Toy company wants to analyze the gross margin with the several factors within the dataset.

Task - 1
Task – 1.1
Gross margin is not given in the dataset so calculated by subtracting cost of sales from sales and set the aggregate for that column to average.
Task – 1.2
Product hierarchy has been created in the sequence where first element is Brand followed by Line, make and then Style. Also, drillable bar chart has been created where clicking on each bar expands to their corresponding links. The bar chart here compares average gross margin at each level.
Task – 1.3
Facility Geo-Hierarchy has been created in sequence of Continent -> Country -> Region -> City. Drillable bar chart for the same has been created where bar expands on double clicking to the further links. Also, the bar chart here compares the average gross margin at each geo-level.

Task – 2.1
Cross tab has been generated which shows Average and total gross margin and product sales for every continents and countries.
Task – 2.2
Tree map has been generated to show highest and lowest gross margin producing countries. Where size used to show the volume of gross margin produced in the country. Highest gross margin produced country and lowest margin produced country have been highlighted where highest is shown with red color and lowest shown with black color.
Task – 2.3
Time series plot has been used to show the product sales over time in 2017. The color used to differentiate product sales for different countries.

Task – 3.1
Drillable geo-map has been created to compare product sales across all geo-hierarchy. Here size is used to show the value of the product sales across.
Task – 3.2
Incorporated average customer satisfaction where placing the cursor on the facility shows the average customer satisfaction for the related facility.
Task – 3.3
On the same page time series plot has been used to show the product sales over time for the year 2017. The visualization changes according to the selection of the above geo-map we have created.

Task – 4.1
Button bar has been created to filter continents where selecting one continent from button bar gives the bar chart of average customer satisfaction for that continent's countries.
Task – 4.2
Scatter plot has been used to show correlation between customer satisfaction and customer distance.
Histogram has been used to show the distribution of customer distance.
Time series plot has been used to show the average customer distance over time for the year 2017.
Task – 4.3
Interactive data visualization has been created where filtering and selecting country from task 4.1 changes the charts of task 4.2 accordingly.
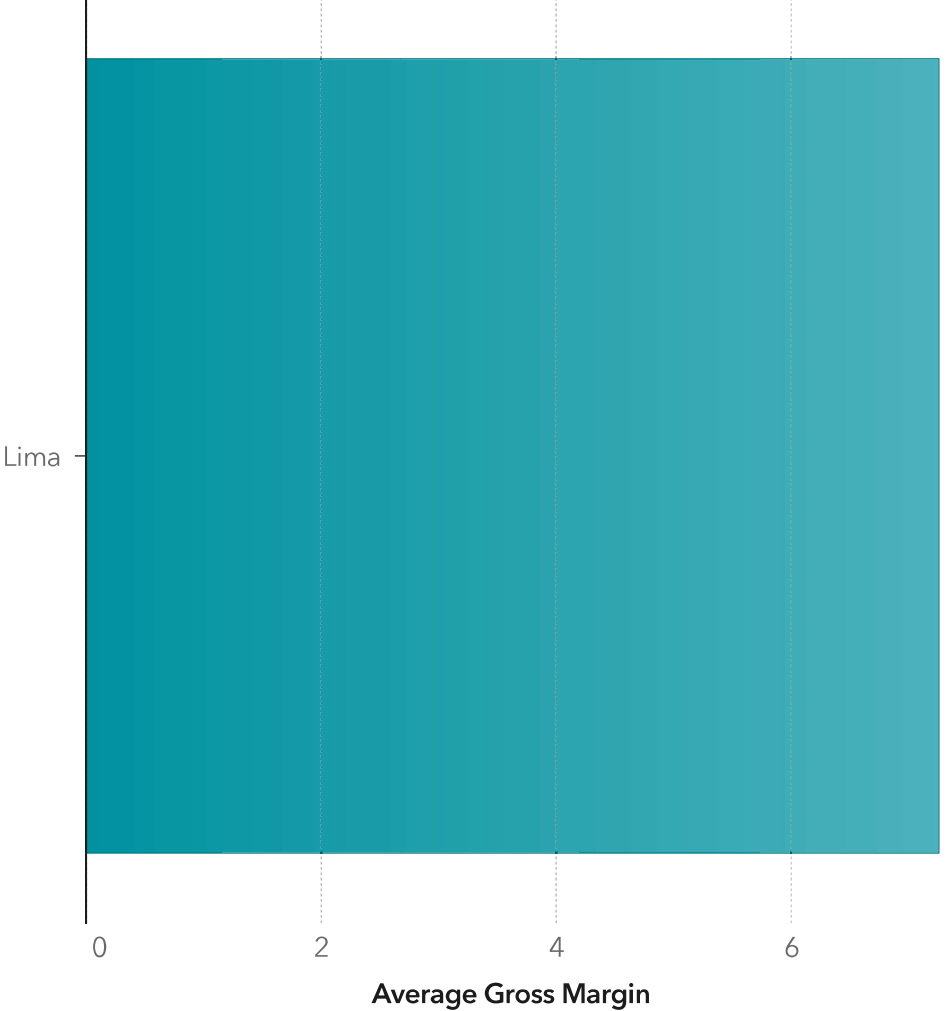
Task1

Task - 1.2 - Average Gross Margin at each Product Hierarchy

Product Style

Average Gross Margin

A1.1

Task - 1.3 - Average Gross Margin at each Geo-Hierarchy
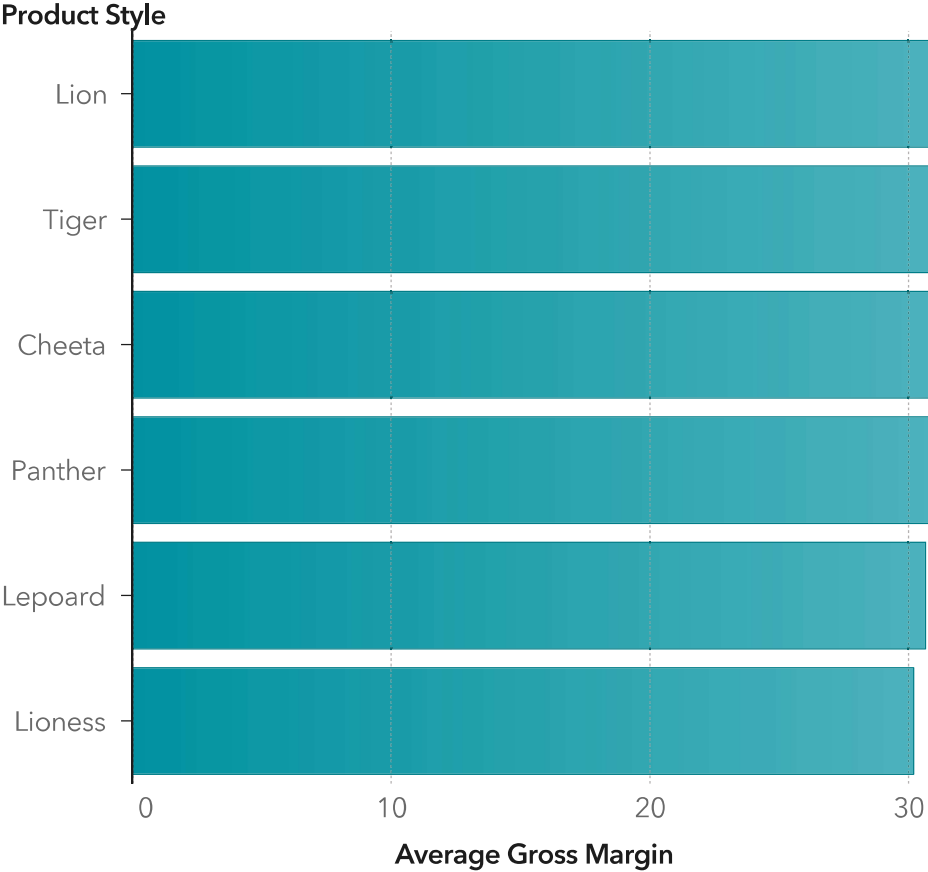
Facility City
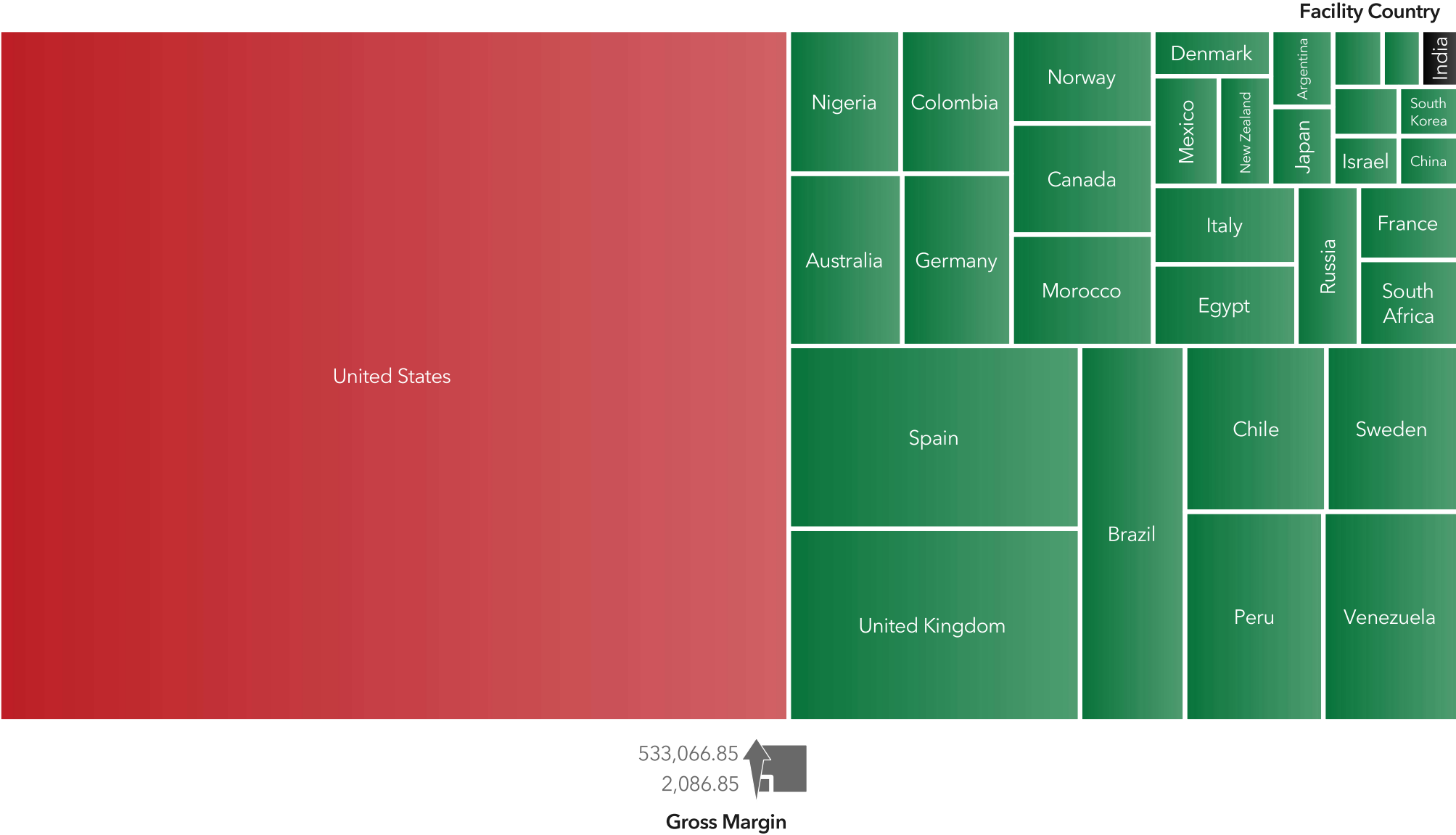

Average Gross Margin

A1.2

Task2.1

Summary of product sales and gross margin

Facility Continent	Facility Country	Product Sale	Avg Product Sale	Gross Margin	Average Gross Margin
Africa	Egypt	65555	40.32	11,423.88	7.03
	Morocco	79928	40.43	15,408.48	7.79
	Nigeria	83638	36.59	15,714.17	6.87
	South Africa	48487	38.42	8,379.01	6.64
Asia	China	15021	40.16	2,897.57	7.75
	India	12009	34.41	2,086.85	5.98
	Indonesia	15620	41.43	3,154.69	8.37
	Israel	16560	41.71	3,183.44	8.02
	Japan	27988	36.07	4,781.96	6.16
	Russia	47402	40.48	9,760.41	8.34
	Saudi Arabia	12090	38.14	2,156.35	6.80
	Singapore	14618	37.87	2,748.67	7.12
	South Korea	15349	39.76	2,867.66	7.43
Europe	Denmark	34446	24.52	5,339.58	3.80
	France	43673	25.27	7,224.63	4.18
	Germany	128604	23.16	18,403.16	3.31
	Italy	68345	25.00	10,974.66	4.01
	Norway	85061	26.54	12,931.56	4.03
	Spain	337595	25.03	52,000.29	3.86
	Sweden	137579	23.32	21,379.61	3.62
	United Kingdom	352500	25.32	54,786.43	3.94
North America		3718108	22.19	555,426.83	3.32

Task 2.2

Gross Margin across countries

Facility Country

United States

Nigeria | Colombia | Norway | Denmark | Argentina | India

Mexico | New Zealand | South Korea

Japan | Israel | China

Australia | Germany | Canada | Italy | Russia | France

Morocco | Egypt | South Africa

Spain | Chile | Sweden

Brazil

United Kingdom | Peru | Venezuela

533,066.85

2,086.85

Gross Margin

Task2.3

Product Sales across all continent over time

Product Sale

500000

400000

300000

200000

100000

0

Jan2017   Mar2017   May2017   Jul2017   Sep2017   Nov2017

Transaction Month

Facility Continent

—— Africa   —— Asia   —— Europe   —— North America   —— Oceania   —— South America
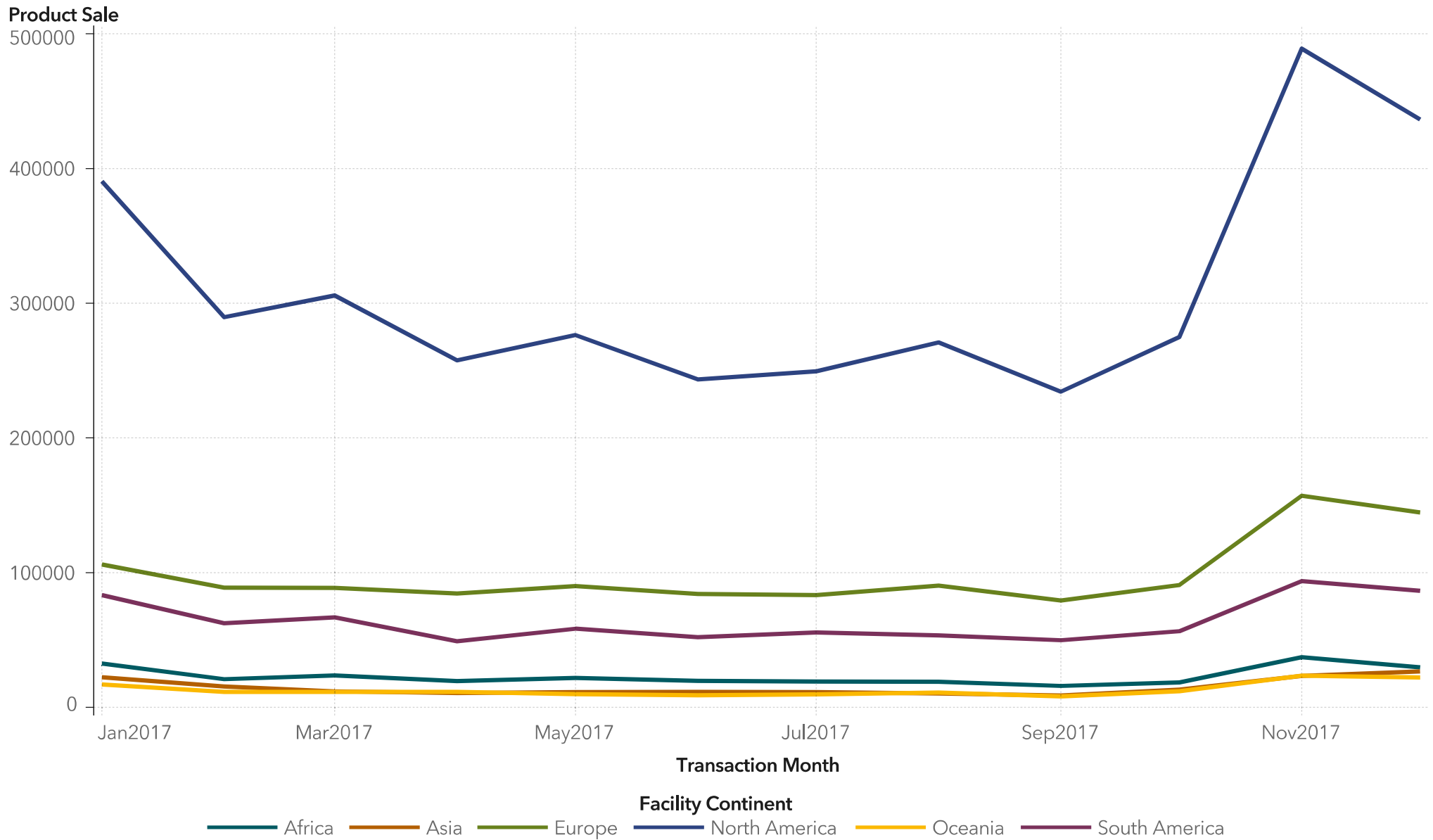
Task3

Product Sale by Facility City
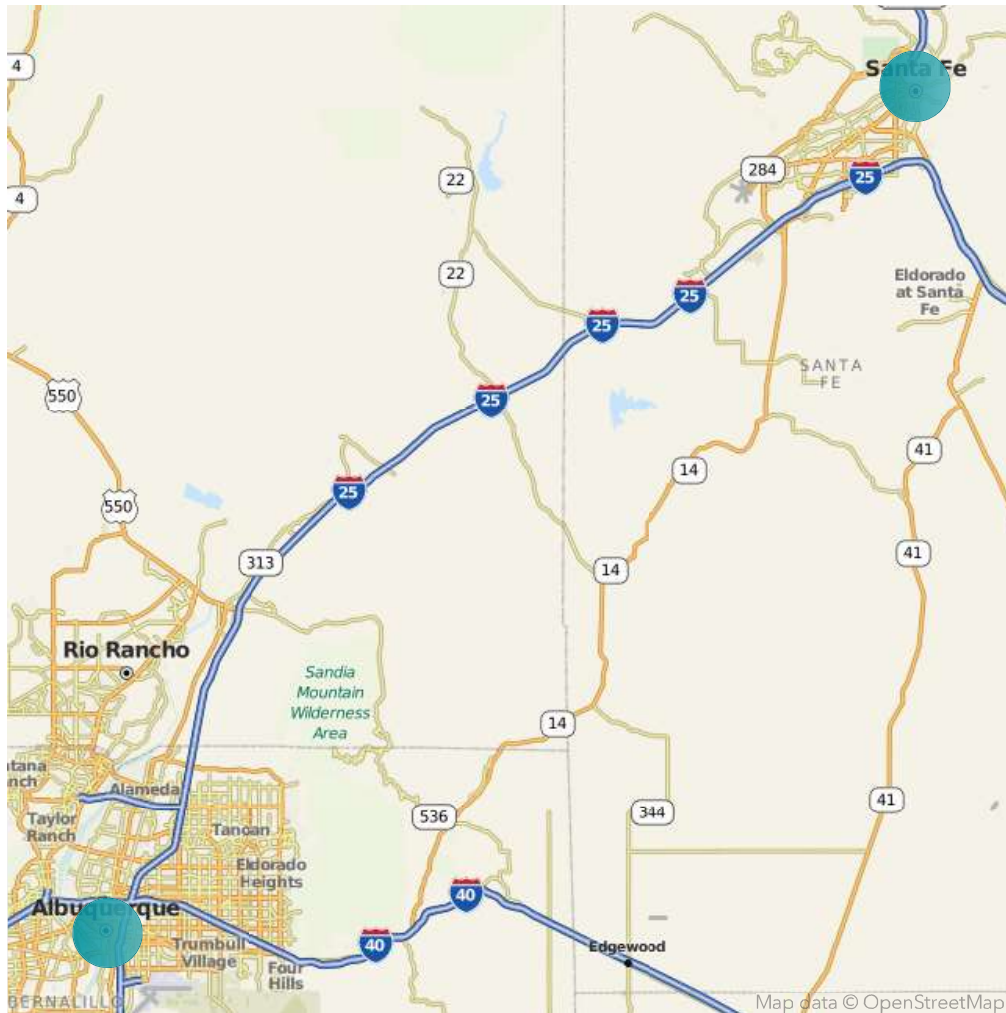
Product Sale

90464
≤30155

Product Sale by Transaction Month

Product Sale

22500

20000

17500

15000

12500

10000

Jan2017　　　May2017　　　Sep2017

Transaction Month

A4.1

A4.2

Task4

Task - 4.1 - Avg Customer Satisfaction by Facility Country

Facility Country

Avg Customer Satisfaction

A5.1
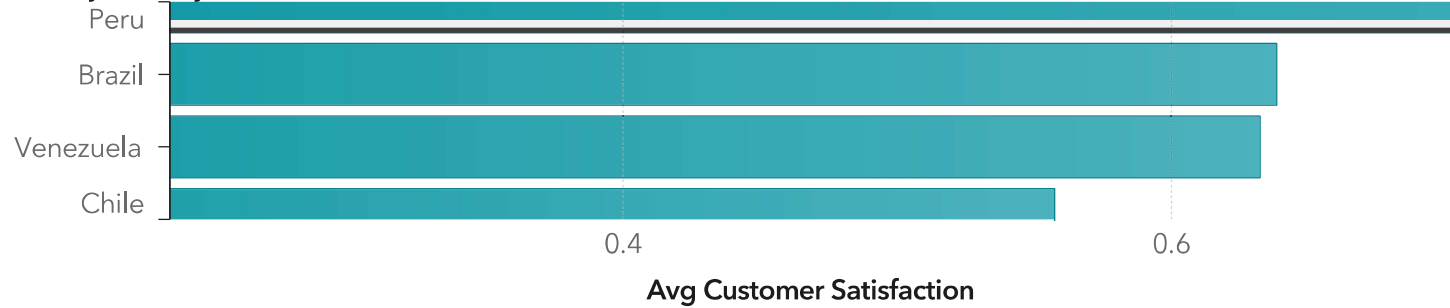
Correlation Plot of Selected Measures

Customer Satisfaction

90%

Customer Distance

Facility Country ● Peru

A5.2

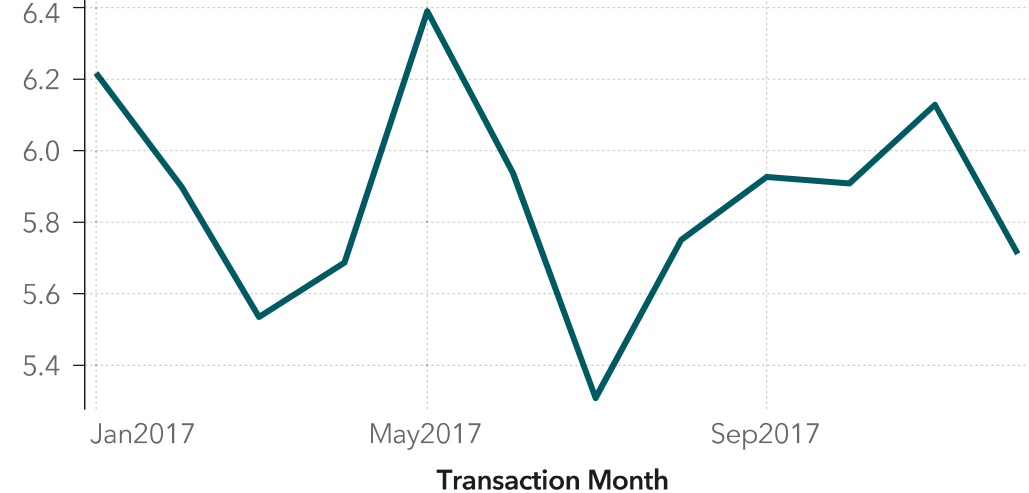## Distribution of Customer Distance

Frequency
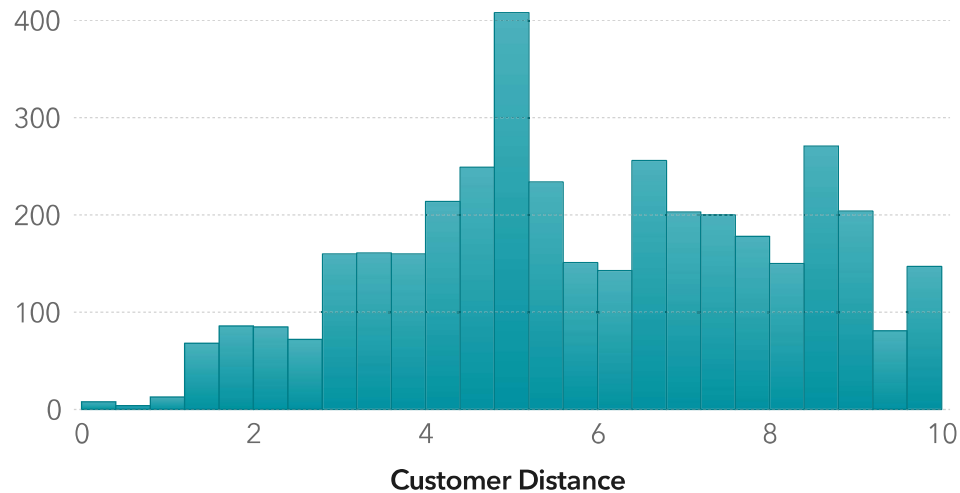
Customer Distance

A5.3

Avg Customer Distance by Transaction Month

Avg Customer Distance

Transaction Month

A5.4

Appendix

<u>A1.1</u>   Task - 1.2 - Average Gross Margin at each Product Hierarchy

Drill Levels: Product Hierarchy: Toy → Plush → Big Cats (l)

<u>A1.2</u>   Task - 1.3 - Average Gross Margin at each Geo-Hierarchy

Drill Levels: Facility Geo-hierarchy: South America → Peru → Lima

<u>A2.1</u>   Summary of product sales and gross margin

<u>A3.1</u>   Gross Margin across countries

Display Rules: **Graph**
 ■ Gross Margin less than 2,088.00
 ■ Gross Margin greater than 533,065.00

<u>A4.1</u>   Product Sale by Facility City

Drill Levels: Facility Geo-hierarchy: North America → United States → New Mexico

<u>A4.2</u>   Product Sale by Transaction Month

Filters: (Facility Continent = 'North America') AND (Facility Country = 'United States') AND (Facility Region = 'New Mexico')

<u>A5.1</u>   Task - 4.1 - Avg Customer Satisfaction by Facility Country

Filters: Facility Continent = 'South America'

<u>A5.2</u>   Correlation Plot of Selected Measures

Filters: Facility Country = 'Peru'
              Facility Continent = 'South America'

escription:

<u>A5.3</u>   Distribution of Customer Distance

<u>A5.4</u>   Avg Customer Distance by Transaction Month