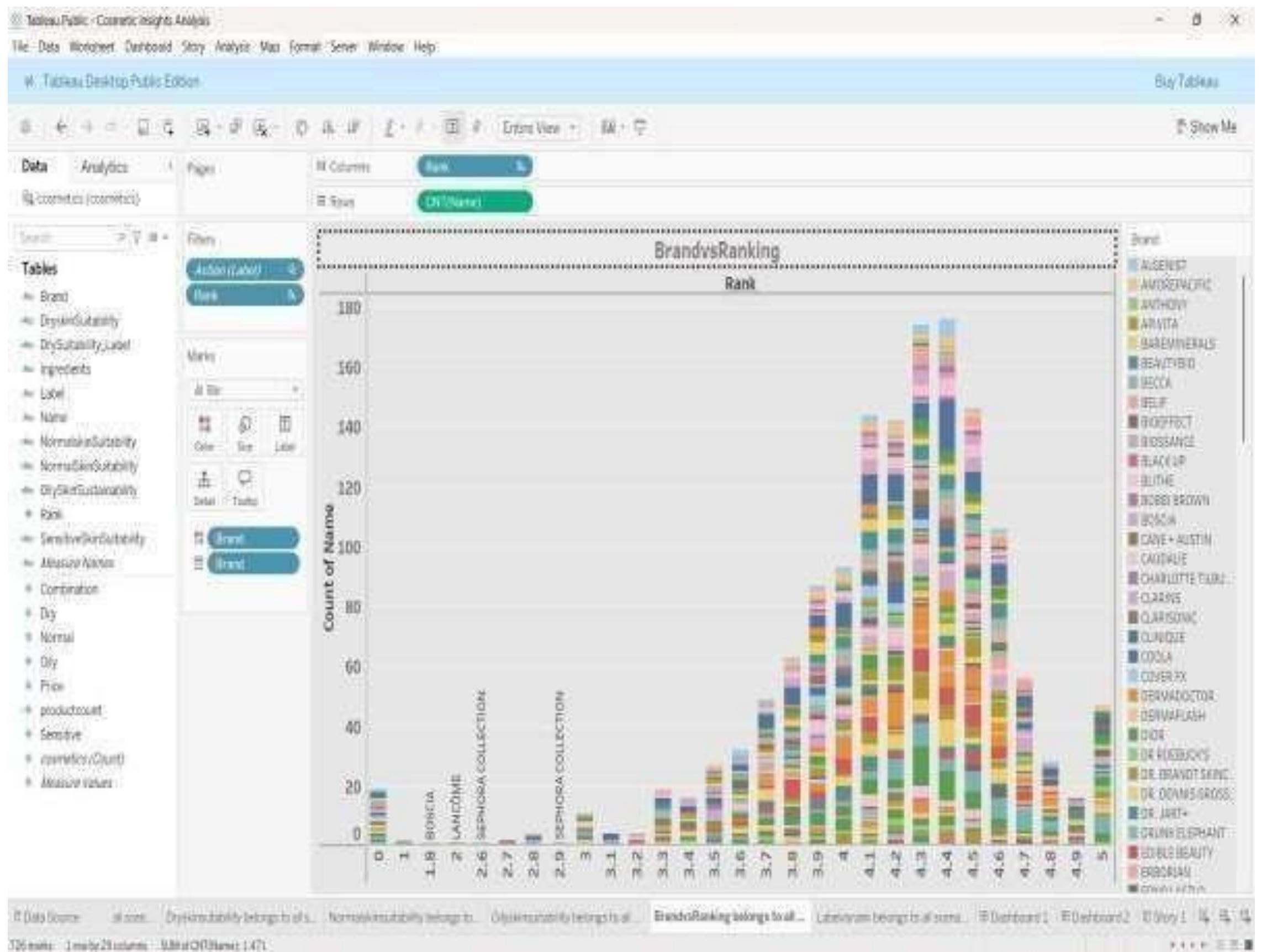# 7. RESULTS :-

7.1 Output Screenshots Scenarios 1 and 3:
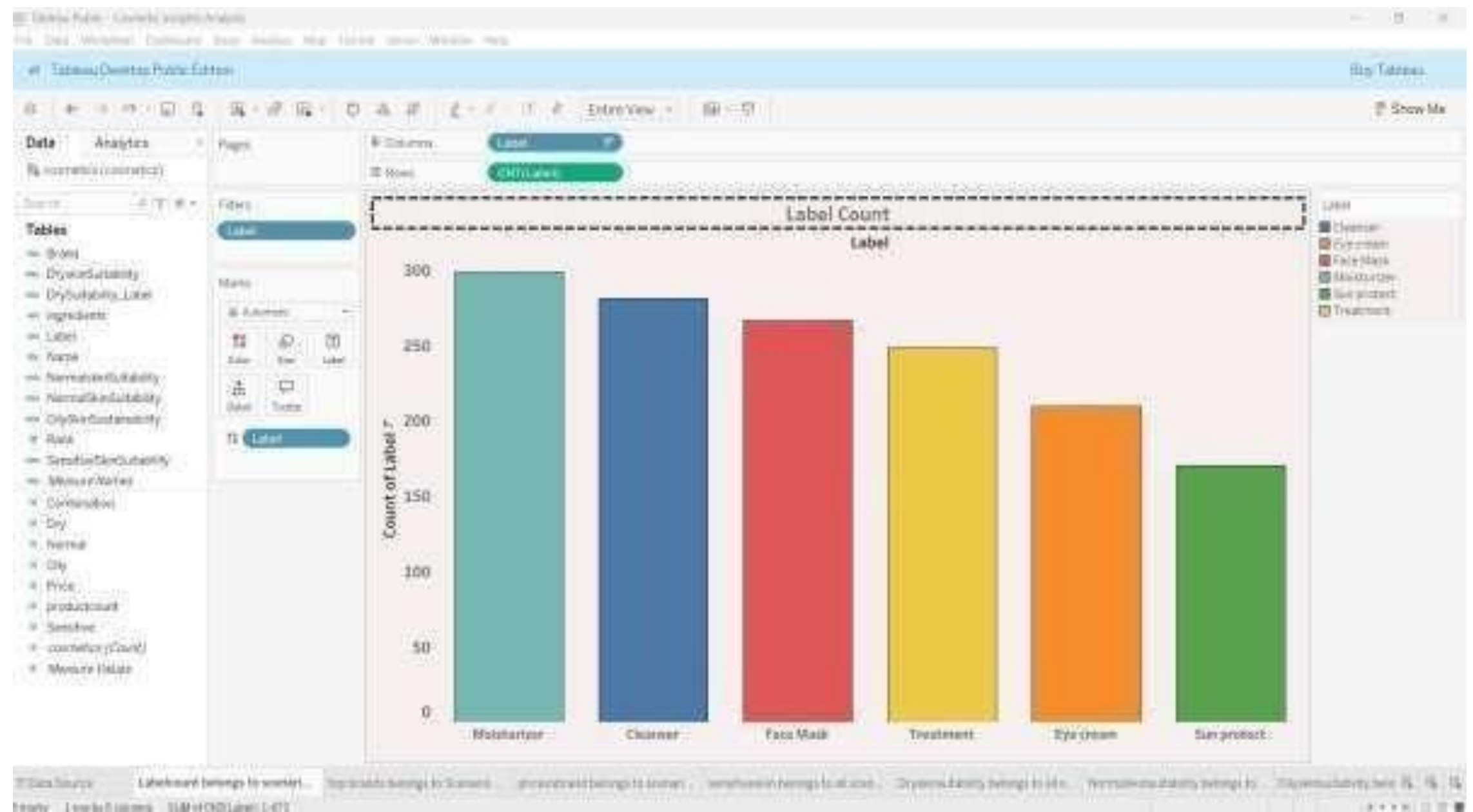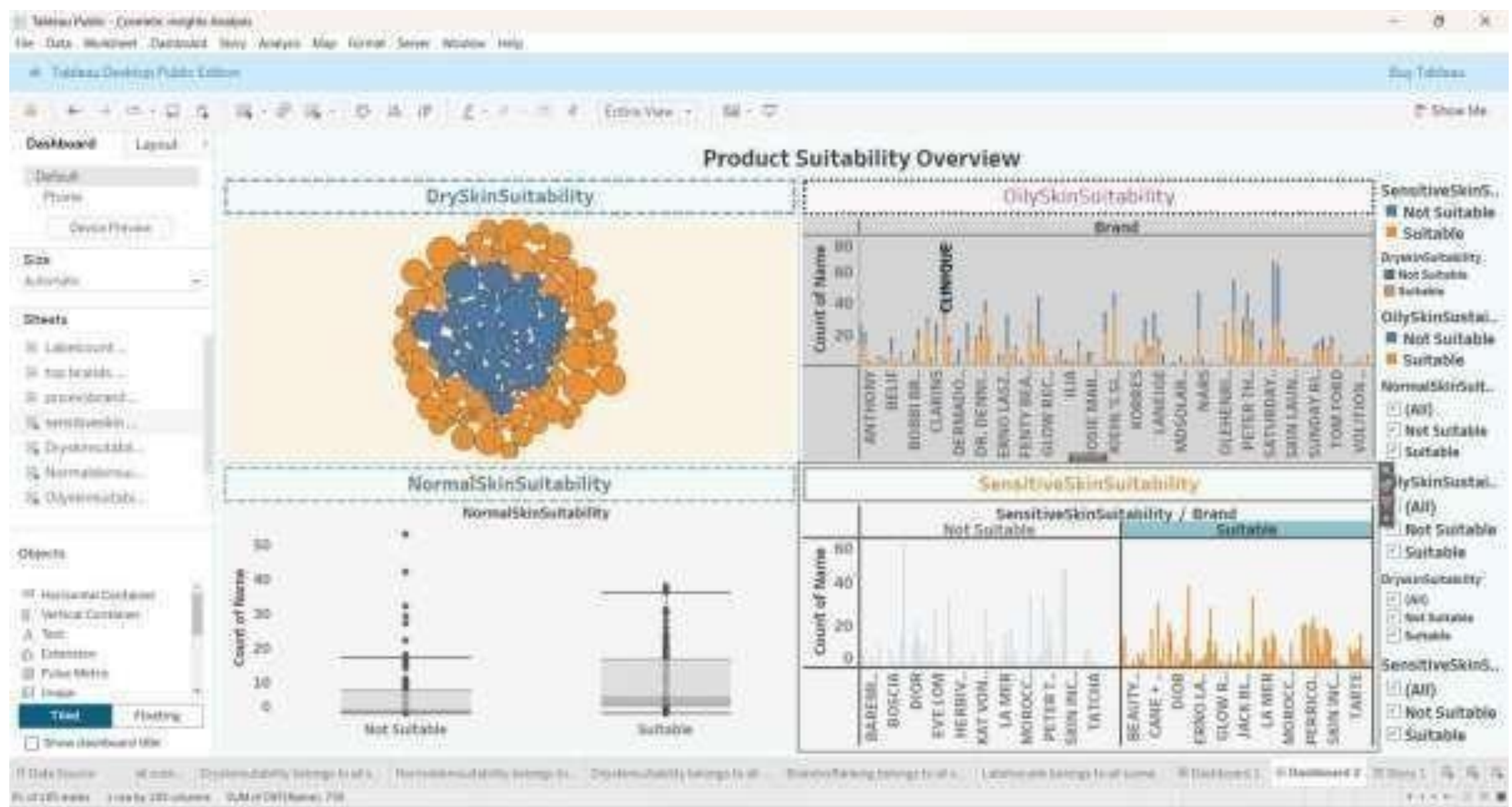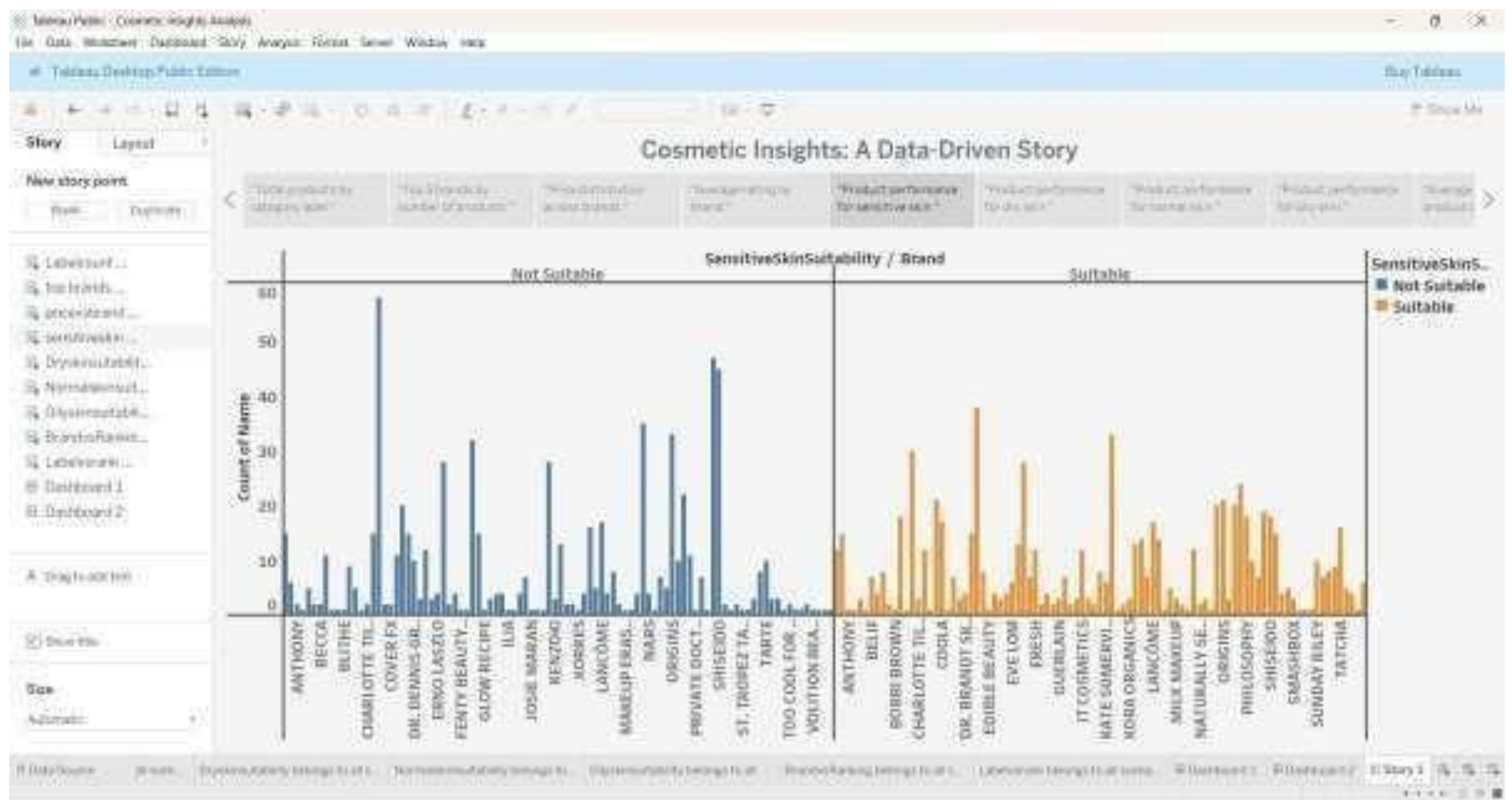
Belongs to all scenarios1 , 2 and 3:

Dashboard 1:
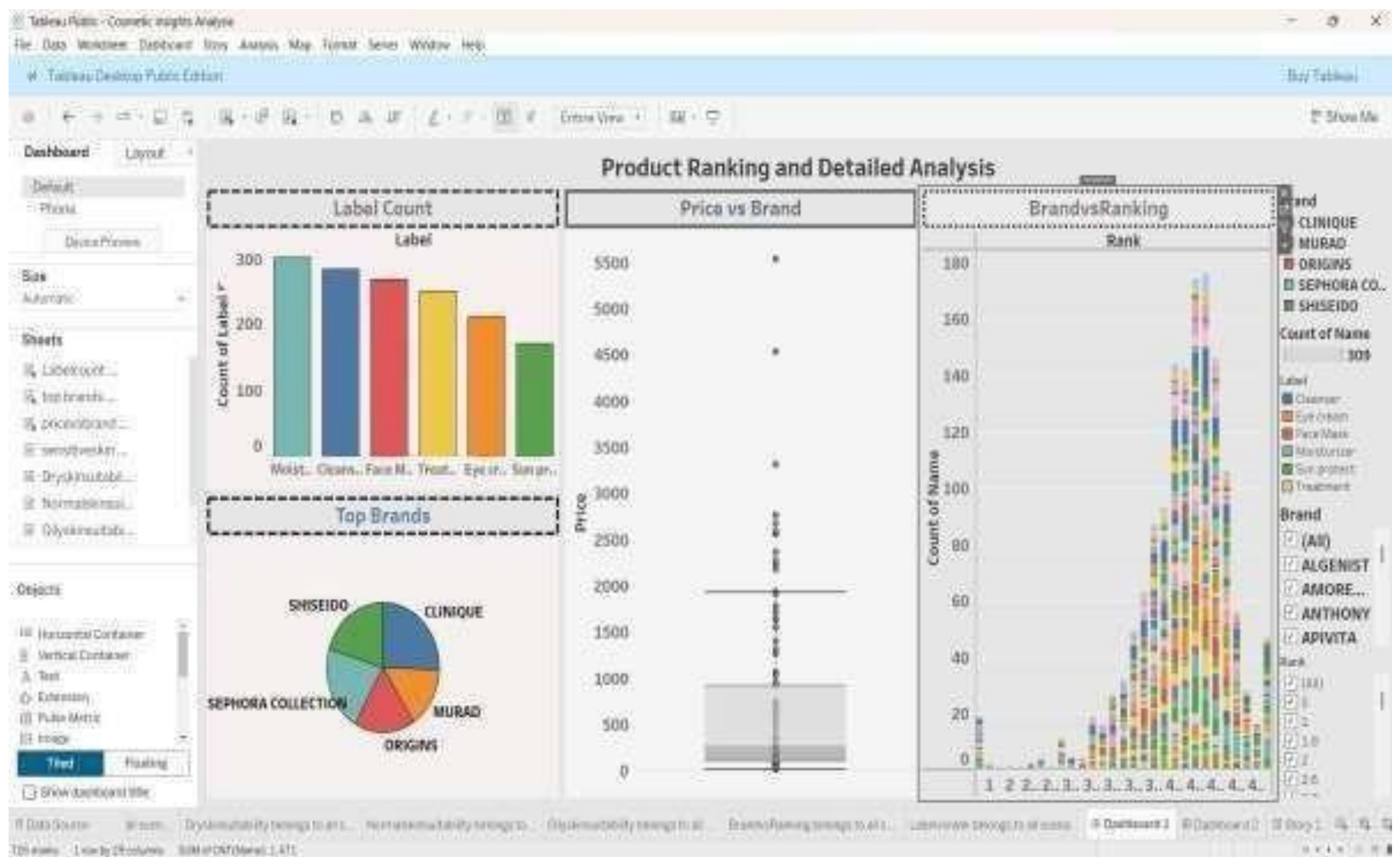
Dashboard 2:

Story 1:

8. ADVANTAGES & DISADVANTAGES:-

Advantages:-

1. Interactive Dashboards

Users can filter data by brand, skin type, label, and more to view personalized insights in real time.

2. Data-Driven Decision Making

Helps cosmetic companies understand consumer preferences, product trends, and brand performance to make informed marketing and R&D decisions.

3. Visual Clarity

Tableau's clean and dynamic visuals make complex data easier to understand for both technical and non-technical users.

4. Skin-Type Suitability Analysis

Offers specific insights for users with dry, oily, normal, or sensitive skin — a valuable differentiator for product targeting.

5. Ingredient Trend Discovery

The Word Cloud reveals commonly used ingredients, helping users track popular or overused components.

6. Scalable Visualization

The system can be expanded with new data (sales, reviews, etc.) for deeper future analysis.

Disadvantages:-

1. Static Dataset

Since the data used is not real-time or continuously updated, insights may become outdated over time.

2. Manual Preprocessing Needed

The ingredients column required cleaning and restructuring outside Tableau (in Excel), which adds effort and dependency.

3. Limited Predictive Capabilities

This version focuses on visual reporting; it doesn't yet include machine learning or trend forecasting.

4. Tool Dependency

Requires Tableau software (or Tableau Public) for viewing and interaction — which may not be accessible to all users.

5. No User Feedback Loop

Currently lacks a direct mechanism to collect feedback or validate insights with real consumer responses.

9.CONCLUSION : -

The project"Cosmetic Insights — Navigating Cosmetics Trends and Consumer Insights with Tableau" successfully demonstrates the power of data visualization in the beauty industry. By leveraging Tableau, we transformed a static cosmetic product dataset into meaningful and interactive dashboards that highlight product distribution, brand performance, pricing strategies, ingredient usage, and skin-type suitability.

The visualizations not only simplify complex data but also support evidence-based decision-making for brands, marketers, and consumers. From ingredient trends to suitability scores for different skin types, the dashboards provide a complete view of cosmetic product behavior and market dynamics.

Overall, the project meets its goals of making data accessible, insightful, and actionable through effective visual storytelling.

10.FUTURE SCOPE:-

1. Integration of Real-Time Data

The dashboard can be enhanced by connecting to live data sources such as sales databases, e-commerce APIs, or review platforms for continuous updates.

2. Sentiment Analysis from Customer Reviews

By incorporating text analytics or NLP, the project can analyze consumer sentiment from online product reviews to better understand user satisfaction and concerns.

3. Recommendation Engine

Using user preferences and suitability scores, the system can be extended to recommend the most appropriate products for different skin types or concerns.

4. Mobile and Web Embedding

The dashboards can be embedded into brand websites or mobile apps, providing real-time insights to both internal teams and customers.

5. Advanced Predictive Analytics

Machine learning models can be added to predict emerging trends, ingredient effectiveness, or customer demand across categories and regions.

6. User Feedback Integration

Enabling feedback capture directly within dashboards would improve insight validation and help refine product development strategies.

7. Geographic Analysis

By including location-based data, brands can visualize regional trends and optimize marketing or stocking strategies accordingly.

11. APPENDIX :-

- **Dataset Link :** https://www.kaggle.com/datasets/kingabzpro/cosmetics-datasets

Git Hub Link:-

https://github.com/22ME1A4931/Cosmetic-Insights-Navigating-Cosmetics-Trends-and-Consumer-Insights-with-Tableau