

University of London

Economics, Management, Finance and Social Sciences (EMFSS)



**UNIVERSITY
OF LONDON**

ST2187 Business Analytics, Applied Modelling and Prediction

Academic Year 2020-21

Student Number: 190399205

(1,103 words)

Table of Contents

Executive Summary	1
Figure 1.1: Cumulative Profit Map, Yearly Profit and Sales of Oceania Region	2
Figure 2.1: Yearly Profits by Segment and Yearly Profits by Product Category	3
Figure 3.1: Profits and Sales by Sub-Category	4
Figure 4.1: Discounts by Sub-Category between 2013 to 2014	5
Figure 5.1: Shipping Cost and Shipping Cost per Quantity between 2013 and 2014	6
Recommendation 1: Cross-selling	7
Recommendation 2: Reducing operating cost	8

Executive Summary

This report provides an analysis and evaluation of issues faced by Superstore over the period of 2011 to 2014, focused on examining the cause of drop in profit between 2013 and 2014 and to recommend ways of increasing profit. Findings are reported using Tableau and represented in the shape of bar and circle charts, pie charts, as well as line graphs.

The analysis brings attention to the fact that despite having an increase in sales of \$46,160 from 2013 to 2014, there was a \$6,121 profit loss. Further investigations revealed that high discounts on 'Tables' were offered, and shipping costs were increasing continuously over the years. These factors appear to be significant causes of the reduced profits between 2013 to 2014.

To address these concerns, two strategies are crafted for the company.

Firstly, the company can improve the sales of 'Tables' by adopting cross-selling and having bundled promotions with complementary sub-categories.

Secondly, the company can minimize their operating expenditure like shipping costs and withdrawing from markets that are not profitable at all, to overcome the decline in profit margins.

OCEANIA REGION

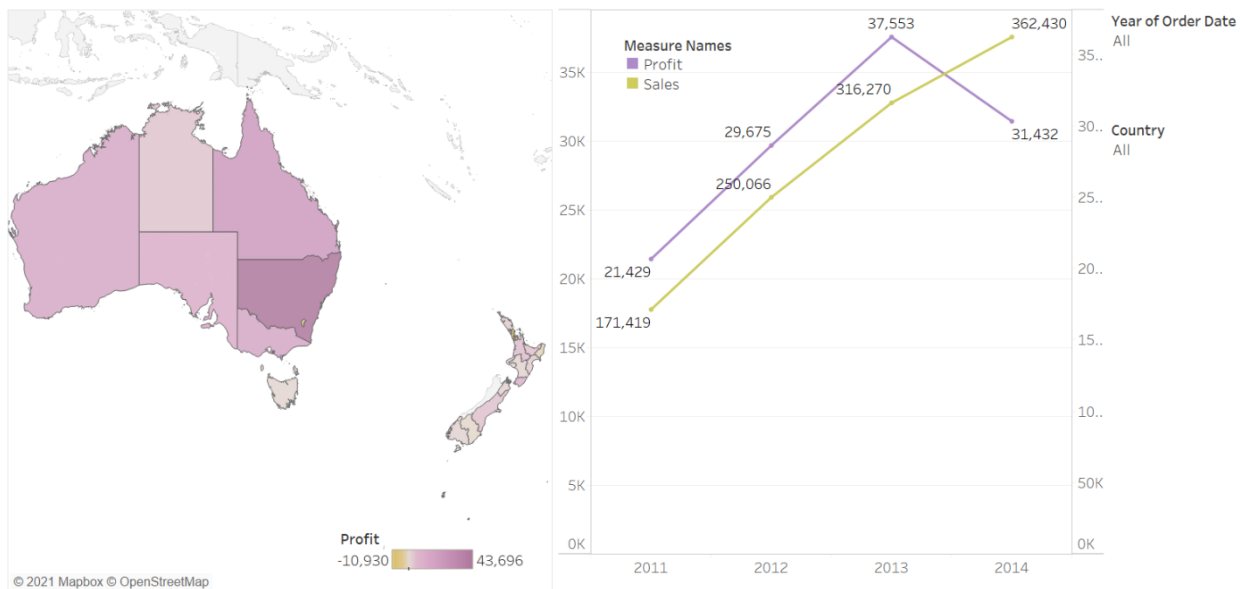


Figure 1.1: Cumulative Profit Map, Yearly Profit and Sales of Oceania Region

On the left side of Figure 1.1, it shows the Oceania region's profit map that consists of Australia, New Zealand, and Papua New Guinea. We can see that majority of Australia is in shades of purple, which indicates high profit. New South Wales is especially shaded in deep purple which tells us that it is a state that earned the most profit across the entire Oceania region, accumulating to \$49,696. Looking at New Zealand, the country is mostly in shades of light purple-pink which indicates low profits. However, Auckland is shaded in gold which tells us that it went through a huge loss in profit, totaling -\$10,930. Last but not least, New Capital, a state of Papua New Guinea, is suffering a loss in profit as well, amounting to -\$419.

On the right side of Figure 1.1, it shows us the total profits and sales made in Oceania region from 2011 to 2014. As reflected, there has been a steady increase in sales through the years although the sales amount has been decreasing with each year, with 2013 to 2014 only having a difference of \$46,160 increase in sales. From 2011 to 2012 and 2012 to 2013, each year had a \$78,647 and \$66,204 difference in sales respectively. There has been a constant growth in profits over the years except for a slight, obvious drop from 2013 to 2014. We will be investigating this further in the next dashboard.

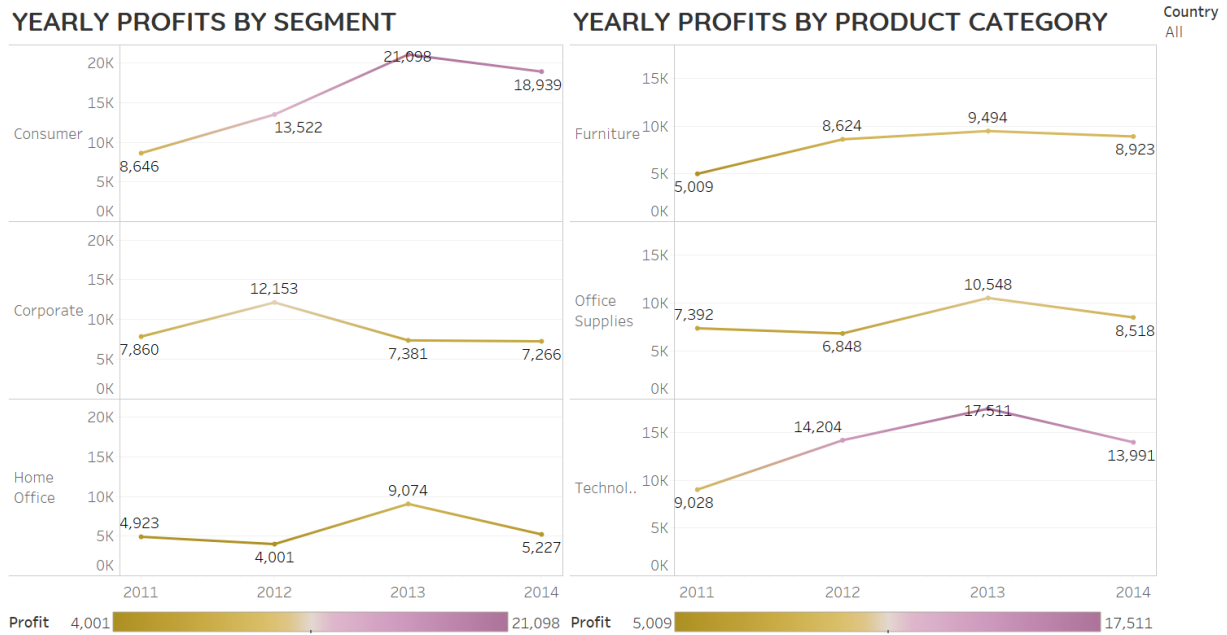


Figure 2.1: Yearly Profits by Segment and Yearly Profits by Product Category

According to Figure 2.1, in the Oceania region, there was a drop in profits from 2013 to 2014 in all three segments as well as product categories. When we look at the yearly profits by segment, Home Office suffered a major decline in profits as compared to other segments with a \$3,847 decrease from 2013 to 2014. As for the yearly profits by product category, Technology saw the most decline in profits compared to Furniture and Office Supplies with a \$3,520 decrease from 2013 to 2014. In the following dashboards, we will observe the possible reasons that could have contributed to this decrease in profits between 2013 to 2014.

PROFITS BY SUB-CATEGORY

		2013	2014	Grand Total
Furniture	Bookcases	5,029	4,907	9,936
	Chairs	3,056	5,040	8,096
	Furnishings	990	1,528	2,518
	Tables	419	-2,553	-2,133
Office Supplies	Appliances	3,182	2,947	6,130
	Art	684	507	1,192
	Binders	992	1,001	1,994
	Envelopes	272	581	852
	Fasteners	234	281	515
	Labels	347	345	692
	Paper	733	878	1,610
	Storage	3,324	1,472	4,796
	Supplies	780	506	1,286
Technology	Accessories	2,823	1,705	4,529
	Copiers	5,618	6,797	12,414
	Machines	196	902	1,097
	Phones	8,875	4,587	13,462
Grand Total		37,553	31,432	68,985

SALES BY SUB-CATEGORY

		2013	2014	Grand Total
Furniture	Bookcases	42,257	46,273	88,530
	Chairs	46,106	57,153	103,259
	Furnishings	6,968	9,837	16,805
	Tables	20,417	13,698	34,115
Office Supplies	Appliances	20,277	41,822	62,099
	Art	5,148	7,549	12,697
	Binders	6,006	6,519	12,525
	Envelopes	5,615	5,799	11,415
	Fasteners	2,832	3,029	5,862
	Labels	2,085	2,728	4,813
	Paper	5,556	5,939	11,495
Technology	Storage	25,816	16,887	42,703
	Supplies	6,734	8,505	15,239
	Accessories	19,794	23,332	43,127
	Copiers	43,941	62,511	106,451
	Machines	12,297	19,279	31,577
Phones		44,420	31,569	75,989
Grand Total		316,270	362,430	678,700

Country
All

Segment

- ☒ Consumer
- ☒ Corporate
- ☒ Home Office

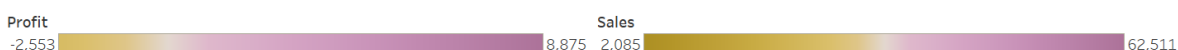


Figure 3.1: Profits and Sales by Sub-Category

Upon further inspection, according to Figure 3.1, we observe that several sub-categories have done relatively good under Profits by Sub-Category with most of them generating profits except for the sub-category 'Tables'. It suffered a loss of \$2,553 in 2014 which resulted in a net loss of \$2,133 between 2013 to 2014. At the same time, looking over at Sales by Sub-Category, we can see that 'Tables' had a total sale of \$34,115 from 2013 to 2014. Considering the amount received from sales, it is concerning that 'Tables' is not making any profit. Majority of the sub-categories did not perform that well in terms of sales either, with 'Labels' having the lowest sales of \$2,085 in 2013. Overall, despite having an increase in sales from 2013 to 2014, profits decreased.

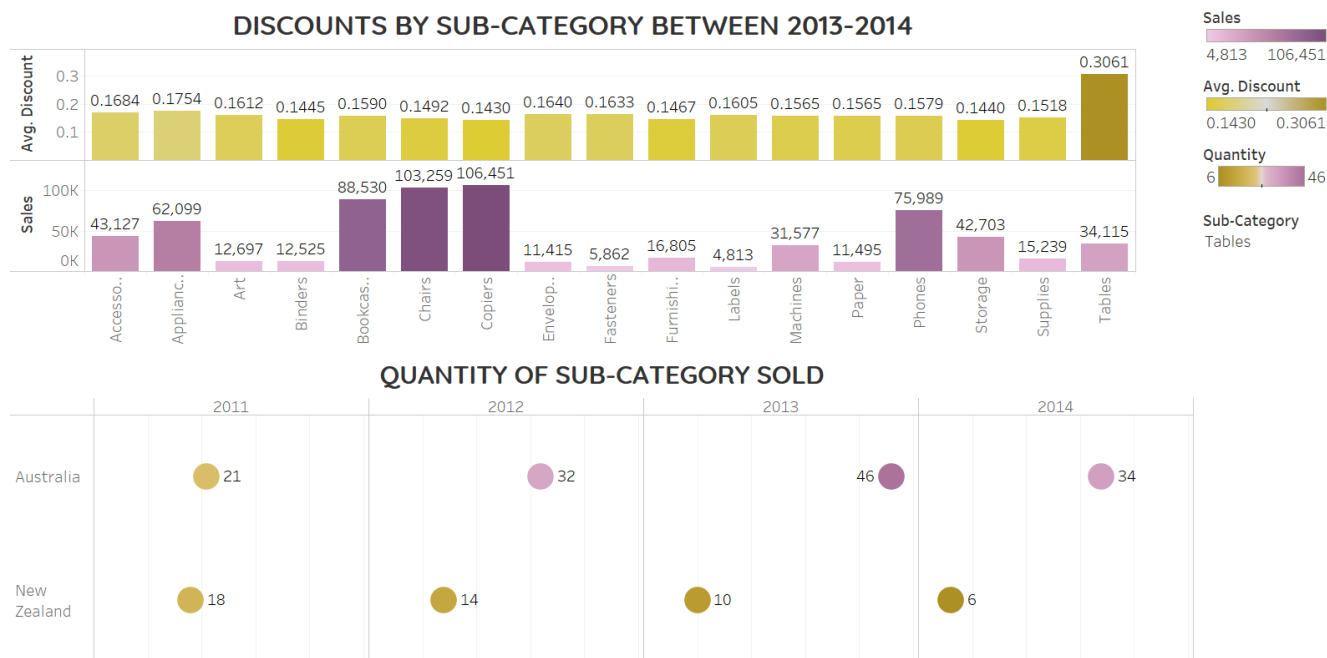
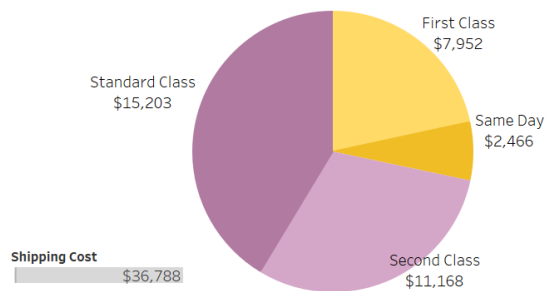


Figure 4.1: Discounts by Sub-Category between 2013 to 2014

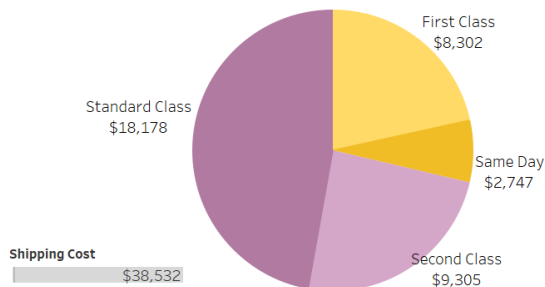
From Figure 4.1, we notice that 'Tables' has the highest average discount of 0.3061 but total sales were only \$34,115. However, the highest sub-category sales were from 'Copiers' which amounted to \$106,451 and they had an average discount of 0.1430.

Additionally, it can be seen that Australia has consistently outsold New Zealand in sub-category 'Tables' every year from 2011 to 2014.

SHIPPING COST IN 2013



SHIPPING COST IN 2014



SHIPPING COST PER QUANTITY

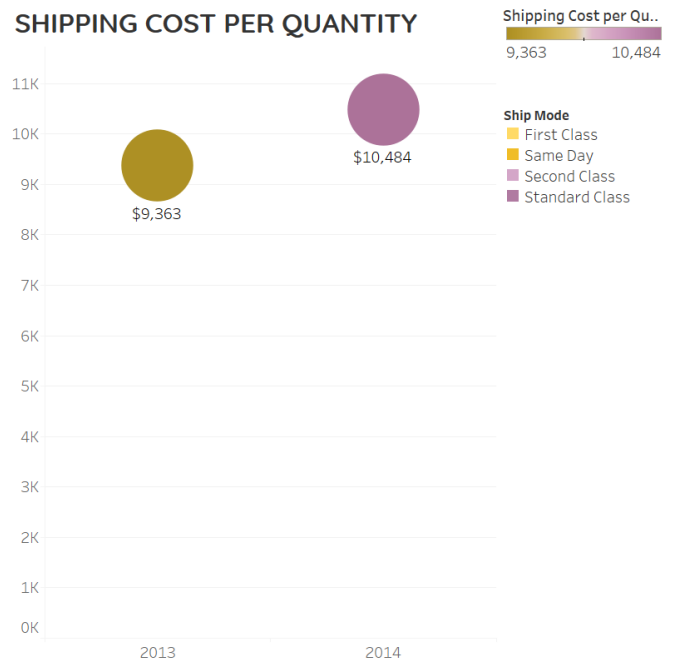


Figure 5.1: Shipping Cost and Shipping Cost per Quantity between 2013 and 2014

As depicted in Figure 5.1, there was an increase in shipping cost as well as shipping cost per quantity from 2013 to 2014. On the left, we can see that total shipping cost increased from \$36,788 in 2013 to \$38,532 in 2014, with growth in First Class, Same Day, and Standard Class shipping mode. As for shipping cost per quantity, the increase from 2013 to 2014 amounted to \$1,121.

Recommendations

1) Cross-selling:

Based on Figure 3.1, most of the sub-categories are profitable excluding 'Tables' sub-category which generated a net loss of \$2,133 between 2013 to 2014. It is suggested that 'Tables' is the least popular sub-category with only 96 units sold, whereas 'Chairs' is the most popular sub-category product with 718 units sold from 2013 to 2014.

Despite its poor performance in 2014, there is still a possibility of an increase in revenue. As seen in Figure 1.1, Australia is generating the most profits in the Oceania region compared to other countries. From Figure 4.1, it is shown that there has been an increase in demand for 'Tables' in Australia as opposed to New Zealand. Therefore, the company should not immediately remove 'Tables' from its merchandise but focus more on the consumer needs in Australia.

One important thing to note from Figure 4.1 is how 'Tables' had the highest averaged discount compared to other sub-category products. This is harmful to the company because despite given discounts, 'Tables' did not make much sales from it thus resulting in a loss in profit. Therefore, to help improve the sales of 'Tables' and gain profits in return, the company should reduce offering discounts on 'Tables' and implement cross-selling with bundled promotions instead. Cross-selling involves the sale of similar or corresponding goods to a current client (Hayes 2020). The company can offer a bundle promotion of 'Tables' and 'Chairs' which are complementary products. When customers purchase two or more chairs, they are entitled to purchase tables at a discounted price. Despite tables being sold at discounted prices, the company will still make profits as more units are sold overall.

2) Reducing operating cost:

From Figure 1.1, we observe a decline in profits from \$37,553 to \$31,432 between 2013 to 2014. Another possible factor that could have contributed to the decline in profits would be the rise in shipping costs. As inferred from Figure 5.1, shipping costs per quantity have increased from \$9,363 to \$10,484 from 2013 to 2014. The company can opt for collaborative shipping to reduce cost while maintaining shipping efficiency. Collaborative shipping is where the same transport is loaded with bundling volumes from different shippers, aimed to reduce transportation costs. (Beliën *et al.* n.d.) Hence, by combining shipping charges with other organizations, the company is able to lower costs to raise profit margins.

Furthermore, from Figure 1.1, it is apparent that Papa New Guinea is not generating profit but rather it made a loss of \$419 over the years. Therefore, withdrawing from that market and shifting their focus on Australia and New Zealand could possibly be an appropriate strategy in increasing their cost savings.

References

Hayes, A (2020). *Cross-Selling: What Everyone Should Know*. [online] Investopedia. Available at: <https://www.investopedia.com/terms/c/cross-sell.asp> [Accessed 14 Feb. 2021].

Beliën, J. *et al.* (n.d.). *Collaborative shipping: Logistics in the sharing economy*. [online] INFORMS. Available at: [https://www.informs.org/ORMS-Today/Public-Articles/April-Volume-44-Number-2/Collaborative-shipping-Logistics-in-the-sharing-economy#:~:text=An%20example%20of%20such%20a,to%20fill%20the%20same%20transport.&text=With%20today's%20average%20vehicle%20fill,system%20is%20environmentally%20not%20sustainable](https://www.informs.org/ORMS-Today/Public-Articles/April-Volume-44-Number-2/Collaborative-shipping-Logistics-in-the-sharing-economy#:~:text=An%20example%20of%20such%20a,to%20fill%20the%20same%20transport.&text=With%20today's%20average%20vehicle%20fill,system%20is%20environmentally%20not%20sustainable.). [Accessed 14 Feb. 2021]