

Visual Analytics_Assignment3

Creation Date: Friday, May 28, 2021 07:11:34 PM

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Visual Analytics_Assignment3

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Overview

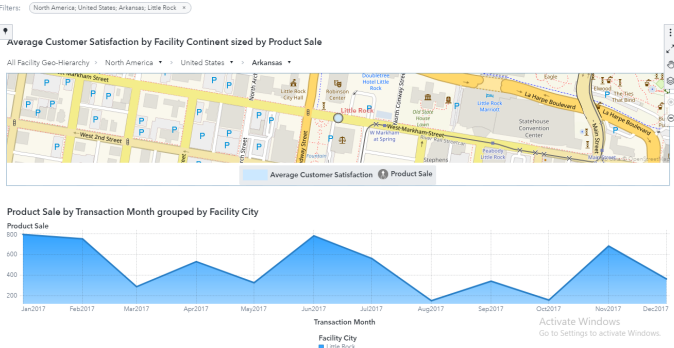
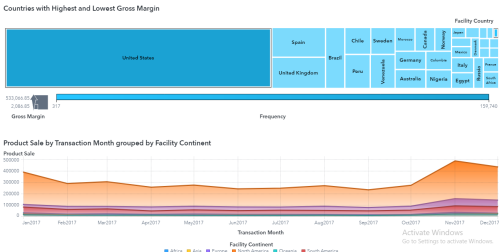
Task 2

Visualisations are created to summarise the gross margin in the year 2017. Summarise the Product Sales and Gross Margin based on Facility Continent and Country. Determined country which represents the highest and the Lowest Gross Margin. Hence, we can see that United States have the highest gross margin i.e. 533066.85 and India has the lowest which is 2086.85. Also represented the Product sales over time across all Facility Continents in the year 2017.

Task 3

Interactive visualisations to explore customer satisfaction and product is been represented. Using the geo-map to compare the Product Sales from facilities across Continents, Countries, Regions, and Cities in form of geo hierarchy also included the Average Customer Satisfaction for each facility's products in the geo-map. based on city depicted Product Sales over time in 2017.

Facility Continent	Facility Country	Product Sale	Gross Margin
Oceania	New Zealand	32202	5,591.05
	Australia	124636	19,072.50
	India	12009	2,086.85
	Saudi Arabia	12090	2,156.35
Asia	Singapore	14618	2,748.67
	South Korea	15349	2,867.66
	China	15521	2,897.59
	Indonesia	15420	3,154.49
	Israel	16560	3,183.44
	Japan	27988	4,781.94
Africa	Russia	47402	9,760.41
	South Africa	48487	8,379.21
	Egypt	65555	11,423.88
	Monocco	79928	15,408.48
	Nigeria	83638	15,714.17
	Argentina	23536	4,654.64
South America	Colombia	87082	15,599.44
	Chile	127204	22,884.63
	Venezuela	164328	27,667.45
	Peru	161562	28,344.22
Europe	Brazil	209929	38,408.15
	Denmark	34444	5,339.58
	France	43673	7,224.63
	Italy	68345	10,974.66
	Norway	85061	12,931.56



Task 4

Interactive visualisation to assist the global production manager in determining the relationships between facility attributes and customer satisfaction. Compared the Average Customer Satisfaction with products from each country. In addition, visualisations were built to demonstrate the correlations between Customer Satisfaction and Customer Distance, as well as the distribution of Customer Distance and the Average Customer Distance across time in 2017.

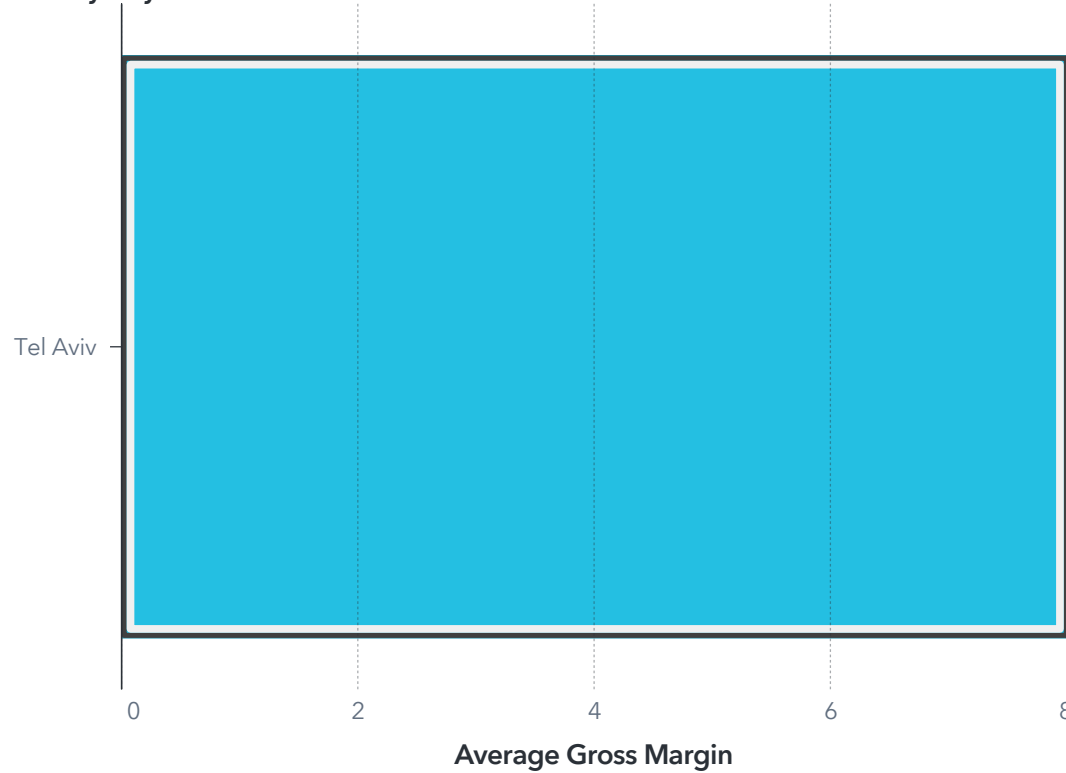
Task 1

Product Sale	Product Cost of Sale	Gross Margin	Average Gross Margin ▲
6284652	5299400	985,252.00	3.91

Average Gross Margin by Facility Geo-Hierarchy

Facility Geo-Hierarchy > Asia ▼ > Israel ▼ > Tel Aviv ▼

Facility City

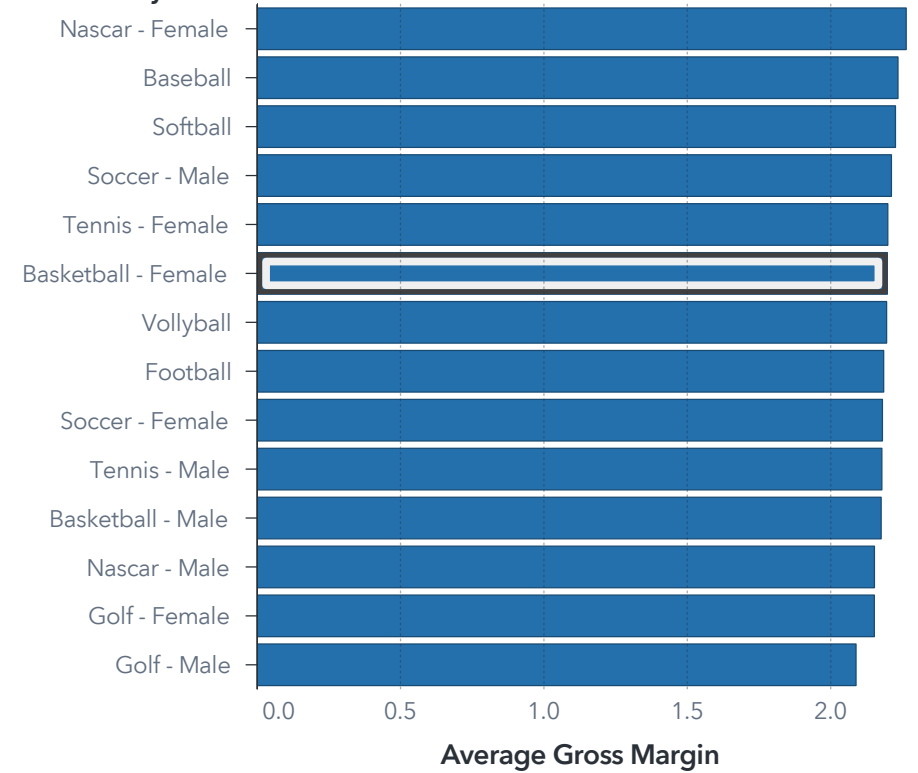


A1.1

Average Gross Margin by Product Hierarchy

Product Hierarchy > Toy ▼ > Figurine ▼ > Athlete ▼

Product Style

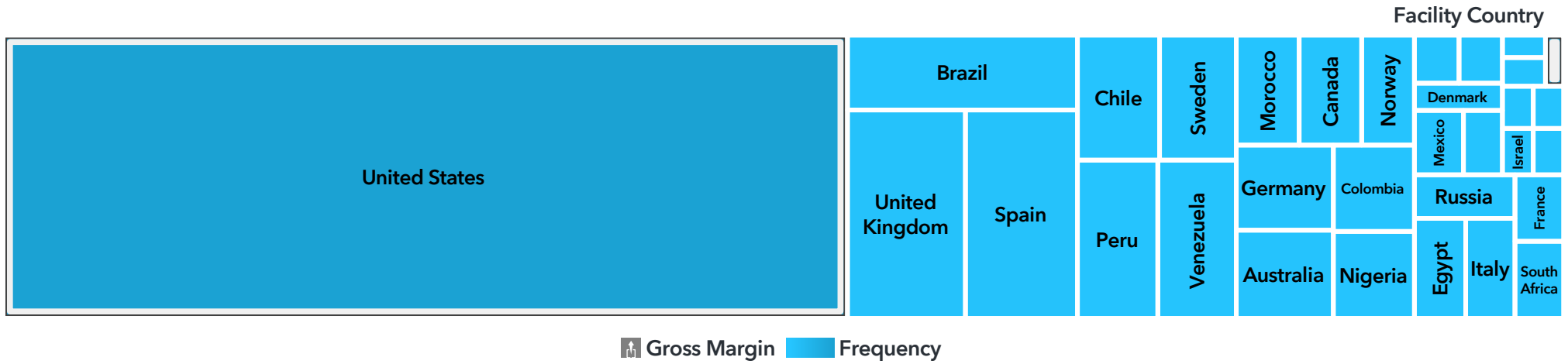


A1.2

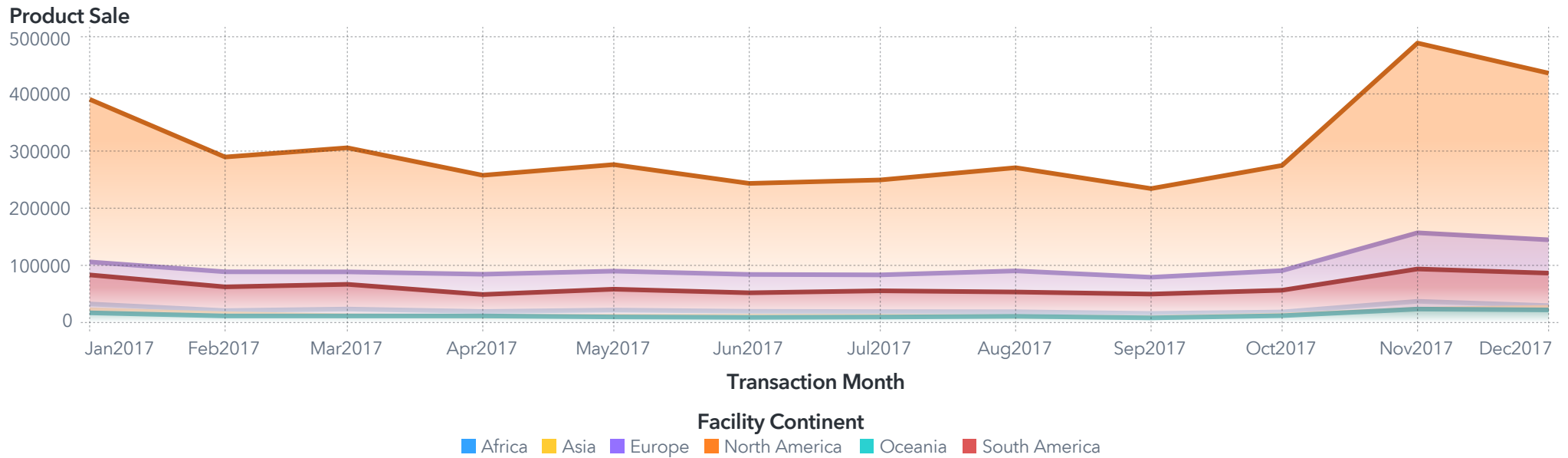
Task 2.1

Facility Continent ▲	Facility Country ▲	Product Sale	Gross Margin
Africa	Egypt	65555	11,423.88
	Morocco	79928	15,408.48
	Nigeria	83638	15,714.17
	South Africa	48487	8,379.01
Asia	China	15021	2,897.57
	India	12009	2,086.85
	Indonesia	15620	3,154.69
	Israel	16560	3,183.44
	Japan	27988	4,781.96
	Russia	47402	9,760.41
	Saudi Arabia	12090	2,156.35
	Singapore	14618	2,748.67
	South Korea	15349	2,867.66
Europe	Denmark	34446	5,339.58
	France	43673	7,224.63
	Germany	128604	18,403.16
	Italy	68345	10,974.66
	Norway	85061	12,931.56
	Spain	337595	52,000.29
	Sweden	137579	21,379.61
	United Kingdom	352500	54,786.43
North America	Canada	106603	15,328.55
	Mexico	41324	7,031.44

Countries with Highest and Lowest Gross Margin



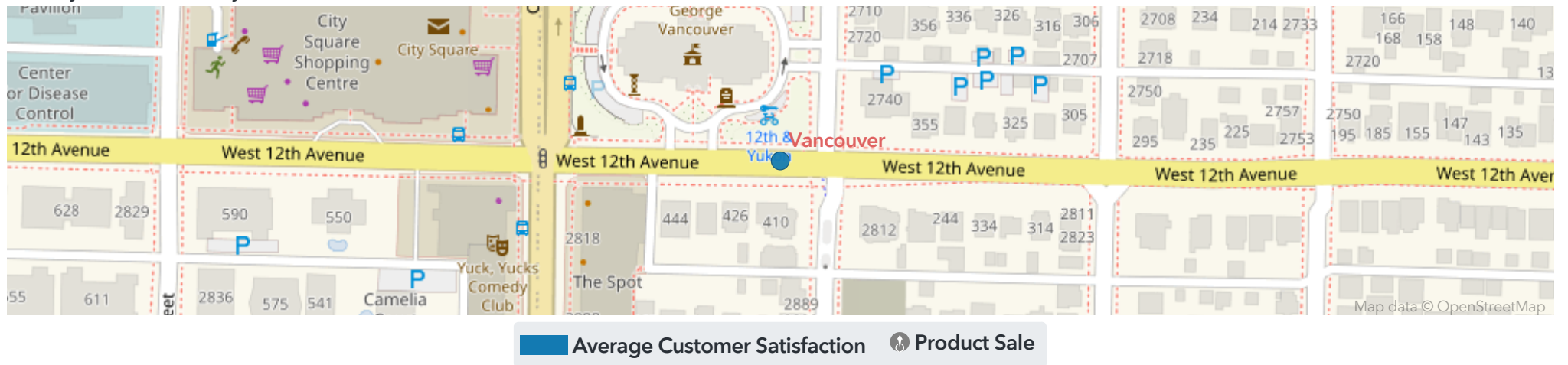
Product Sale by Transaction Month grouped by Facility Continent



Task 3

Average Customer Satisfaction by Facility Continent sized by Product Sale

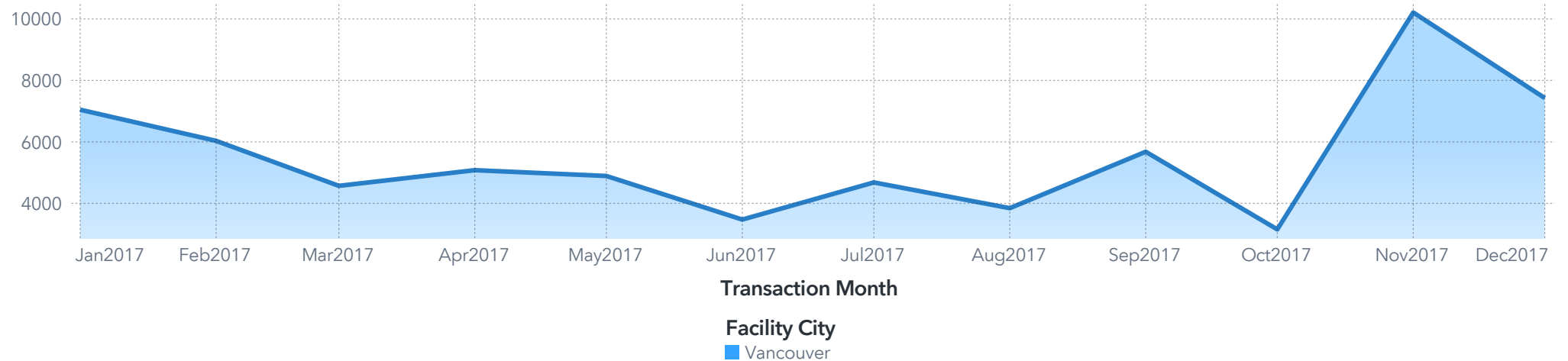
Facility Geo-Hierarchy > North America ▾ > Canada ▾ > British Columbia ▾



A2.1

Product Sale by Transaction Month grouped by Facility City

Product Sale



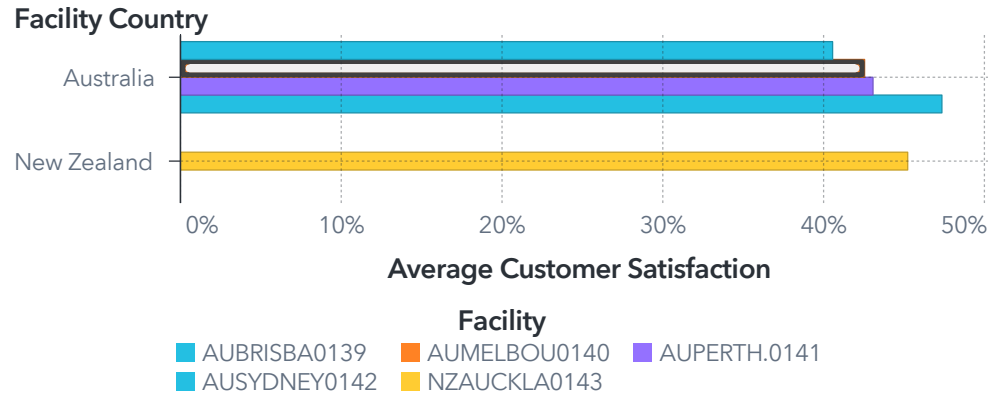
A2.2

Task 4

Africa	Asia	Europe	North America	Oceania	South America
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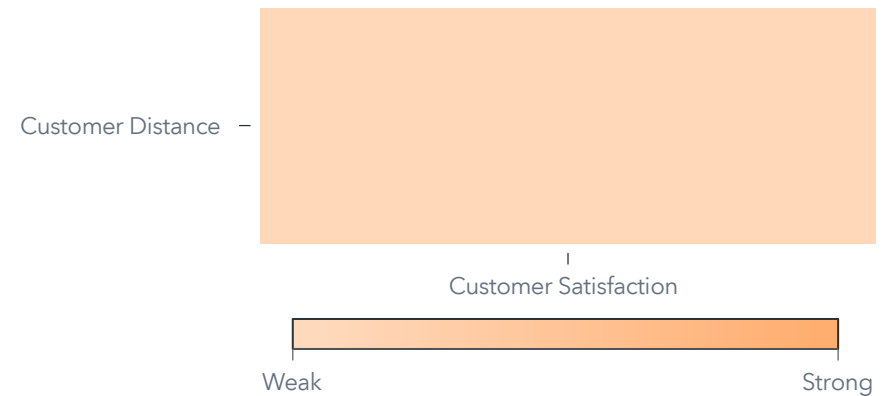
A3.1

Average Customer Satisfaction by Facility Country grouped by Facility



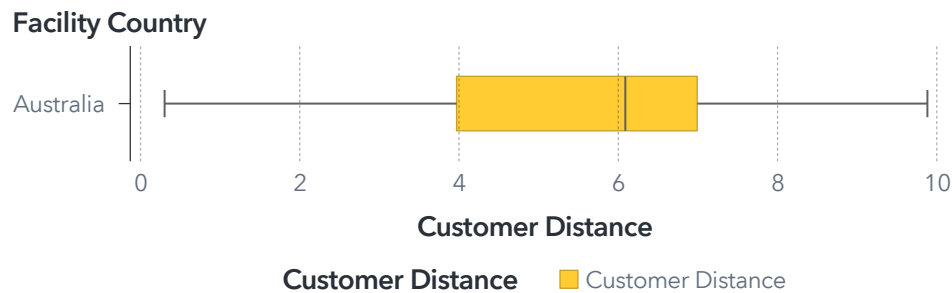
A3.2

Correlation of Selected Measures



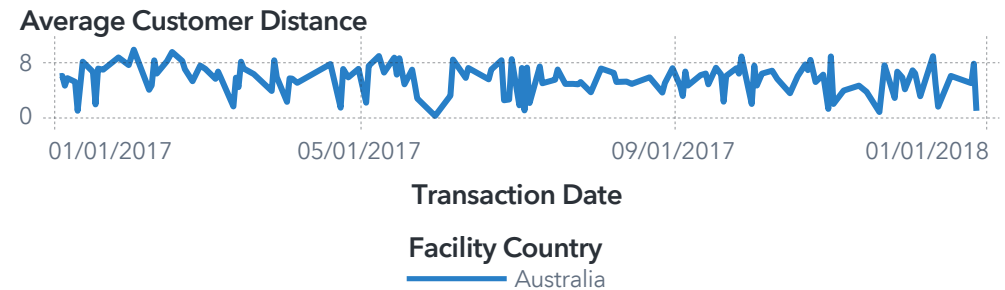
A3.3

Customer Distance by Facility Country



A3.4

Average Customer Distance by Transaction Date grouped by Facility Country



A3.5

Appendix

A1.1 Average Gross Margin by Facility Geo-Hierarchy

Drill Levels: Facility Geo-Hierarchy: Asia → Israel → Tel Aviv

A1.2 Average Gross Margin by Product Hierarchy

Drill Levels: Product Hierarchy: Toy → Figurine → Athlete

A2.1 Average Customer Satisfaction by Facility Continent sized by Product Sale

Drill Levels: Facility Geo-Hierarchy: North America → Canada → British Columbia

A2.2 Product Sale by Transaction Month grouped by Facility City

Filters: (Facility Continent = 'North America') AND (Facility Country = 'Canada') AND (Facility Region = 'British Columbia')

A3.1 Button bar - Facility Continent 1

Filters: Facility Country In(ALL)
Facility In(ALL)

A3.2 Average Customer Satisfaction by Facility Country grouped by Facility

Filters: Facility Continent In(ALL)
Facility Continent = 'Oceania'

A3.3 Correlation of Selected Measures

Filters: Facility Country In(ALL)
Facility Continent = 'Oceania'
(Facility Country = 'Australia') AND (Facility = 'AUMELBOU0140')

A3.4 Customer Distance by Facility Country

Filters: Facility Country In(ALL)
Facility Continent = 'Oceania'
(Facility Country = 'Australia') AND (Facility = 'AUMELBOU0140')

A3.5 Average Customer Distance by Transaction Date grouped by Facility Country

Filters: Facility Continent = 'Oceania'
(Facility Country = 'Australia') AND (Facility = 'AUMELBOU0140')

Bar - Facility Geo-Hierarchy 1 Supplement 1

Facility Geo-Hierarchy > Asia ▼ > Israel ▼ > Tel Aviv ▼



Facility City ▲

Average Gross Margin ▼

Tel Aviv	8.02
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Product Hierarchy > Toy ▼ > Figurine ▼ > Athlete ▼



Product Style ▲	Average Gross Margin ▼
Nascar - Female	2.26
Baseball	2.23
Softball	2.23
Soccer - Male	2.21
Tennis - Female	2.20
Basketball - Female	2.20
Volleyball	2.19
Football	2.18
Soccer - Female	2.18
Tennis - Male	2.18
Basketball - Male	2.18
Nascar - Male	2.15
Golf - Female	2.15
Golf - Male	2.09

Facility Country	Gross Margin	Frequency
Argentina	4,654.64	556
Australia	19,072.50	5,005
Brazil	38,408.15	4,891
Canada	15,328.55	4,580
Chile	22,884.63	3,024
China	2,897.57	374
Colombia	15,599.46	2,234
Denmark	5,339.58	1,405
Egypt	11,423.88	1,626
France	7,224.63	1,728
Germany	18,403.16	5,552
India	2,086.85	349
Indonesia	3,154.69	377
Israel	3,183.44	397
Italy	10,974.66	2,734
Japan	4,781.96	776
Mexico	7,031.44	3,212
Morocco	15,408.48	1,977
New Zealand	5,591.05	1,146
Nigeria	15,714.17	2,286
Norway	12,931.56	3,205
Peru	28,344.22	3,906
Russia	9,760.41	1,171
Saudi Arabia	2,156.35	317
Singapore	2,748.67	386
South Africa	8,379.01	1,262
South Korea	2,867.66	386
Spain	52,000.29	13,486
Sweden	21,379.61	5,899
United Kingdom	54,786.43	13,920
United States	533,066.85	159,740
Venezuela	27,667.45	4,169

Transaction Month	Product Sale	Facility Continent
Jan2017	32542	Africa
Feb2017	20932	Africa
Mar2017	23654	Africa
Apr2017	19447	Africa
May2017	21855	Africa
Jun2017	19702	Africa
Jul2017	19177	Africa
Aug2017	18985	Africa
Sep2017	15914	Africa
Oct2017	18527	Africa
Nov2017	37192	Africa
Dec2017	29682	Africa
Jan2017	22311	Asia
Feb2017	15440	Asia
Mar2017	11906	Asia
Apr2017	10587	Asia
May2017	11303	Asia
Jun2017	11486	Asia
Jul2017	11351	Asia
Aug2017	10323	Asia
Sep2017	8852	Asia
Oct2017	13143	Asia
Nov2017	23330	Asia
Dec2017	26627	Asia
Jan2017	106091	Europe
Feb2017	88803	Europe
Mar2017	88653	Europe
Apr2017	84520	Europe
May2017	89987	Europe
Jun2017	84160	Europe
Jul2017	83387	Europe
Aug2017	90391	Europe
Sep2017	79269	Europe
Oct2017	90826	Europe
Nov2017	157002	Europe
Dec2017	144712	Europe
Jan2017	390530	North America
Feb2017	289605	North America
Mar2017	305730	North America
Apr2017	257634	North America
May2017	276348	North America
Jun2017	243410	North America
Jul2017	249456	North America
Aug2017	270901	North America
Sep2017	234344	North America
Oct2017	274870	North America
Nov2017	488942	North America
Dec2017	436336	North America
Jan2017	16995	Oceania
Feb2017	11512	Oceania
Mar2017	11526	Oceania
Apr2017	11528	Oceania
May2017	9855	Oceania
Jun2017	8999	Oceania
Jul2017	9628	Oceania
Aug2017	10947	Oceania
Sep2017	8181	Oceania
Oct2017	11992	Oceania
Nov2017	23568	Oceania
Dec2017	22109	Oceania
Jan2017	83322	South America
Feb2017	62433	South America
Mar2017	66853	South America
Apr2017	49062	South America
May2017	58376	South America
Jun2017	52056	South America
Jul2017	55551	South America
Aug2017	53461	South America
Sep2017	49818	South America
Oct2017	56538	South America
Nov2017	93704	South America
Dec2017	86468	South America



Geo coordinate - Facility Geo-Hierarchy 2 Supplement 1

Facility Geo-Hierarchy > North America ▼ > Canada ▼ > British Columbia ▼



Facility City	Product Sale	Average Customer Satisfaction
Vancouver	66092	42%

Transaction Month	Product Sale	Facility City	
Jan2017	7048	Vancouver	
Feb2017	6035	Vancouver	
Mar2017	4570	Vancouver	
Apr2017	5080	Vancouver	
May2017	4891	Vancouver	
Jun2017	3473	Vancouver	
Jul2017	4681	Vancouver	
Aug2017	3844	Vancouver	
Sep2017	5680	Vancouver	
Oct2017	3153	Vancouver	
Nov2017	10211	Vancouver	
Dec2017	7426	Vancouver	

Facility Country ▲	Average Customer Satisfaction ▼	Facility ✕✕
Australia	47%	AUBRISBA0139
New Zealand	45%	NZAUCKLA0143
Australia	43%	AUPERTH.0141
Australia	43%	AUMELBOU0140
Australia	41%	AUSYDNEY0142

Correlation - Customer Satisfaction 1 Supplement 1

X Axis	Y Axis	Correlation
Customer Satisfaction	Customer Distance	-0.0169

Box - Facility Country 1 Supplement 1

Facility Country ▲	Minimum	Lower Whisker	First Quartile	Average	Median	Third Quartile	Upper Whisker	Maximum	Std Dev	Count ✖✖
Australia	0.3	0.3	4.0	5.5	6.1	7.0	9.9	9.9	2.2	1,168

Transaction Date	Average Customer Distance	Facility Country
01/03/2017	6.0	Australia
01/04/2017	6.1	Australia
01/05/2017	4.7	Australia
01/06/2017	5.8	Australia
01/09/2017	5.2	Australia
01/10/2017	1.0	Australia
01/12/2017	8.1	Australia
01/16/2017	6.7	Australia
01/17/2017	2.0	Australia
01/18/2017	7.1	Australia
01/20/2017	7.0	Australia
01/26/2017	8.8	Australia
01/30/2017	7.7	Australia
02/01/2017	9.9	Australia
02/07/2017	4.1	Australia
02/08/2017	4.7	Australia
02/09/2017	8.3	Australia
02/10/2017	6.4	Australia
02/14/2017	8.2	Australia
02/16/2017	9.5	Australia
02/20/2017	8.2	Australia
02/21/2017	7.1	Australia
02/24/2017	5.3	Australia
02/27/2017	7.6	Australia
03/01/2017	7.1	Australia
03/05/2017	5.7	Australia
03/06/2017	6.7	Australia
03/07/2017	5.9	Australia
03/12/2017	1.7	Australia
03/13/2017	5.8	Australia
03/14/2017	4.5	Australia
03/15/2017	8.1	Australia
03/16/2017	7.2	Australia
03/20/2017	6.3	Australia
03/27/2017	3.9	Australia
03/28/2017	8.3	Australia
03/29/2017	5.9	Australia
04/02/2017	2.3	Australia
04/03/2017	5.7	Australia
04/04/2017	5.7	Australia
04/06/2017	5.1	Australia
04/19/2017	7.8	Australia
04/23/2017	1.5	Australia
04/24/2017	7.1	Australia
04/26/2017	5.9	Australia
04/30/2017	7.1	Australia
05/03/2017	2.2	Australia
05/04/2017	7.5	Australia
05/08/2017	9.0	Australia
05/10/2017	6.6	Australia
05/14/2017	8.7	Australia
05/15/2017	6.3	Australia
05/16/2017	8.6	Australia
05/18/2017	4.9	Australia
05/21/2017	7.0	Australia
05/22/2017	5.0	Australia
05/23/2017	2.8	Australia
05/30/2017	0.3	Australia
06/05/2017	3.2	Australia
06/06/2017	8.5	Australia
06/11/2017	5.8	Australia
06/12/2017	7.2	Australia
06/20/2017	5.6	Australia
06/21/2017	7.0	Australia
06/25/2017	8.4	Australia
06/26/2017	2.6	Australia
06/28/2017	2.7	Australia
06/29/2017	8.5	Australia
07/02/2017	1.8	Australia
07/03/2017	7.2	Australia
07/04/2017	1.1	Australia
07/05/2017	7.3	Australia
07/06/2017	2.2	Australia
07/10/2017	7.4	Australia
07/11/2017	5.0	Australia
07/16/2017	5.5	Australia
07/17/2017	7.0	Australia
07/20/2017	4.9	Australia
07/23/2017	4.9	Australia
07/25/2017	4.9	Australia
07/26/2017	5.2	Australia
07/30/2017	3.7	Australia
08/03/2017	7.2	Australia
08/08/2017	6.5	Australia
08/09/2017	5.2	Australia
08/13/2017	5.3	Australia
08/15/2017	4.9	Australia
08/22/2017	5.9	Australia
08/27/2017	3.7	Australia
08/28/2017	5.1	Australia
08/31/2017	7.2	Australia
09/03/2017	4.6	Australia
09/04/2017	3.2	Australia
09/05/2017	6.7	Australia
09/06/2017	4.7	Australia
09/11/2017	6.2	Australia
09/13/2017	6.4	Australia
09/14/2017	4.9	Australia
09/17/2017	7.3	Australia
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09/20/2017	2.4	Australia
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09/26/2017	6.4	Australia
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10/16/2017	3.6	Australia
10/19/2017	6.0	Australia
10/22/2017	7.7	Australia
10/23/2017	6.9	Australia
10/24/2017	8.4	Australia
10/26/2017	5.2	Australia
10/29/2017	6.3	Australia
10/31/2017	1.3	Australia
11/01/2017	8.9	Australia
11/02/2017	2.0	Australia
11/06/2017	4.0	Australia
11/12/2017	4.7	Australia
11/15/2017	3.8	Australia
11/20/2017	0.9	Australia
11/22/2017	7.6	Australia
11/23/2017	6.5	Australia
11/26/2017	2.9	Australia
11/27/2017	6.7	Australia
11/29/2017	5.9	Australia
11/30/2017	4.1	Australia
12/03/2017	6.9	Australia
12/04/2017	6.4	Australia
12/06/2017	3.1	Australia
12/11/2017	8.9	Australia
12/12/2017	4.9	Australia
12/13/2017	1.6	Australia
12/18/2017	6.1	Australia
12/26/2017	5.0	Australia
12/27/2017	7.9	Australia
12/28/2017	1.0	Australia