

Enhancing Customer Satisfaction at Shopzilla Through Data Analysis

A Hands-On Data Analytics Project

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Tools Used: BigQuery (SQL), Tableau

Why This Project?

📌 Content:

- I wanted to work on a project that mimics real-world challenges in e-commerce.
- Customer satisfaction is a key factor in retention, so I decided to analyze what drives complaints and how businesses can improve.
- **Main Goal:** Identify the key drivers of low CSAT and suggest data-driven improvements.



The Business Problem (ASK Phase)

- **What's happening?**  Shopzilla's CSAT scores are dropping due to rising customer complaints.
- **Main Questions:**
 1. What are the **top reasons for customer complaints**?
 2. How do **agent performance & response time affect CSAT**?
 3. What **actions** can be taken to improve satisfaction?

Key Stakeholders

Customer Support Managers	Operations Team	Executives & Strategy Team
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Data & Tools (PREPARE Phase)

- **Dataset:** Kaggle (85,907 rows, 20 columns)
- **Tools I Used:**
 - ✓ **BigQuery (SQL)** – Data extraction & cleaning
 - ✓ **Tableau** – Visualizing insights
 - ✓ **Google Data Analytics Process** – Structured problem-solving

The screenshot shows the BigQuery UI interface. On the left, the 'Find BigQuery Resources' sidebar lists various datasets and tables under 'project-1-449615'. The main area displays the contents of the 'cleaned_data_17' table. The table has 14 rows and the following schema:

Row	channel_name	category	remarks
1	Inbound	Cancellation	No remarks
2	Inbound	Cancellation	Good work ???
3	Inbound	Cancellation	No remarks
4	Inbound	Cancellation	No remarks
5	Inbound	Cancellation	No remarks
6	Inbound	Cancellation	No remarks
7	Inbound	Cancellation	No remarks
8	Inbound	Cancellation	Poor services
9	Outcall	Cancellation	Nice
10	Email	Cancellation	Your courier pa
11	Outcall	Cancellation	is not at all goo
12		Cancellation	courier delivery
13	Inbound	Cancellation	discontinue tha
14	Inbound	Cancellation	courier partner
			No remarks
			Pitiful service
			customer friend
			nothing. uGOD

Data Cleaning & Preprocessing (PROCESS Phase)

- **Main Issues Found:**

- Missing Values** → Handled with replacements ("Unknown"/"Unspecified")
- No Duplicates** found
- Time Format Issues** → Converted response time from minutes to hours
- Incorrect Timestamps** → Removed negative values

The screenshot shows a data analysis interface with two main sections. At the top, there is a query editor titled "Untitled Query" containing the following SQL code:

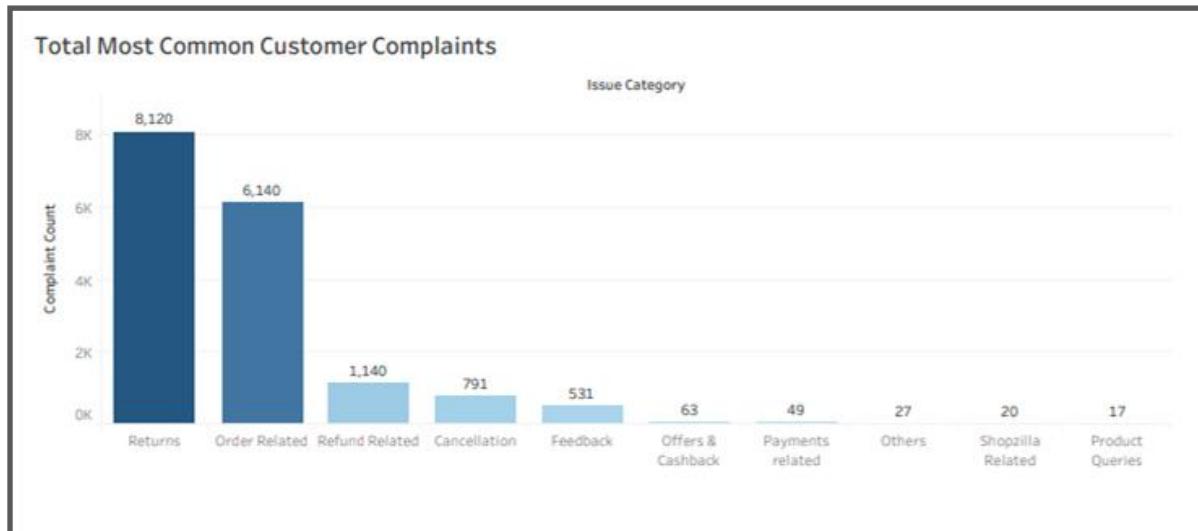
```
1 SELECT
2 COUNT(*) AS total_rows,
3 SUM(CASE WHEN `Order_Date_Time` IS NULL THEN 1 ELSE 0 END) AS missing_order_date,
4 SUM(CASE WHEN `Customer_City` IS NULL THEN 1 ELSE 0 END) AS missing_city,
5 SUM(CASE WHEN `Product_Category` IS NULL THEN 1 ELSE 0 END) AS missing_category,
6 SUM(CASE WHEN `Item_Price` IS NULL THEN 1 ELSE 0 END) AS missing_price
7 FROM `project-1-449815.shopzilla_analysis.customer_satisfaction_data`;
```

Below the query editor is a results table with three columns: "Agent Shift", "CSAT Score", and "Avg_Response_Time". The data is as follows:

Agent Shift	CSAT Score	Avg_Response_Time
Evening	5	-1339.0
Morning	1	-935.0
Evening	4	-731.0
Morning	1	-625.0
Split	1	-121.0
Morning	5	-583.0
Evening	4	-1101.0
Morning	5	-502.0
Afternoon	5	-807.0
Evening	4	-433.0
Morning	5	-919.0

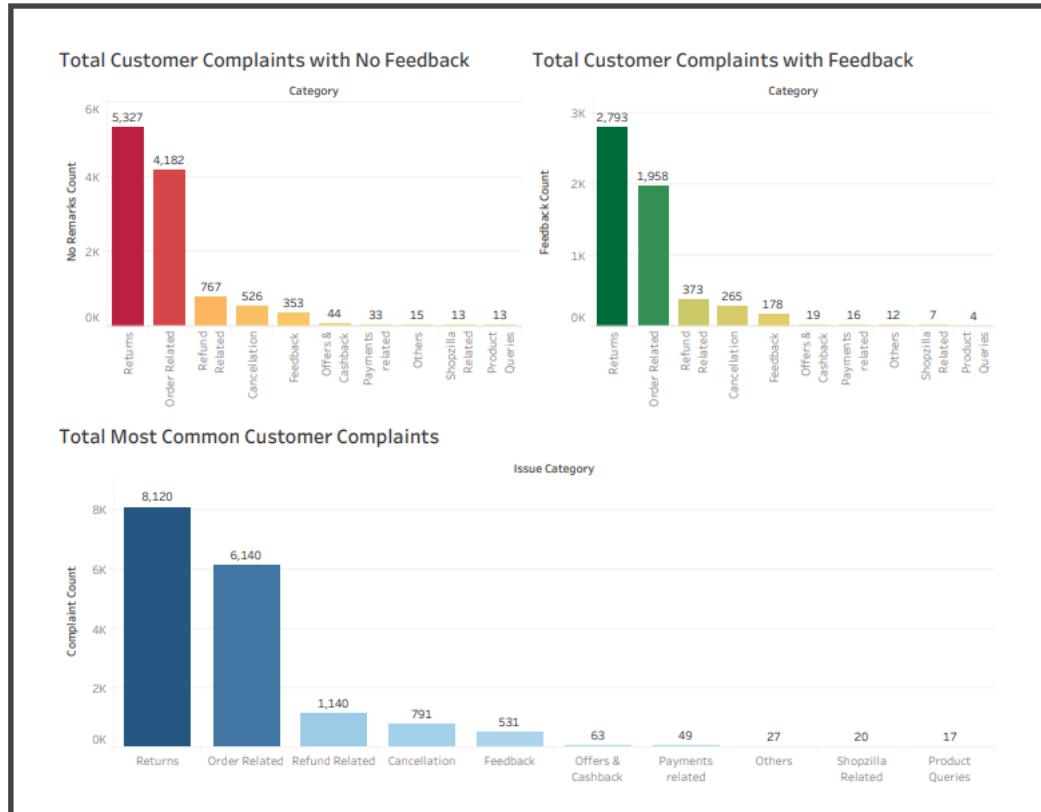
Key Findings – What Are Customers Complaining About?

- **Most Common Complaints:**
 - **48.1% → Returns Issues**
 - **36.4% → Order Issues**
- **Key Insight:** “Returns & order-related problems account for over 80% of all complaints. This suggests that product quality & logistics need improvement.”



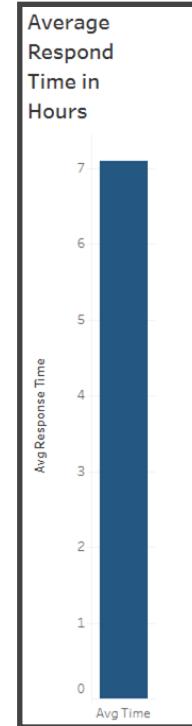
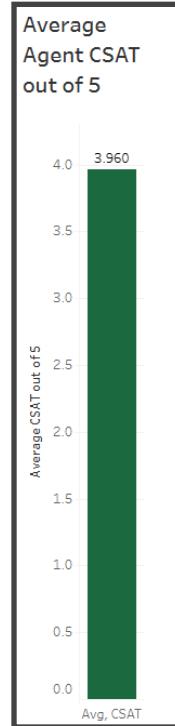
Why Are Customers Not Giving Enough Feedback?

- Many complaints lack customer remarks:
 - 65% of return complaints = "No feedback provided"
 - 68% of order complaints = "No feedback provided"
- What this means: "*Customers might not feel encouraged to leave detailed feedback, making it harder to fix specific issues.*"



Key Findings – How Fast Do Agents Respond? (CSAT Impact)

- Avg CSAT Score: ⭐ 3.96/5 (Decent, but room for improvement)
- Avg Response Time: ⏳ 7.09 hours (Below industry benchmark)
- Key Insight: Faster response times = higher CSAT.



Recommendations – Fixing Product & Logistics Issues

- ◆ **Better Quality Control** → Pre-shipping inspections & packaging checks
- ◆ **Faster Shipping** → Partner with **reliable** carriers, offer **real-time tracking**
- ◆ **Simplify Returns** → Clear policies, prepaid return labels



Recommendations – Customer Support & Feedback

📌 Content:

- ◆ **Monitor Response Times** → Reduce to <7 hours
- ◆ **Use AI for Faster Replies** → Automate common inquiries
- ◆ **Encourage Customer Feedback** → Incentives like **discounts/loyalty points**
- ◆ **Track Complaints Automatically** → AI-based categorization



Final Takeaways & Business Impact

📌 Key Takeaways:

- **Returns & order issues** = main drivers of CSAT decline
- **Faster response times** = happier customers
- **Small changes (better logistics & communication)** can have a big impact

✓ Expected Impact:

- **CSAT increase: +0.5 to 1 point**
- **More repeat customers, fewer complaints**