Diagnostic Analysis of Cargo

YORK COLLEGE OF PENNSYLVANIA

Student: Daniel Amparo

1 Objective: Conduct a diagnostic examination of AOG cargo services and delving into data to reveal the root causes of service bottlenecks.

2 Tasks: Data cleansing, comprehension of data KPIs, modeling data, analyzing results, and delivering recommendations to AOG.

Synthesis of Literature Review

Supply chain diagnostics have become increasingly important in today's globalized economy. This analysis uses the diagnostic methodology, designed for evaluating and identifying changes in data sets. To assemble a comprehensive understanding of the diagnostic process in the supply chain. One must understand that most diagnostic tools currently used in supply chain analysis are large, quantitative, and time-consuming. According to Foggin, Mentzer, & Monroe (2004). Tools and methods are needed to diagnose where the bottleneck lies and how a freight forward should approach these issues. With my data exploration I will display the power of simple Diagnostic, Descriptive and Statistical analysis, and how much information it can provide to the reader.

Data Analytics Techniques Applied

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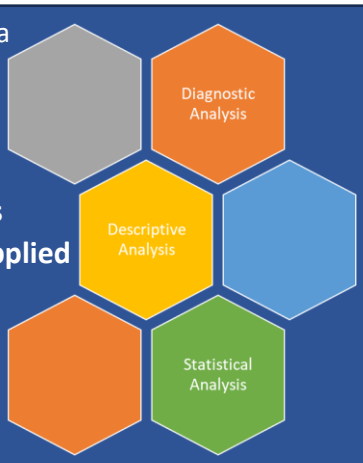
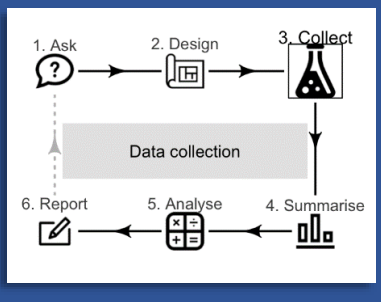


4 Data collection consisted of retrieving data from company SAPBI and Excel CSV file from CARLA Database.



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Findings

Critical services have the highest likelihood of experiencing delays, with a delay rate percentage of approximately 37.63%. This suggests significant room for improvement.

AOG services follow with a delay rate percentage of about 22.08%. While this is lower than critical services, any delay in AOG can be costly and should be minimized.

Routine services have the lowest observed delay rate at around 19.37%, indicating a relatively better performance but still with potential for further improvement.

	Service	Average_Delivery_Time	Average_Delay_Net	Delay_Rate_Percentage
0	AOG	3.226316	0.712281	22.077224
1	Critical	7.750000	2.916667	37.634413
2	Routine	7.366307	1.426859	19.370072

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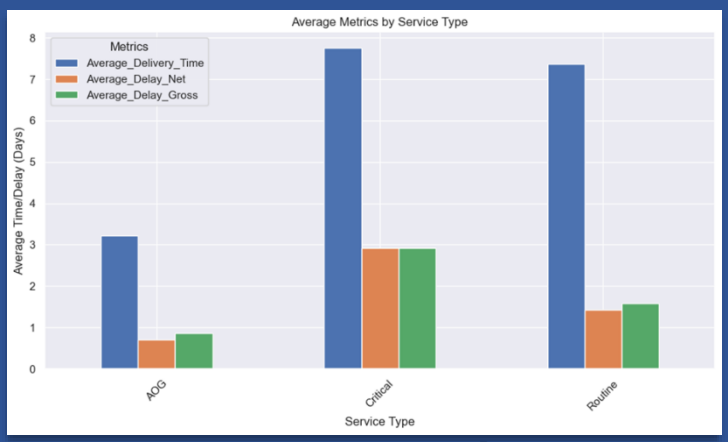
Foggin, J.H., Mentzer, J.T. and Monroe, C.L. (2004), "A supply chain diagnostic tool", International Journal of Physical Distribution & Logistics Management, Vol. 34 No. 10, pp. 827-855. https://doi.org/10.1108/09600030410571383



Routing: 316 instances
Airline: 106 instances
Documentation: 70 instances
Customs: 15 instances
Holidays: 11 instances

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Recommendations

- Investigate the 'Routing' and 'Customs' processes in depth for 'Routine' services and 'US Imports' to identify specific bottlenecks and areas for improvement.
- Implement stricter time management and process optimization for 'Critical' services to reduce the spread of delay causes.
- For 'AOG' services, continue to prioritize rapid response while examining any potential for even marginal improvements without compromising service speed.
- Consider additional staff training, process automation, or collaboration with customs and regulatory agencies to streamline operations, particularly for 'Routine' services and 'US Imports'.
- Regularly review and adjust operational plans to manage and mitigate the identified root causes of delays.