



Data Presentation

Fraud Analytics From Sales Calls Transcript



Prompt and Extracted Features

Your Prompt1:

Please analyze the provided sales call transcript and extract key business insights based on predefined categories. Identify the Agent Name, Customer Name, and Company Name mentioned in the conversation. Determine whether the customer has made specific inquiries by marking Product Inquiry, Service Inquiry, Return Inquiry, Refund Inquiry, and Technical Support Inquiry as 1 if mentioned and 0 if not. Identify customer issues such as Quality Issue, Trust Issue, Pricing Issue, Sizing Issue, Delivery Issue, or Other Issues, marking them as 1 if they appear in the conversation and 0 if they do not. Extract the solutions provided by the agent, including Product Information, Discount Offer, Customer Testimonials, or Escalation to a Manager, marking them as 1 if mentioned and 0 otherwise. Assess the Tone of the Agent and Tone of the Customer, categorizing them as Professional with 1, Sales-Oriented with 2, Apologetic with 3, or Neutral with 4 for the agent, and Neutral with 1, Skeptical with 2, Frustrated with 3, or Interested with 4 for the customer. Analyze Customer Sentiment and Agent Sentiment, classifying them as Positive with 1, Neutral with 2, or Negative with 3. Additionally, check for compliance and risk factors by determining whether the agent Requested Sensitive Information, whether the conversation Adhered to Regulatory Standards, and whether there is any indication of Fraudulent Activity, marking each as 1 for Yes and 0 for No. Ensure all extracted features align with the predefined categories and numerical representations for consistency and accuracy.

Your Prompt2:

Please analyze the provided sales call transcript and extract the following quantitative features based on the conversation. Calculate the total number of turns, which represents the total back-and-forth exchanges between the agent and the customer. Determine the total word count in the conversation, along with the individual word count for the agent and the word count for the customer. Identify the total number of questions asked, as well as the number of questions asked by the agent and the number of questions asked by the customer. Compute the speech ratio, which is the ratio of the number of words spoken by the agent to the number of words spoken by the customer. If a discount or any offer is given by agent and mark as 1 if given else 0 if not given. . Identify and count the number of unique product features discussed, such as "lightweight," "warm," or "sizing." Analyze the conversation for positive and negative keywords, counting the occurrences of words that indicate positive sentiment (e.g., "great," "helpful," "amazing") and words that indicate negative sentiment (e.g., "problem," "concerned," "issue"). Finally, determine the resolution status, assigning 1 if the issue was resolved (customer agreed or expressed satisfaction) and 0 if the issue remained unresolved (customer remained skeptical or did not confirm resolution or purchase). Ensure all extracted values are in numerical form and align with the defined categories for accuracy and consistency.

Extracted Features and Data Types

Feature	Data Type
Call ID	Numeric
Transcript	Text
Agent Name	Nominal
Customer Name	Nominal
Company Name	Nominal
Product Inquiry	Boolean
Service Inquiry	Boolean
Return Inquiry	Boolean
Refund Inquiry	Boolean
Technical Inquiry	Boolean
Quality Issue	Boolean
Trust Issue	Boolean
Pricing Issue	Boolean
Sizing Issue	Boolean
Delivery Issue	Boolean
Other Issue	Boolean
Solution Product Information	Boolean
Solution Discount Offer	Boolean

Feature	Data Type
Solution Customer Testimonials	Boolean
Solution Manager Escalation	Boolean
Tone of the Agent	Categorical
Tone of the Customer	Categorical
Customer Sentiment	Categorical
Agent Sentiment	Categorical
Requested Sensitive Information	Boolean
Adhered to Regulatory Standards	Boolean
Total Turns	Numeric
Total Word Count	Numeric
Agent Word Count	Numeric
Customer Word Count	Numeric
Total Questions	Numeric
Agent Questions	Numeric
Customer Questions	Numeric
Speech Ratio	Numeric
Discount Offer	Boolean
Unique Product Features	Numeric
Positive Word Count	Numeric
Negative Word Count	Numeric
Resolution Status	Categorical
Fraudulent Activity	Boolean

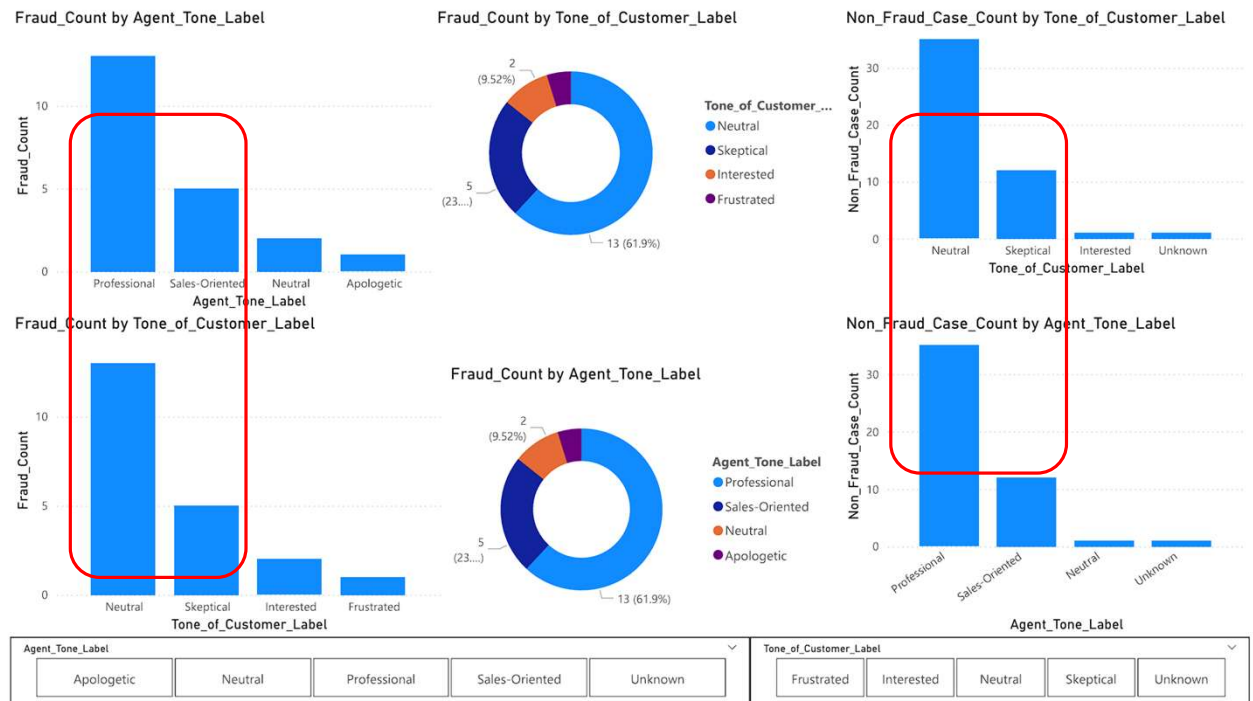
Call Overview

- Refund and Service and Tech Inquiries are primary fraud targets.
- Trust Issues account for 41.18% of fraud cases.
- Fraud Agents often escalate the issue to manager and do not give testimonials and discount
- Legitimate calls are more solution driven through product , testimonial and offers rather just escalation to manager
- Pricing Issue is also become important in legitimate calls ,Trust issue being the major one



Agents are always Professional while Customer are often Neutral and Skeptical

- Agents always have a professional and Sales Oriented Tone while Customers being Neutral and Skeptical during conversation a fraud call.
- Even in Legitimate Call the Tone has similar Trend
- Conclusion of fraud call drawn from tone of agent and customer may lead to biased result



Agents & Customers both have Negative Sentiment in Fraud Call

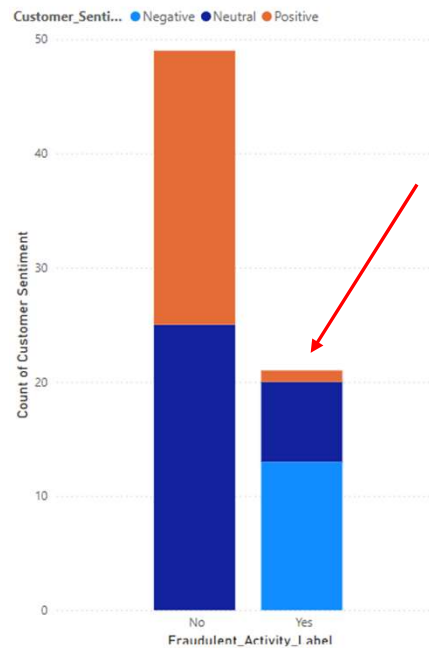
- **Fraud Calls:**

- In Fraud Calls Agents and Customer Both shows the negative sentiment
- Agent are more positive than customer in fraud call

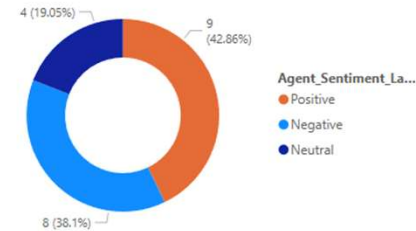
- **Non Fraud Calls:**

- In Legitimate Calls Agents are extremely positive and shows no negative sentiment
- Customer are also more neutral and positive too during the call

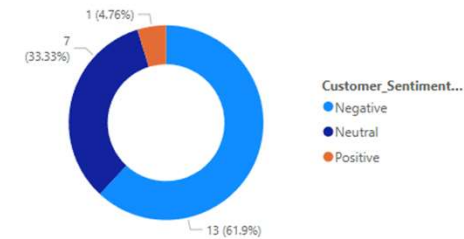
Count of Customer Sentiment by Fraudulent_Activity_Label and Customer_Sentiment_Label



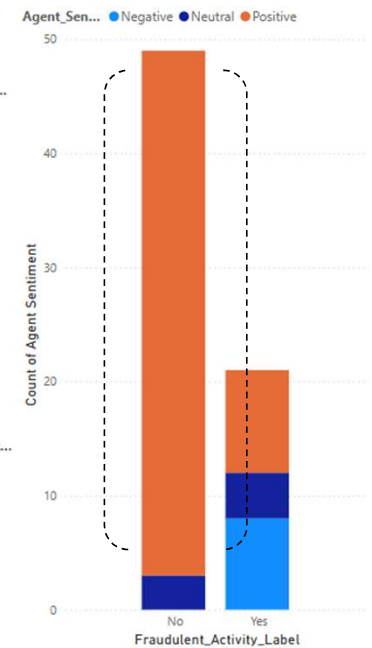
Fraud_Count by Agent_Sentiment_Label



Fraud_Count by Customer_Sentiment_Label



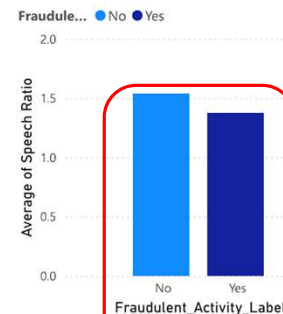
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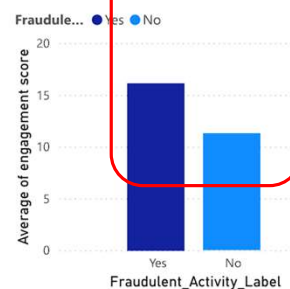
Fraud Call are more engaging and variable

- Agent tends to speak less relative to customer during a fraud call , contrary to our belief , the margin is thin , possible reasons could unbalanced outcome variable
- The Engagement score in Fraud Calls is significantly higher explaining that it is hard to convince Neutral and Skeptical Customers.
- The vAr in Speech Ratio and Engagement score is higher explaining the uncertainty , unstructured and unpredictableness in the fraud conversation, whereas the legit calls are more structured and follows a consistent pattern

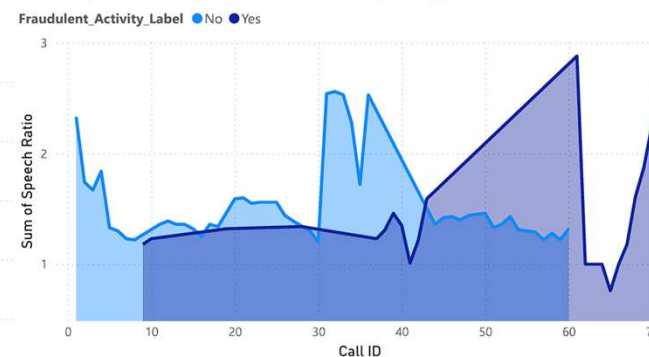
Average of Speech Ratio by Fraudulent_Activity_Label and Fraudulent_Activity_Label



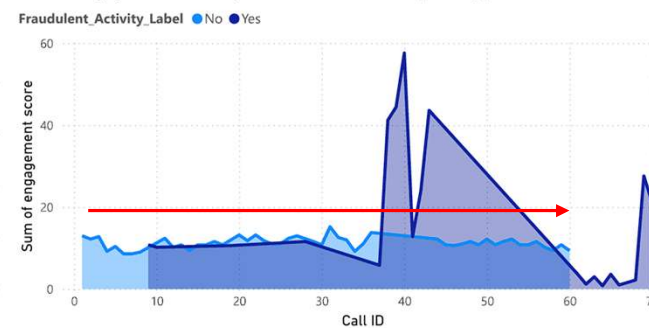
Average of engagement score by Fraudulent_Activity_Label and Fraudulent_Activity_Label



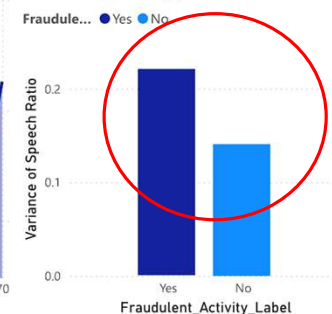
Sum of Speech Ratio by Call ID and Fraudulent_Activity_Label



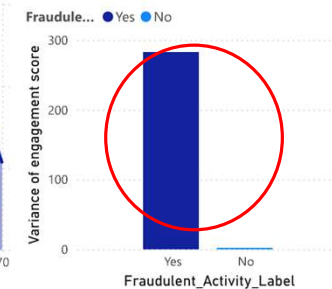
Sum of engagement score by Call ID and Fraudulent_Activity_Label



Variance of Speech Ratio by Fraudulent_Activity_Label and Fraudulent_Activity_Label



Variance of engagement score by Fraudulent_Activity_Label and Fraudulent_Activity_Label

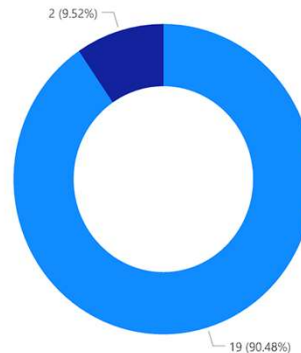


Fraud Call violate security Protocols

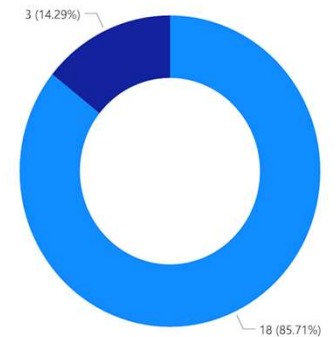
- Fraud Calls Show Non-Compliance with Security Measure
- Over 90% of fraud calls Request For Sensitive Information and 86% of Fraud calls does not Adhere to regulatory standard
- These Finding shows they are the most important variable in fraud detection in sales call.

Fraud by Regulatory Standard and Request For Sensitive Information

Fraud_Count by Requested_Sensitive_Information_Label
Requested_Sensitive_Info... ● Yes ● No

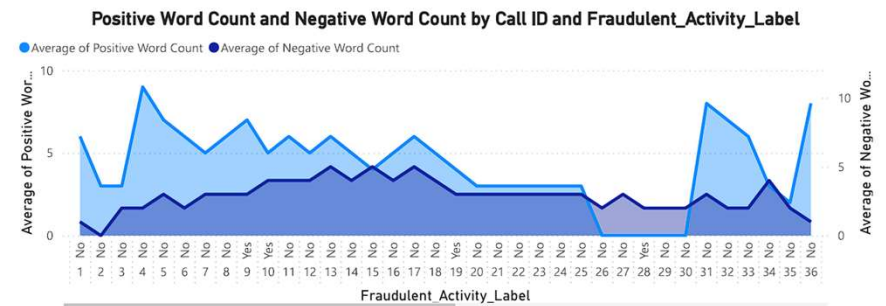
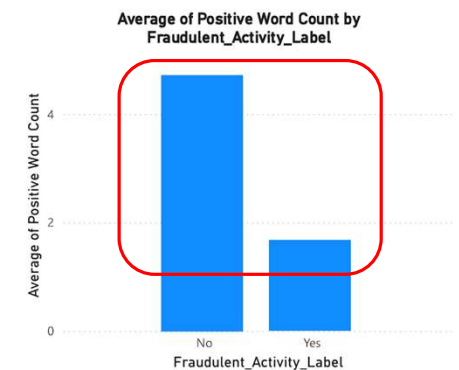
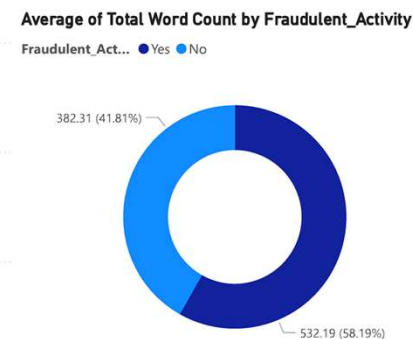
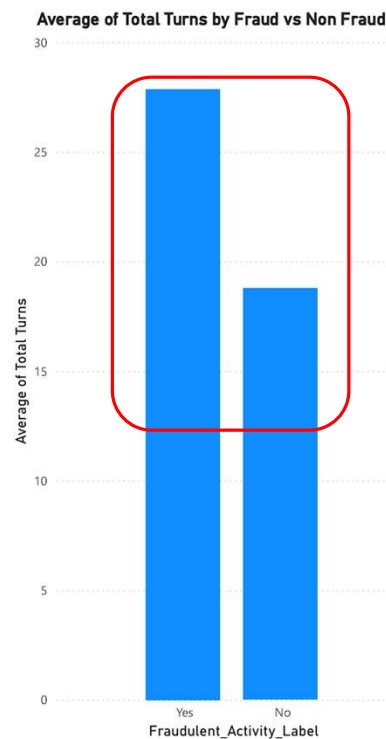


Fraud_Count by Adhered_to_Regulatory_Standards_Label
Adhered_to_Regulatory_S... ● No ● Yes



Fraud Agents Knows less Positive words

- Fraud calls have higher turns , indicating more back and forth exchanges , validating the higher engagement score .
- Higher engagement also leads to higher word count in fraud calls
- Negative words Dominate the Fraud conversation over positive words
- Low Positive word count , higher turn out and higher word count are possible fraud risk factor.



Fraud Agents Ask More and Offer Less

- Fraudsters try to extract info , try to lead the conversation , control the narrative making them ask more questions than customers
- Fraudsters rarely give offers or discount because they are not selling they are tricking the customers rather than providing incentives

