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# Introduction

This report will explore and highlight key findings within the dataset using Tableau’s data visualisation tool to extract commercially important insights. Presenting analyses and inferences in a story format to senior management to aid in decision making. Recommendations based on the findings will be provided at the end of the report.

# Product Performance

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**Fig.1 Product Performance Dashboard**

From the Profit Ratio by Geography graph in fig.1, Turkmenistan (-1.629), Kazakhstan (-1.542), Yemen (-1.503), Uganda (-1.496) and Nigeria (-1.486) had the lowest profit ratio. All are developing countries in Central Asia, Africa and the Middle East.

According to the map shown above, the areas coloured in green are shown to be profitable. However, there are some exceptions in those market segments where the profit ratio is close to zero or even negative.

On the other hand, most areas in the US, LATAM (Latin America), EU, & APAC, have a profit ratio close to zero, with some exceptions that are in the negatives or above 0.2.

On further inspection, market segments such as Canada, Africa, EMEA (Representing the Middle East, Central Asia, and Russia), are areas without data of product returns. While there are only product returns data for the US, LATAM, EU, & APAC. This will be expanded upon in the next page.

According to the Product Insights graph, tables in the furniture category has consistently made losses over the 4 years. With an average discount rate of 29% which is disproportionately higher than the other sub-categories. Difficulties in turning a profit for tables, could be due to discounts in an effort to make more sales.

EMEA also has the highest average discount given. It was found that the market segment of Canada did not have any discount over the 4-year period.

# Analysis of Product Returns

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Description automatically generated**Fig.2 Returns by Market Segment, Category & Ship Mode**

Findings show that the number of returns **increases** year-on-year.

* From 2011 to 2012, there was a 28.7% increase in returns.
* From 2012 to 2013, there was a 15.17% increase in returns.
* From 2013 to 2014, there was a 30.34% increase in returns.

It appears than the market segments (US, LATAM, EU, & APAC) accepting product returns have a near zero profit ratio, while the other market segments (Canada, Africa, & EMEA) without product returns have an average profit ratio more than 0.2

According to fig.2, APAC, LATAM & the US had similar amount of return over the four years. With the EU, having 14.34% lower than the average of the 3 market segments.

# Sales & Profit Analysis

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**Fig.3 Most & Least Profitable Countries**

Findings from most profitable countries in fig.3, show that United States brings ($286.40k) in the most profit, which is around two or more times as much as other countries on the list, except for China ($150.68k). Countries like India ($129.07k), United Kingdom ($111.90k), France ($109.03k), Germany ($107.32), Australia ($103.91k) and Mexico ($102.82k) profit variance across these countries is narrow, with all falling within a $10k range.

Even though the top 10 profitable countries brough in a large amount of revenue, product returns and other costs associated with generating this revenue were so high that the net profit relative to revenue (profit ratio) was very small.

According to the least profitable countries graph, Turkey (-$98.45k) has brought in losses two or more times as much as the other 6 countries (Netherlands (-$41.07k), Honduras (-$29.48k), Pakistan (-$22.45k), Argentina (-$18.69k), Panama (-$17.72k), and Sweden (-$17.52k)). Nigeria (-$80.75k) came in second place.

# Shipping Performance and Cost

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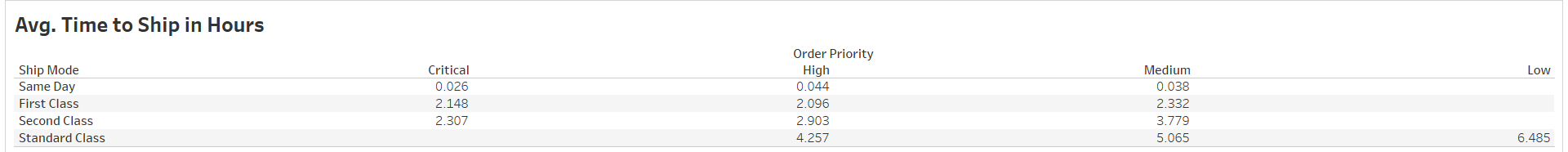
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**Fig.4 Avg. Shipping Cost & Std. Dev.**

In Fig.4, for same day delivery, average shipping cost of furniture for home office is the highest. On average, shipment of furniture for first class delivery is highest for the corporate segment. While shipment cost of furniture for second class and standard class delivery is highest on average, for the consumer segment.

In the office supplies category, average shipping cost for same day and second class were highest for the home office segment. Average shipping cost for first class is highest for the consumer segment. Average shipping cost for standard class is highest for the corporate segment.

In the technology segment, average shipping cost for same day and standard class were highest for the home office segment. Average shipping cost for first class were highest for the consumer segment. Average shipping cost for second class was highest for the corporate segment.

The standard deviation of relevant shipping cost is below the average shipping cost. The office supplies category’s standard deviations were lower than the technology and furniture categories. Which is within expectations, due to smaller shipping space required.

  
**Fig.5 Avg. Time to Ship**

The “Avg. time to ship” means the time elapsed from receiving the order from customers till shipping out the product. In fig.4, for same day delivery, as its name suggests, shipped within the day. First and second class have rather similar average time to ship for critical and high priority of 2 days. However, differed by 1 day for medium priority. Standard class delivery has a more delayed average time to ship, with high priority (4 days), medium priority (5 days) and low priority (6 days).

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**Fig.6 Order Priority & Ship Mode Comparison**

After analysis of the data, there were some recommendations for improvement. Shipping cost is considered part of the overall expenses incurred to fulfil customer orders. In fig.6, for critical priority, first and second-class shipping both have an average of 2 days to ship, but first class has a higher shipping cost. As for high priority, first and second-class shipping both also have an average of 2 days to ship, but first class also has a higher shipping cost. In medium priority, the average cost for first class shipping is higher than same day shipping.

We believe this goes against the order decreasing shipping standard. Which is: same day, first class, second class and standard class. The recommendation is to remove the higher shipping cost option, first class shipping. Thus, reducing cost for the company and increasing profits.

# Recommendations

## Product Recommendations

* In order to improve the profitability of tables, **bundle chairs and tables in promotional deals.**

## Shipping & Returns Recommendations

* **Remove the first-class shipping option** to reduce providing redundant service and to reduce shipping cost borne by the company.
* **Reduce shipping cost** byengaging third-party delivery services in their respective countries.
* Shipping procedures need to be **reviewed** **to ascertain the reason for the increasing product returns year over year**.