

Case Study Analysis: Customer Service Insights

Reza Mohammadpour

Improving Customer Satisfaction and Operational Efficiency

December 30, 2024

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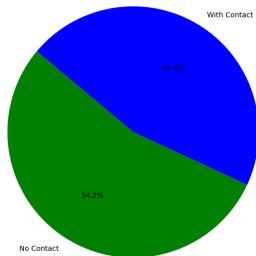
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 - Number of customer contacts = 2,885,296

Orders With and Without Customer Service Contacts

Percentage of Orders With and Without Customer Service Contacts



Since our aim is to identify patterns and trends in customer service interactions, we focus on those orders with contacting customer service.

Merged file

- **Import Libraries:**

- ▶ Import necessary libraries.

- **Read Data:**

- ▶ Load data from two Parquet files into DataFrames.

- **Decode Order Numbers:**

- ▶ Convert order numbers from base-36 to base-10 and store the result in a new column called `Order_id`. This step is crucial for matching orders correctly.

- **Merge DataFrames:**

- ▶ Merge the two DataFrames based on the `Order_id` column. This merged file is essential for further analysis or visualization.

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In this way, we gather all information for those orders that contacted customer service.

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⇒ Please see the last slide for more information.

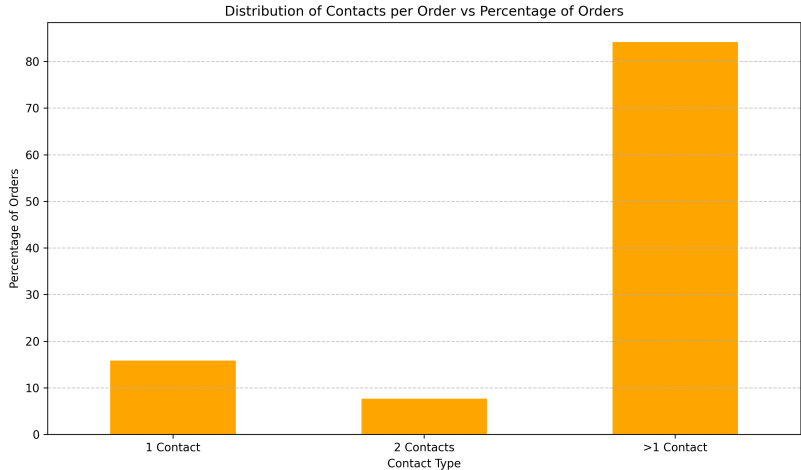
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- The Python code includes reproducible scripts for metrics like interaction rates, errand distributions, and communication trends.

Distribution of Contacts per Order vs Percentage of Orders



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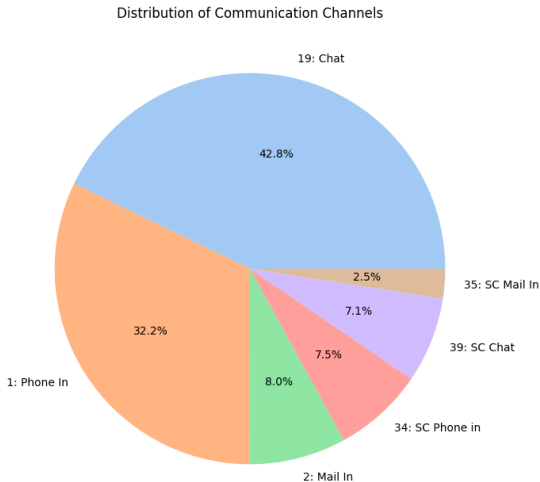
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Recommendation

- Improve First Contact Resolution (FCR)
 - ▶ **Objective:** Minimize the need for multiple contacts.
- Automate Repetitive Tasks
 - ▶ **Objective:** Reduce manual handling for common errand categories.
- Introduce Post-Interaction Surveys
 - ▶ **Objective:** Identify unresolved issues early.

Distribution of Communication Channels



Recommendation based on distributions

Recommendation: Chat Support

- **Automation via Chatbots:**

- ▶ Use AI-driven chatbots to handle frequent and common customer queries, freeing up human agents for more complex issues.

- **Proactive Messaging:**

- ▶ Implement proactive chat options, such as offering assistance during key points in the customer journey (e.g., while booking or browsing services).

- **24/7 Availability:**

- ▶ Ensure chat is available 24/7, as it is the most-used channel. Customers prefer it for quick interactions.

Recommendation: Optimize Phone Support

- **Reduce Call Waiting Times:**

- ▶ Monitor call queue times and adjust staffing levels to ensure peak-hour coverage.

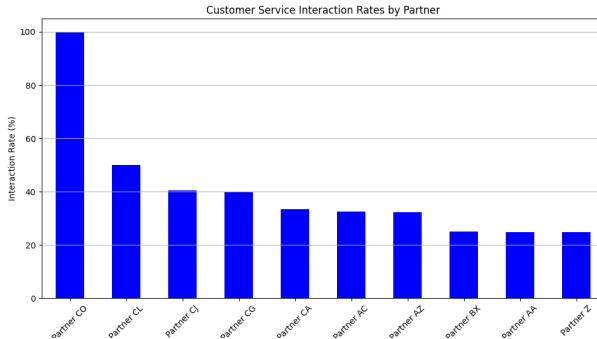
- **Training for Agents:**

- ▶ Invest in training programs to improve the soft skills and technical knowledge of phone support agents.

- **Callback Options:**

- ▶ Offer a callback feature to reduce frustration during peak times.

Customer Service Interaction Rates by Partner



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- **Partners CL, CJ, CG: 40–50% Interaction Rates**
- **Moderate Interaction Rates (25–33%) for Partners CA to AZ**
- **Opportunities with Partners BX, AA, Z (25%)**

Recommendations

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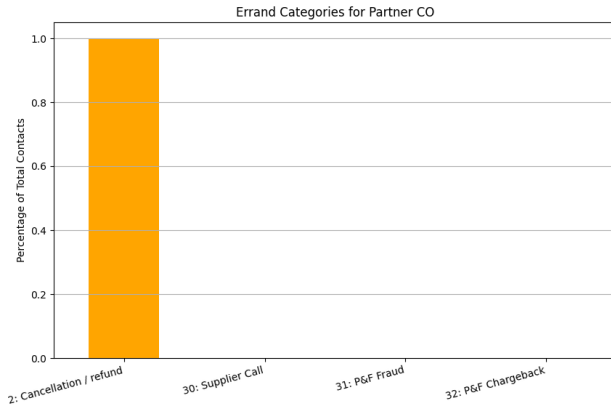
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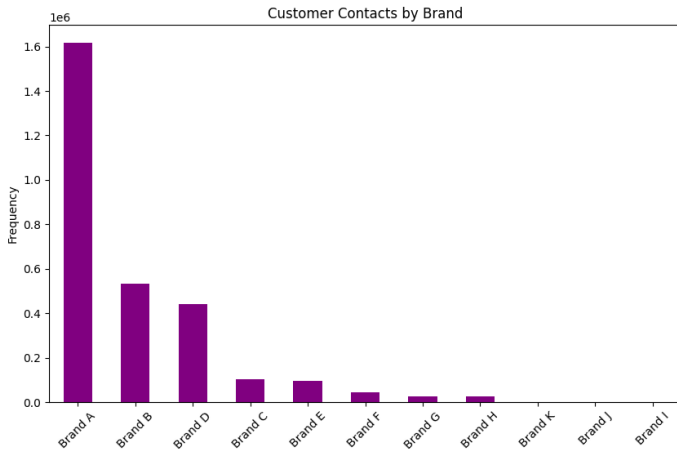
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- **Build on Success with Lower-Interaction Partners (BX, AA, Z)**
 - ▶ Learn from best practices and proactive monitoring
- **Implement a Partner Performance Dashboard**
 - ▶ Track interaction rates and key metrics

Partner CO



Customer Contacts by Brand



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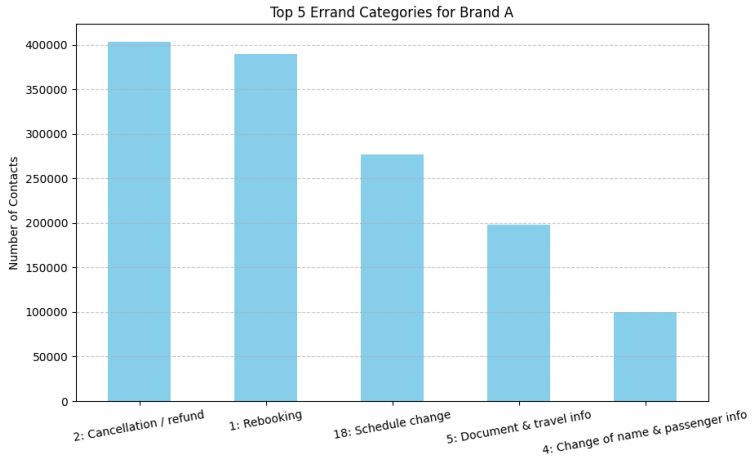
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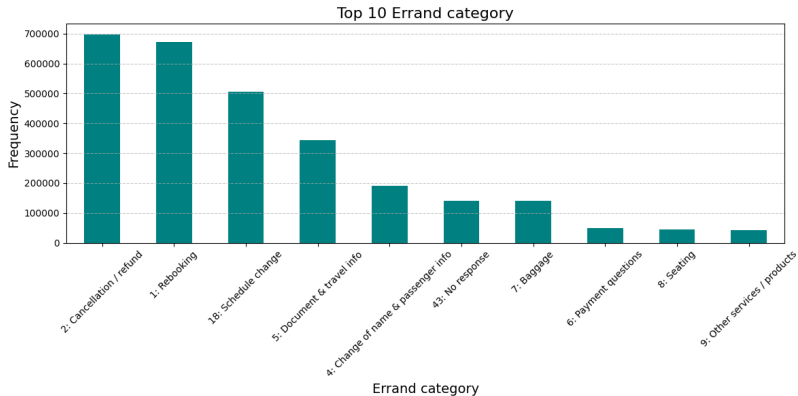
Example: Investigating Issues for Brand A

- **Collect Data:** Gather customer reviews and support tickets related to Brand A.
- **Analyze Data:** Identify that the most common issues are related to product quality and delayed deliveries.
- **Benchmark:** Compare with competitors and find that they have better delivery times.
- **Identify Root Causes:** Discover that the delays are due to inefficient logistics processes.
- **Develop Strategies:** Implement a new logistics management system and train staff on quality control.
- **Engage Stakeholders:** Communicate the changes to customers and monitor feedback.

Top 5 Errand Categories for Brand A



Top 10 Errand category



- **Cancellation / refund and Rebooking** are the most frequent errand categories, indicating that these are common issues customers face.
- **Schedule change** is also significant, suggesting that changes in travel schedules are a frequent concern.
- **Document & travel info and Change of name & passenger info** highlight the need for accurate travel documentation and passenger information.

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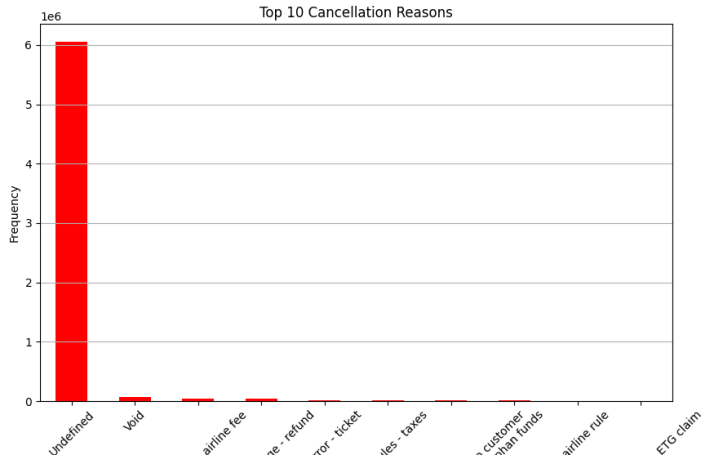
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Top 10 Cancellation Reasons



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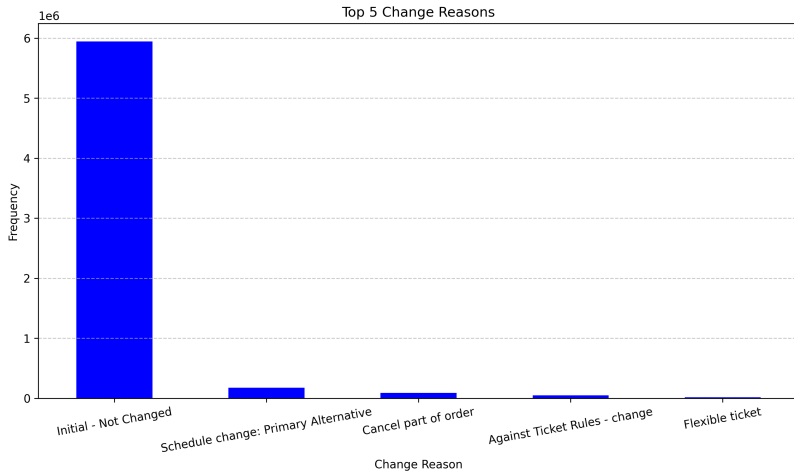
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- ▶ **Schedule Changes and Tech Errors:** Operational disruptions like airline schedule changes or technical issues with ticketing systems lead to cancellations.

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 - ▶ Most frequent actual change reason, driven by airline schedule modifications.
- **Other Frequent Change Reasons:**
 - ▶ **Cancel part of order:** Reflects partial cancellations (90,771 changes).
 - ▶ **Flexible tickets:** Changes leveraging flexibility features of ticketing options (19,234 changes).

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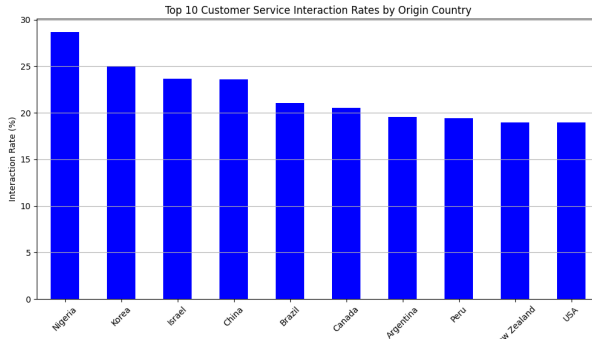
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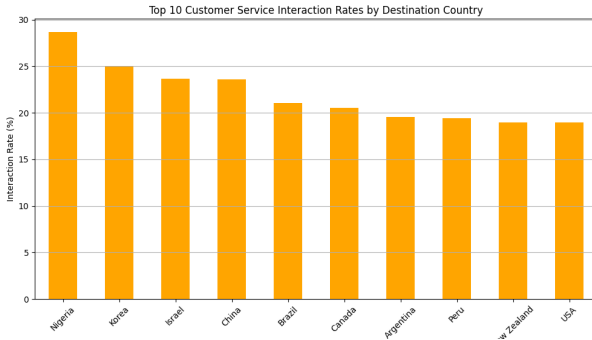
- **Void and Tech Errors:**

- ▶ Work with IT teams to resolve technical issues related to ticket validation and booking systems.

Top 10 Customer Service Interaction Rates by Origin Country



Top 10 Customer Service Interaction Rates by Destination Country



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- The interaction rates for the top origin and destination countries are identical, indicating issues are tied to specific countries rather than differences between their roles as origin or destination.
- Countries like Nigeria, Korea, Israel, and China lead with the highest interaction rates, all exceeding 23%.

Possible Reasons

- **Regional Challenges:**

- ▶ Countries with complex travel logistics, such as visa requirements, payment systems, or partner inefficiencies, may cause higher customer service needs.

- **Cultural or Language Barriers:**

- ▶ Miscommunication or unclear policies may result in customers contacting support more frequently.

- **High Customer Expectations:**

- ▶ Countries like Korea and Israel may have travelers with higher service expectations, increasing interaction rates for queries or complaints.

Recommendations

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 - ▶ **Root Cause Analysis:**

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 - ★ Investigate top errand categories (e.g., cancellations, refunds, rebookings) for these countries to identify recurring issues.
 - ★ Evaluate partner performance, customer feedback, and operational reliability in these regions.
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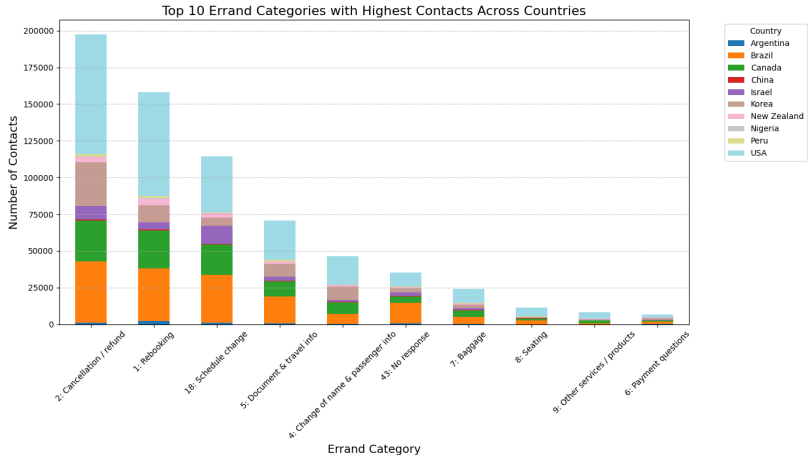
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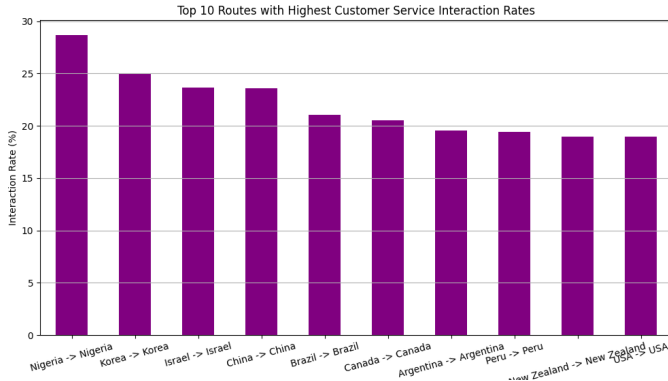
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 - ★ Send customers pre-travel notifications about travel requirements (e.g., visa processes) and policies to minimize confusion.

Top 10 Errand Categories with Highest Contacts Across Countries



Top 10 Routes with Highest Customer Service Interaction Rates



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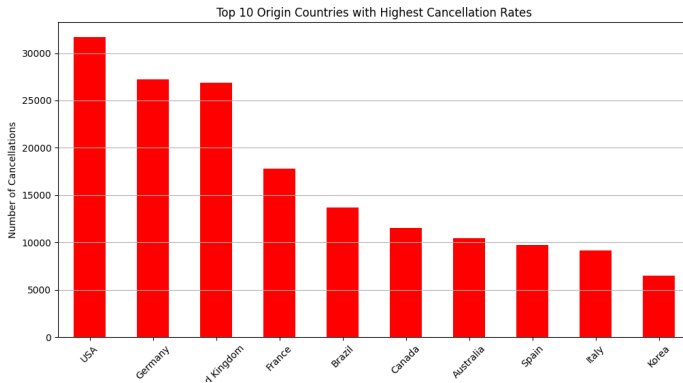
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Top 10 Origin Countries with Highest Cancellation Rates



Recommendation: Address High-Cancellation Origin Countries

- **Focus on the USA, Germany, and the UK:**

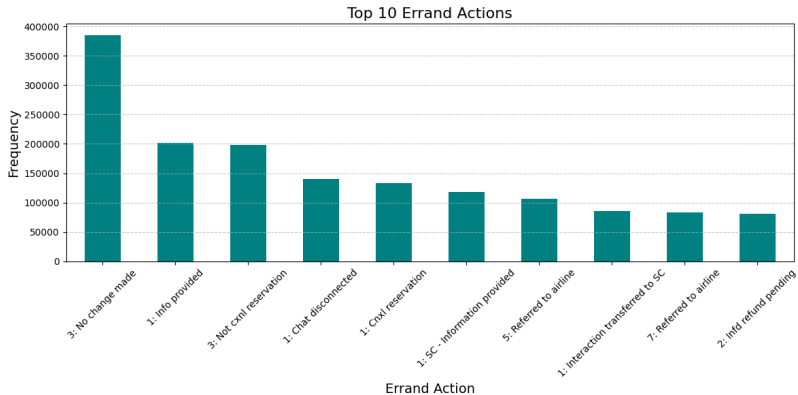
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 - ▶ Provide region-specific self-service tools to simplify refunds, cancellations, or rebookings.

Distribution of Errand Actions

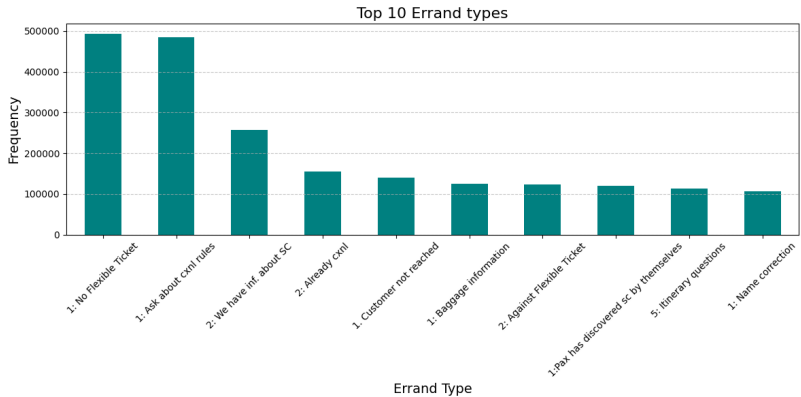


- **No change made** is the most frequent action, indicating many customer interactions do not result in any changes.
- **Info provided** and **Not cxnl reservation** are also common, suggesting that providing information and confirming reservations are significant parts of customer service.
- **Chat disconnected** and **Cnxl reservation** are notable, highlighting issues with chat disconnections and reservation cancellations.

Recommendation

- **Reduce "No Change Made" Interactions:** Provide additional training for agents to resolve issues effectively during the first contact.
- **Improve Information Provision:** Implement automated responses for common queries to provide quick and accurate information.
- **Address Chat Disconnections:** Invest in more reliable chat software to reduce disconnections and establish follow-up protocols.
- **Streamline Reservation Cancellations:** Offer more self-service options for customers to cancel reservations online.

Distribution of Errand Types



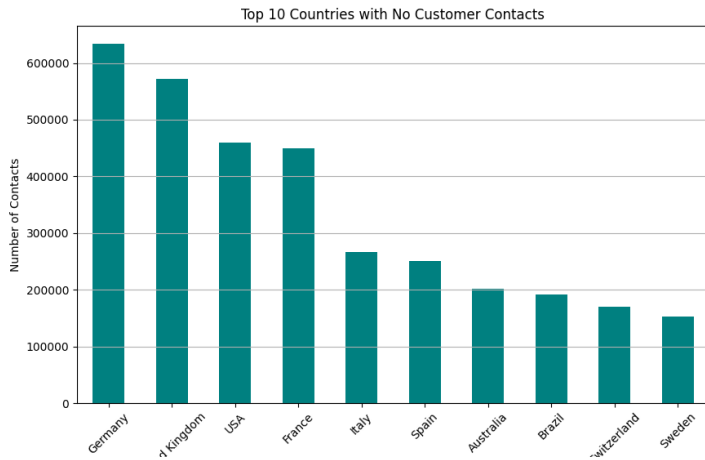
Insights and recommendation

- Ins No Flexible Ticket** and **Ask about cxnl rules** are the most frequent errand types, indicating common issues related to ticket flexibility and cancellation rules.
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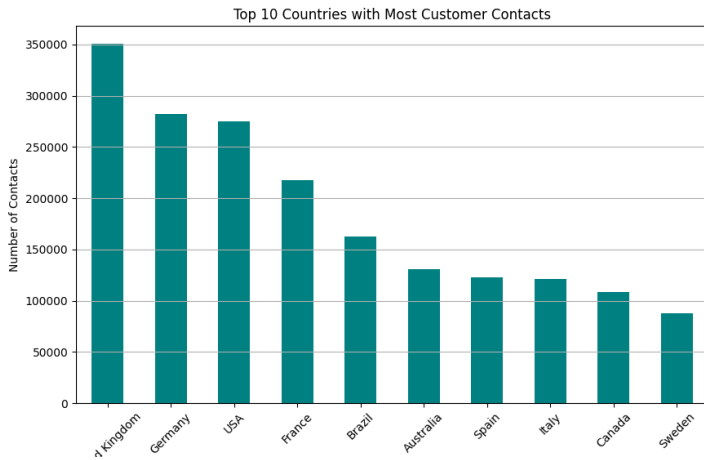
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- Rec Improve Ticket Flexibility Information:** Provide clear and detailed information about ticket flexibility options to reduce related queries.
- Rec Improve Cancellation Rules Communication:** Ensure cancellation rules are easily accessible and understandable to customers.

Top 10 Countries with No Customer Contacts



Top 10 Countries with Most Customer Contacts



- **Countries with High No-Contact Rates**
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Conclusion

Interaction and Contact Rates

- 45.80% of orders involve customer service, with 84.14% of these orders requiring more than two contacts, pointing to inefficiencies.
- Chat and phone dominate communication channels, yet issues like chat disconnections and long call wait times hinder resolution.

Regional and Partner Challenges

- Countries such as the USA, Germany, and the UK show high cancellation rates, driven by operational inefficiencies and schedule changes.
- Partner CO's 100% interaction rate reveals severe issues requiring immediate attention.

Errand and Change Reasons

- Common errand categories include cancellations, refunds, and rebookings, largely driven by schedule changes and technical issues.
- Undefined cancellation reasons dominate, underscoring poor categorization and data tracking.

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To address the identified challenges and implement the recommendations, the following actions are proposed:

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- Given more time, I would be able to conduct a more comprehensive analysis, delving deeper into the data to uncover further insights and refine our recommendations. This would include a thorough examination of underlying trends, potential root causes, and additional factors that may influence the observed metrics. Such an in-depth analysis would enable us to develop even more targeted and effective strategies to address the identified challenges.