2024

Excel Assessment

LUIS GAUDENCIO

Contents

1. Objectives

- Review the overall figures of sales and profit of the business cumulatively for the past four years.
- Review the breakdown of sales and profit figures for each of the four years.
- Review if the returns are having an impact on the sales figures cumulatively over four years.
- Observe any correlations that different factors have on sales and profit figures cumulatively over four years.
- Draw conclusions from the various findings using the above parameters.
- Give a summary on how the company can improve its performances on sales and profits for the next and upcoming years.

2. Sales & Profit Over a Cumulative Four Years

The first thing I wanted to analyse with the given data was the sales by all three categories (Technology, Furniture and Office Supplies) over a four-year period.

I found that all three categories were performing well with their sales.

Category	Sum of Sales
Technology	£ 836,154.03
Furniture	£ 741,999.80
Office Supplies	£ 719,047.03
Grand Total	**£ 2,297,200.86**

Table 2.1 – This table shows the sales of all three departments

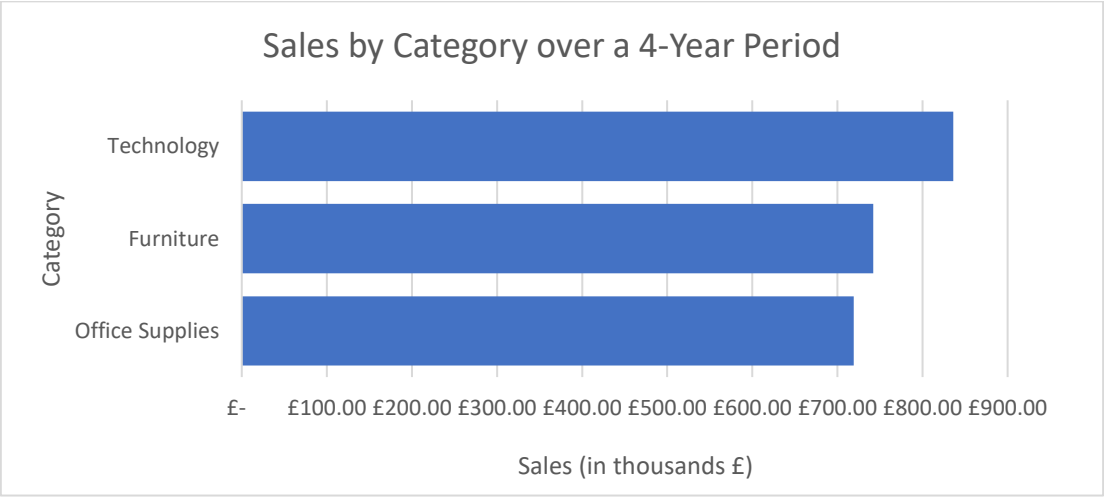

Fig. 2.2 – This graph shows a visual representation of the sales figures seen in Table 1.1

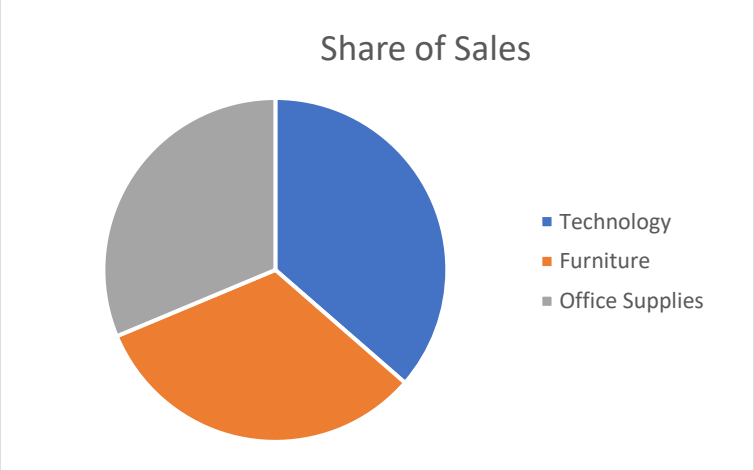

Fig. 2.3 – This pie chart shows the percentage share that each category held in the businesses sales

To further explain the percentage share of each of the categories, Technology, Furniture and Office Supplies held 36%, 32% and 31% of the sales share within the business. Therefore, it can be clearly seen that the business is making a significant and well proportionate number of sales across all their categories.

To delve deeper into the business, it was necessary to check the profit these categories were making the business in a four-year cumulative period.

Category	Sum of Profit	Sum of Sales	Margin
Technology	£ 145,454.95	£ 836,154.03	17%
Office Supplies	£ 122,490.80	£ 719,047.03	17%
Furniture	£ 18,451.27	£ 741,999.80	2%
Grand Total	**£ 286,397.02**	**£ 2,297,200.86**	12%

Table 2.4 – This table shows the total profit and sales for each of the three categories and their percentage margin

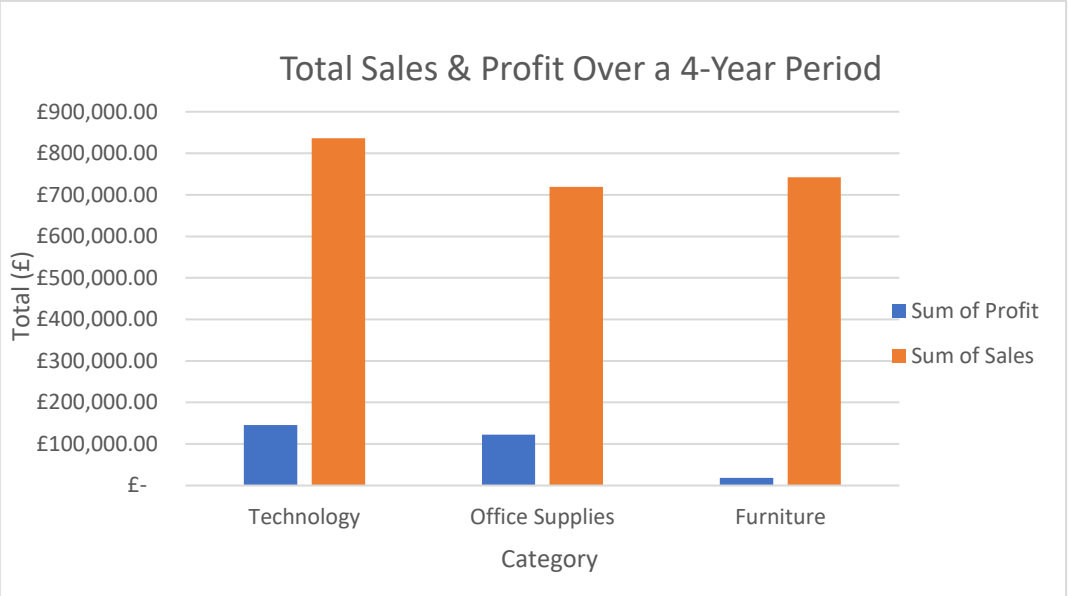

Fig. 2.5 – This bar graph gives a visual representation of the above table (Table 2.4)

By delving deeper and plotting the total sales and the total profit side-by-side we can identify a problem. It can be seen that both Technology and Office Supplies have a margin of 17%, which is above the normal average of a 10% margin. The problem can be identified in the Furniture category, where there is a margin of only 2%, which is considered very low. It can also be observed from Table 2.4 that the low margin coming from Furniture is having an impact on the overall margin of the company – bringing it to 12%.

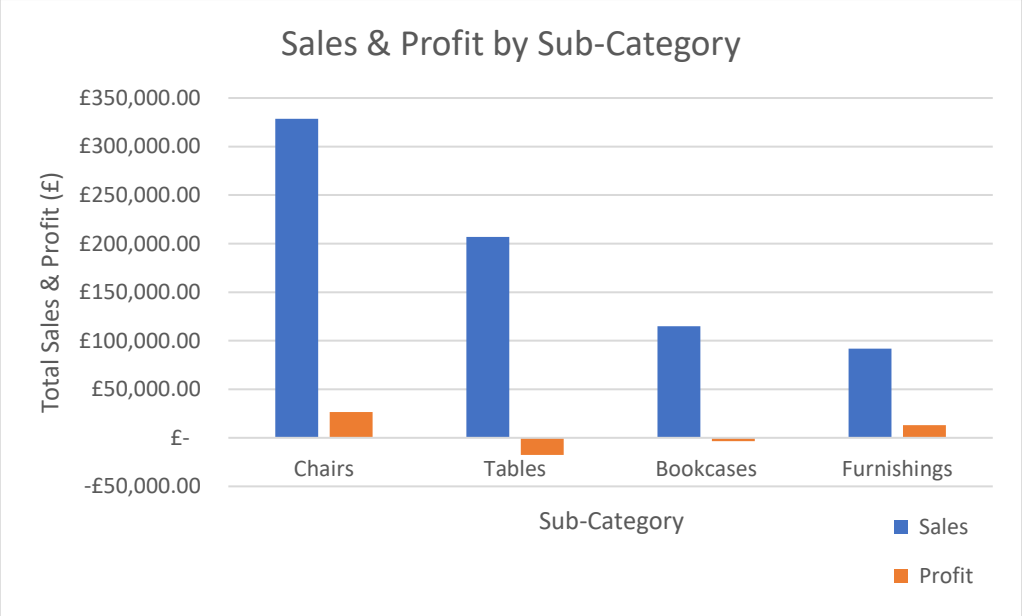

Fig. 2.6 – A bar graph showing the furniture category into its sub-categories

By looking at the data plotted in the above graph (Fig. 2.6), it can be observed that the furniture category is being dragged down by two of its sub-categories, being tables and bookcases. Both these sub-categories are not making the company any money and unfortunately making the company lose money. Further assessments and comments will be made in the conclusion section of this report.

3. Overall Year-by-Year Review

In this section, a year-by-year review will be explored and evaluate any trend or pattern that could have been missed in the four-year cumulative data.

Year	Total Sales	Total Profit	Margin
2014	£ 484,247.50	£ 49,543.97	10%
2015	£ 470,532.51	£ 61,618.60	13%
2016	£ 609,205.60	£ 81,795.17	13%
2017	£ 733,217.26	£ 93,439.27	13%

Table 3.1 – This table is showing how the company performed overall in terms of sales and profit

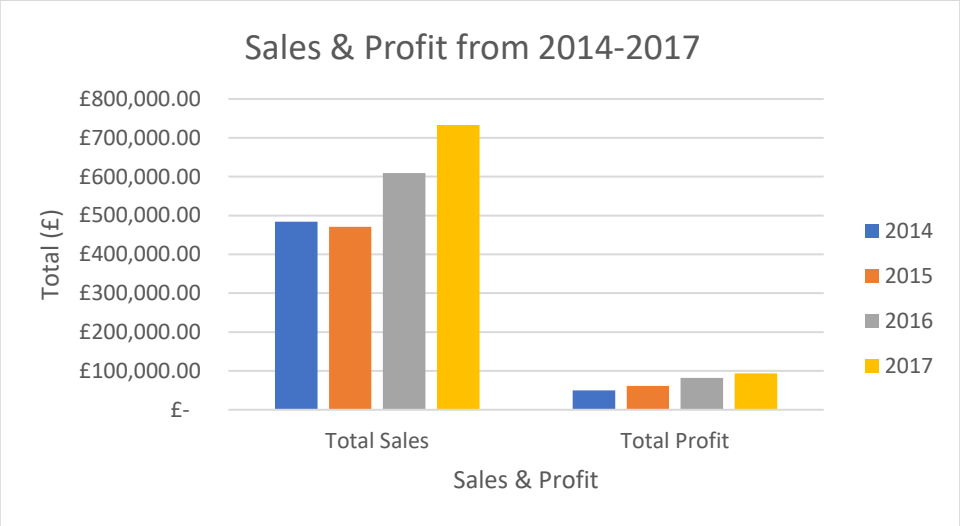

Fig. 3.2 – This bar graph gives a visual representation of the above table (Table 3.1)

From this data, we can see that the company performed quite well year upon year from 2014 to 2017. There was a 2.89% decrease in sales in 2015 from 2014, but this small percentage decrease is not drastic enough to raise alarms. Especially because the sales percentage difference from 2015 to 2016 was an increase of 25.69% and then another increase from 2016 to 2017 of 18.48%.

Even with a slight oscillation in sales figures, we can observe that the total profit increased year upon year. This year-on-year profit increase was averaged out to be 21.05%. Also, a healthy margin was maintained every year from 2014 to 2017.

4. Performance by State Over a Cumulative Four Years

In this section a state review will be examined, this is where we take a deeper dive and see how each state is performing towards the total sales and profit of the company.

4.1. Sales by State

State	Total Sales
California	£ 457,687.63
New York	£ 310,876.27
Texas	£ 170,188.05
Washington	£ 138,641.27
Pennsylvania	£ 116,511.91
Florida	£ 89,473.71
Illinois	£ 80,166.10
Ohio	£ 78,258.14
Michigan	£ 76,269.61
Virginia	£ 70,636.72
North Carolina	£ 55,603.16
Indiana	£ 53,555.36
Georgia	£ 49,095.84
Kentucky	£ 36,591.75
New Jersey	£ 35,764.31
Arizona	£ 35,282.00
Wisconsin	£ 32,114.61
Colorado	£ 32,108.12
Tennessee	£ 30,661.87
Minnesota	£ 29,863.15
Massachusetts	£ 28,634.43
Delaware	£ 27,451.07
Maryland	£ 23,705.52
Rhode Island	£ 22,627.96
Missouri	£ 22,205.15
Oklahoma	£ 19,683.39
Alabama	£ 19,510.64
Oregon	£ 17,431.15
Nevada	£ 16,729.10
Connecticut	£ 13,384.36
Arkansas	£ 11,678.13
Utah	£ 11,220.06
Mississippi	£ 10,771.34
Louisiana	£ 9,217.03
Vermont	£ 8,929.37
South Carolina	£ 8,481.71
Nebraska	£ 7,464.93
New Hampshire	£ 7,292.52
Montana	£ 5,589.35
New Mexico	£ 4,783.52
Iowa	£ 4,579.76
Idaho	£ 4,382.49
Kansas	£ 2,914.31
District of Columbia	£ 2,865.02
Wyoming	£ 1,603.14
South Dakota	£ 1,315.56
Maine	£ 1,270.53
West Virginia	£ 1,209.82
North Dakota	£ 919.91

Table 4.1.1 – A table showing the total number of sales that each state accumulated throughout 2014 to 2017

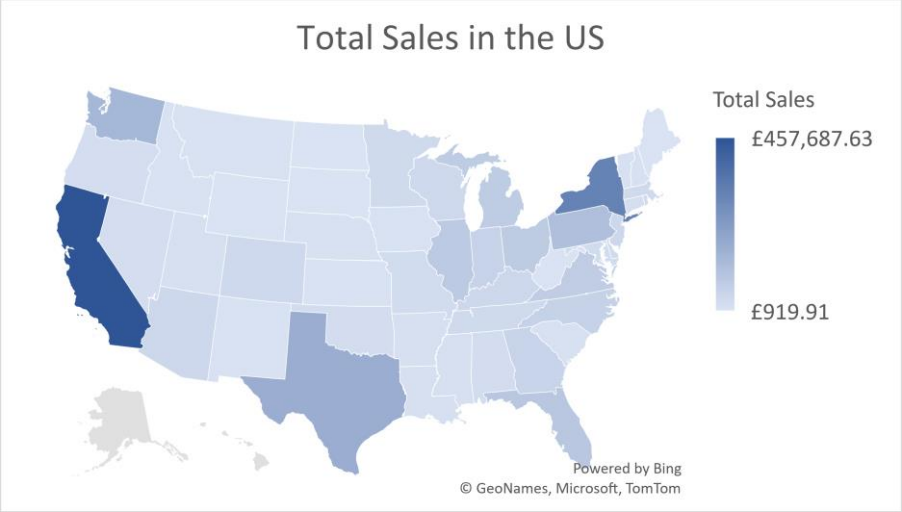

Fig. 4.1.2 – A map of the US showing a visual representation of the above table (Table 4.1.1)

From the above table (Table 4.1.1) and figures (Fig. 4.1.2 and Fig. 4.1.3) we can see that the five top performing states by total sales are California, New York, Texas, Washington and Pennsylvania, which have sales totalling six-figures. In the next section, we will see how the profit will compare to the overall sales by state.

4.2. Profit by State

State	Sum of Profit
California	£ 76,381.39
New York	£ 74,038.55
Washington	£ 33,402.65
Michigan	£ 24,463.19
Virginia	£ 18,597.95
Indiana	£ 18,382.94
Georgia	£ 16,250.04
Kentucky	£ 11,199.70
Minnesota	£ 10,823.19
Delaware	£ 9,977.37
New Jersey	£ 9,772.91
Wisconsin	£ 8,401.80
Rhode Island	£ 7,285.63
Maryland	£ 7,031.18
Massachusetts	£ 6,785.50
Missouri	£ 6,436.21
Alabama	£ 5,786.83
Oklahoma	£ 4,853.96
Arkansas	£ 4,008.69
Connecticut	£ 3,511.49
Nevada	£ 3,316.77
Mississippi	£ 3,172.98
Utah	£ 2,546.53
Vermont	£ 2,244.98
Louisiana	£ 2,196.10
Nebraska	£ 2,037.09
Montana	£ 1,833.33
South Carolina	£ 1,769.06
New Hampshire	£ 1,706.50
Iowa	£ 1,183.81
New Mexico	£ 1,157.12
District of Columbia	£ 1,059.59
Kansas	£ 836.44
Idaho	£ 826.72
Maine	£ 454.49
South Dakota	£ 394.83
North Dakota	£ 230.15
West Virginia	£ 185.92
Wyoming	£ 100.20
Oregon	-£ 1,190.47
Florida	-£ 3,399.30
Arizona	-£ 3,427.92
Tennessee	-£ 5,341.69
Colorado	-£ 6,527.86
North Carolina	-£ 7,490.91
Illinois	-£ 12,607.89
Pennsylvania	-£ 15,559.96
Ohio	-£ 16,971.38
Texas	-£ 25,729.36

Table 4.2.1 – A table showing the total number of profit that each state accumulated throughout 2014 to 2017

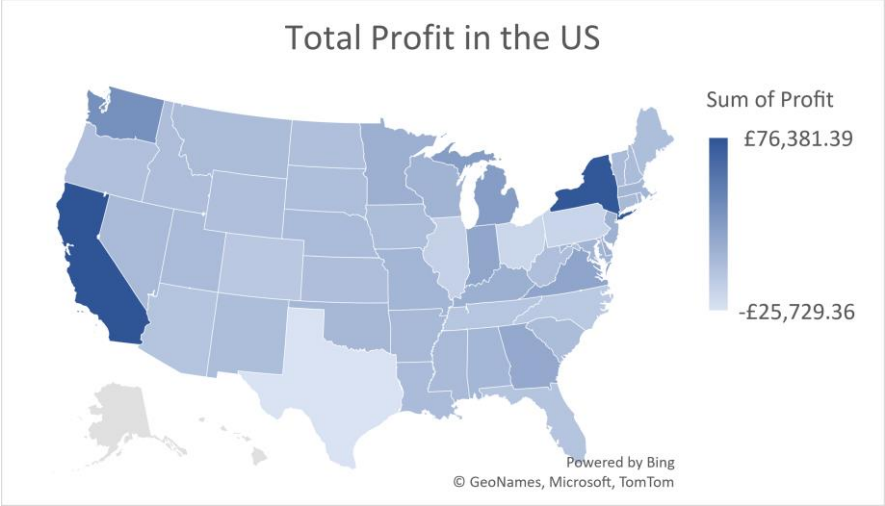

Fig. 4.2.2 – A map of the US showing a visual representation of the above table (Table 3.2.1)

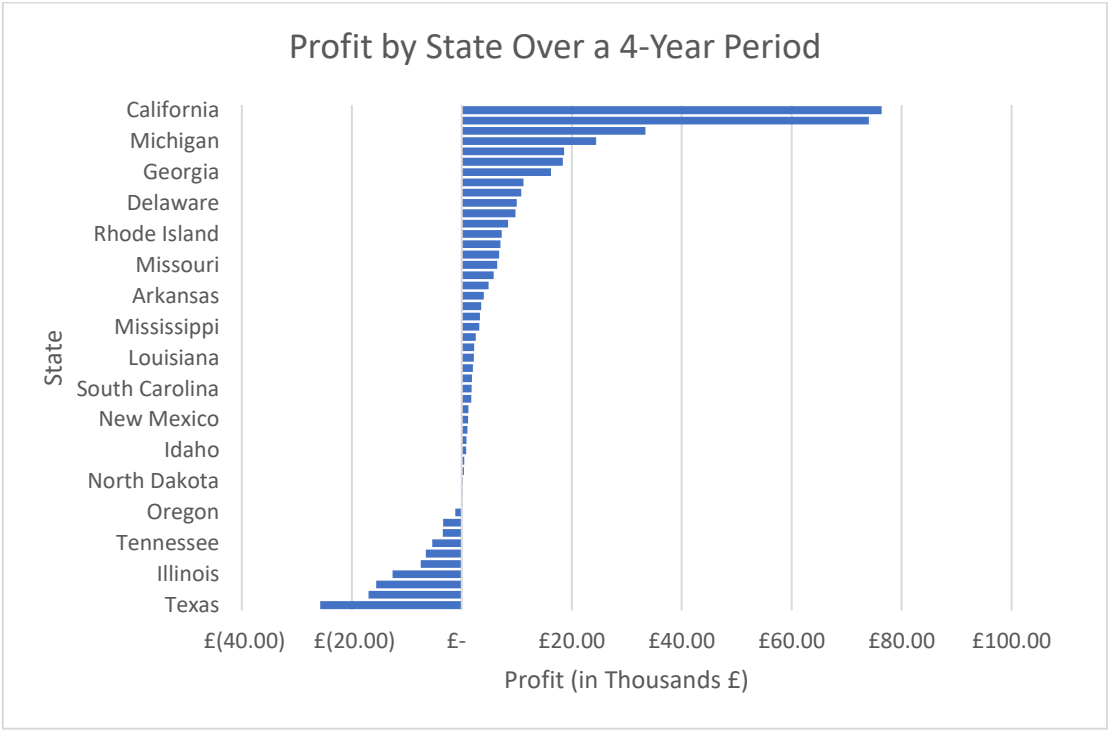

Fig. 4.2.3 – A bar chart showing another visual representation of Table 3.2.1 where it shows the profit of some states stacked up against each other

From the data that can be observed in this section, we can see that two of the five best performers for total sales are now in the bottom three performers for profit. In the upcoming sections we will dive deeper as to why this could be the case.

5. Performance of Discounts

State	Average Discount	Profit
Alabama	0%	€ 5,786.83
Arkansas	0%	€ 4,008.69
District of Columbia	0%	€ 1,059.59
Georgia	0%	€ 16,250.04
Indiana	0%	€ 18,382.94
Iowa	0%	€ 1,183.81
Kansas	0%	€ 836.44
Kentucky	0%	€ 11,199.70
Louisiana	0%	€ 2,196.10
Maine	0%	€ 454.49
Minnesota	0%	€ 10,823.19
Mississippi	0%	€ 3,172.98
Missouri	0%	€ 6,436.21
Nebraska	0%	€ 2,037.09
North Dakota	0%	€ 230.15
Oklahoma	0%	€ 4,853.96
South Carolina	0%	€ 1,769.06
South Dakota	0%	€ 394.83
Vermont	0%	€ 2,244.98
Virginia	0%	€ 18,597.95
Wisconsin	0%	€ 8,401.80
New Jersey	0%	€ 9,772.91
Maryland	1%	€ 7,031.18
Delaware	1%	€ 9,977.37
Michigan	1%	€ 24,463.19
Connecticut	1%	€ 3,511.49
New Hampshire	1%	€ 1,706.50
Massachusetts	2%	€ 6,785.50
Rhode Island	2%	€ 7,285.63
New York	6%	€ 74,038.55
New Mexico	6%	€ 1,157.12
Utah	6%	€ 2,546.53
Nevada	6%	€ 3,316.77
Washington	6%	€ 33,402.65
Montana	7%	€ 1,833.33
California	7%	€ 76,381.39
West Virginia	8%	€ 185.92
Idaho	9%	€ 826.72
Wyoming	20%	€ 100.20
North Carolina	28%	-€ 7,490.91
Oregon	29%	-€ 1,190.47
Tennessee	29%	-€ 5,341.69
Florida	30%	-€ 3,399.30
Arizona	30%	-€ 3,427.92
Colorado	32%	-€ 6,527.86
Ohio	32%	-€ 16,971.38
Pennsylvania	33%	-€ 15,559.96
Texas	37%	-€ 25,729.36
Illinois	39%	-€ 12,607.89

Table 5.1 – A table showing the correlation between average discounts per state and their profit over a four-year period

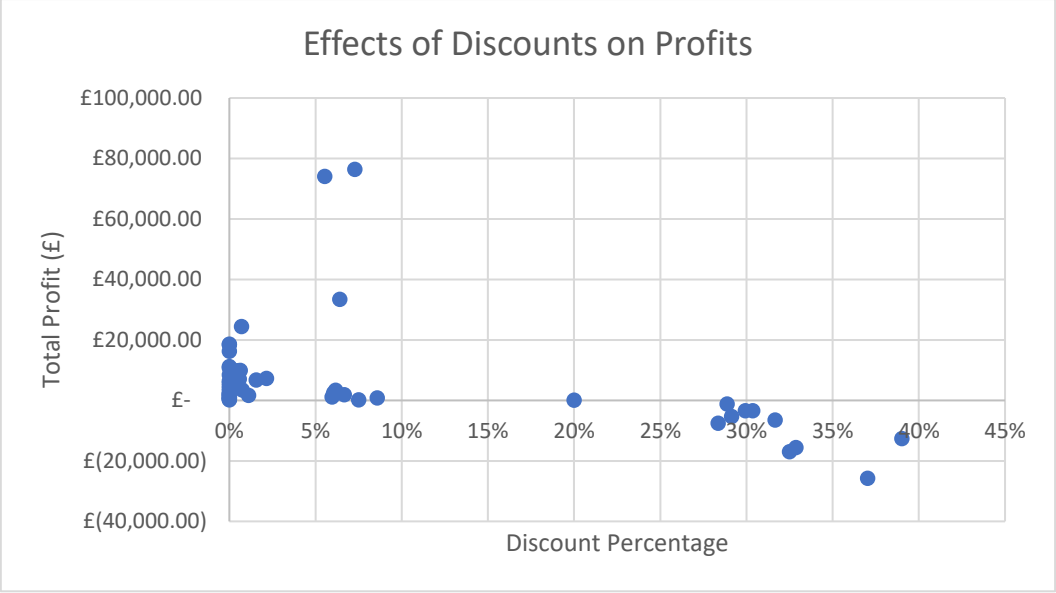

Fig. 5.2 – A scatter chart showing a visual representation of the above table (Table 5.1)

From this data it can be observed that a negative profit margin can be attributed to a higher average percentage discount. Any state that has an average discount percentage of above 20%, has a negative profit. When the data in this section is compared to the data in Section 4, it can be seen that the worst five states in terms of profit are in the top 10 performers of sales. Therefore, we can see that selling at a discounted price will drive up the sales, but these discounts are negatively impacting the profit, meaning the company is losing money by having these states offering high discounts to customers.

6. Returns

In this section, we will research if returns are having a negative impact on the sales of the products and in turn, if they will effect profits in a negative way.

By looking at the return data we see that not many returns have occurred, but calculations were done to get exact figures. From the returns data, we see that the total amount being returned over the four-year period was £180,504.28 which is only 7.86% of our total sales of £2,297,200.86.

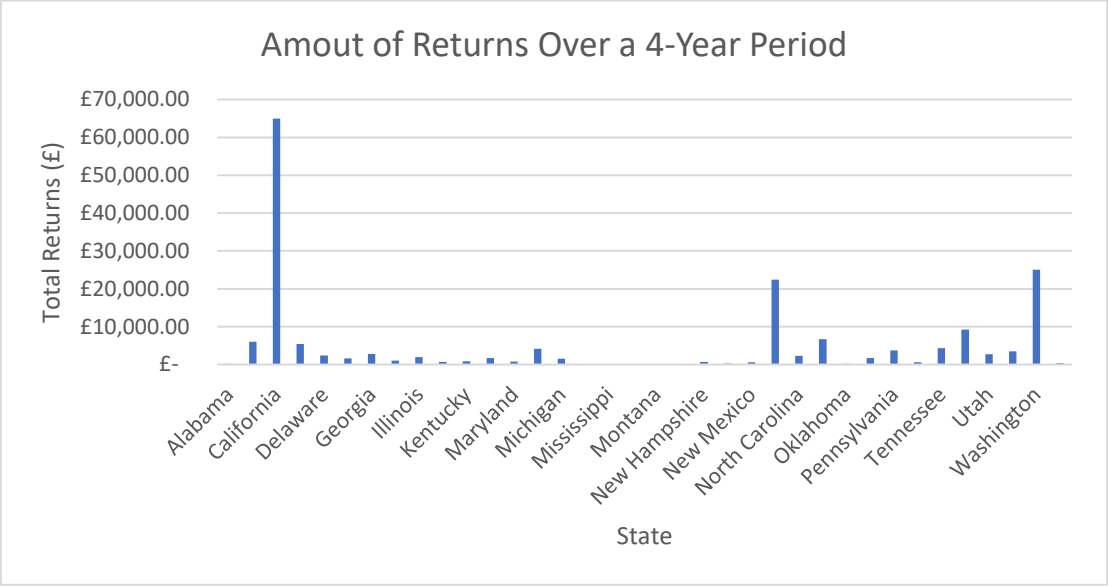

Fig. 6.1 – A bar chart showing the total amount of returns (£) that each state had over a four-year period

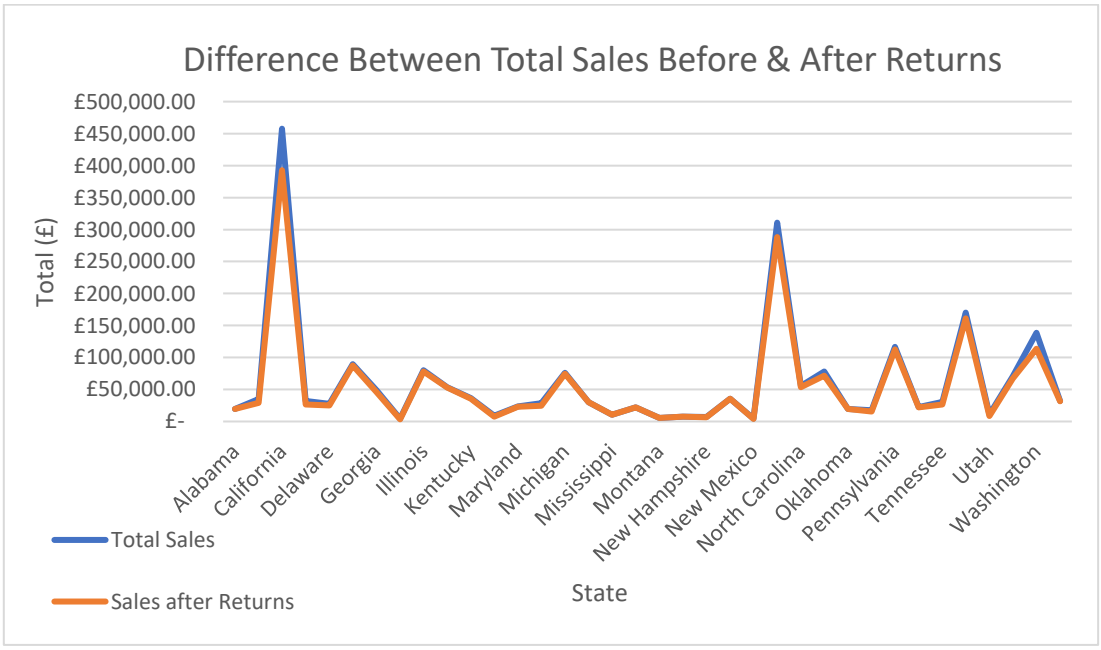

Fig. 6.2 – A line chart showing the difference in the total sales before and after factoring in the returns

As it can be observed in both the above figures, it can be seen that the states with the three highest levels of returns, which are California, Washington and New York are also the top three in terms of profit. Therefore, when observing the data, we can see that the returns in each state did not have a detrimental effect on their sales or their profit.

7. Seasonal Effects

To delve deeper into how sales can be improved, an analysis into sales during the seasons must be conducted. Therefore, we want to see how the profit looks like during each season of the year to observe any tends that can benefit the company. For guidance, winter, spring, summer and autumn fall into Q1, Q2, Q3 and Q4 respectively.

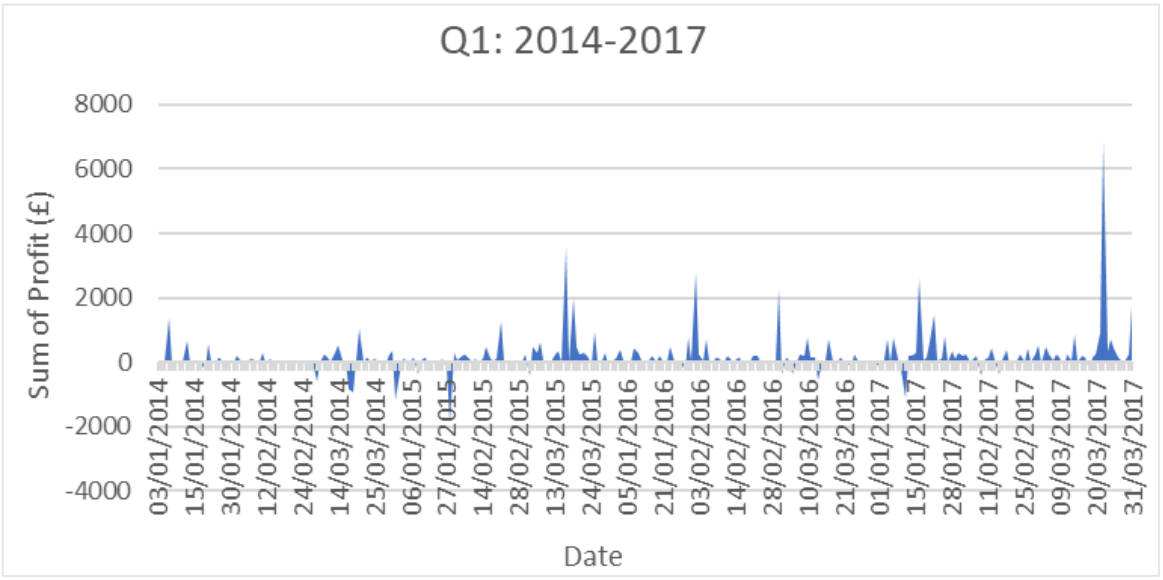

Fig. 7.1 – An area graph showing the total profit in all Q1s/Winters from 2014 to 2017

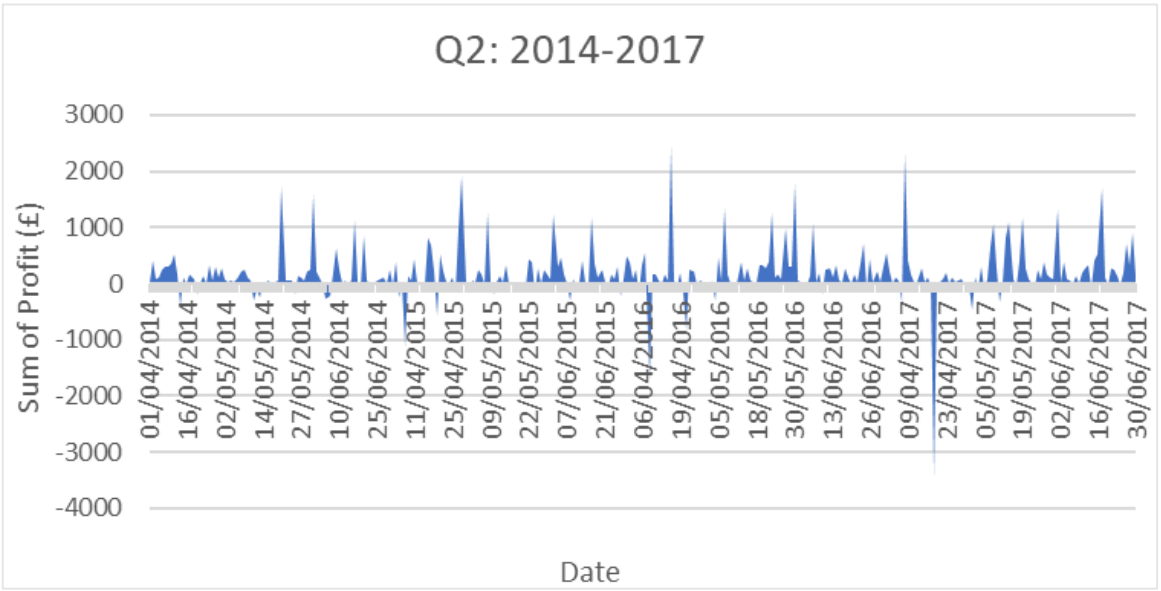

Fig. 7.2 – An area graph showing the total profit in all Q2s/Springs from 2014 to 2017

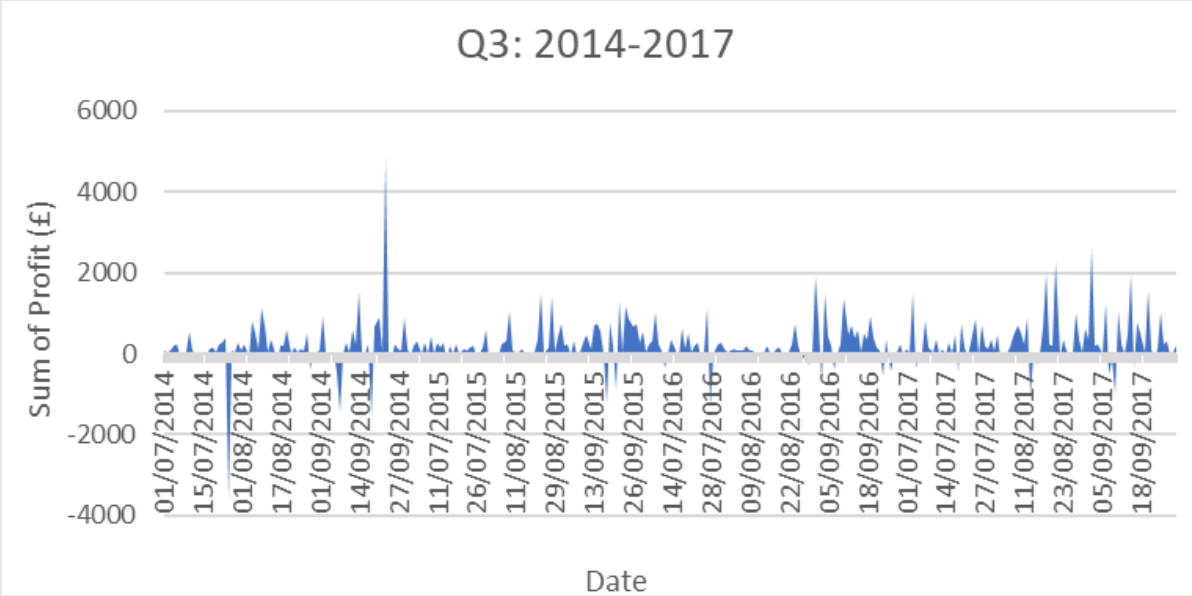

Fig. 7.3 – An area graph showing the total profit in all Q3s/Summers from 2014 to 2017

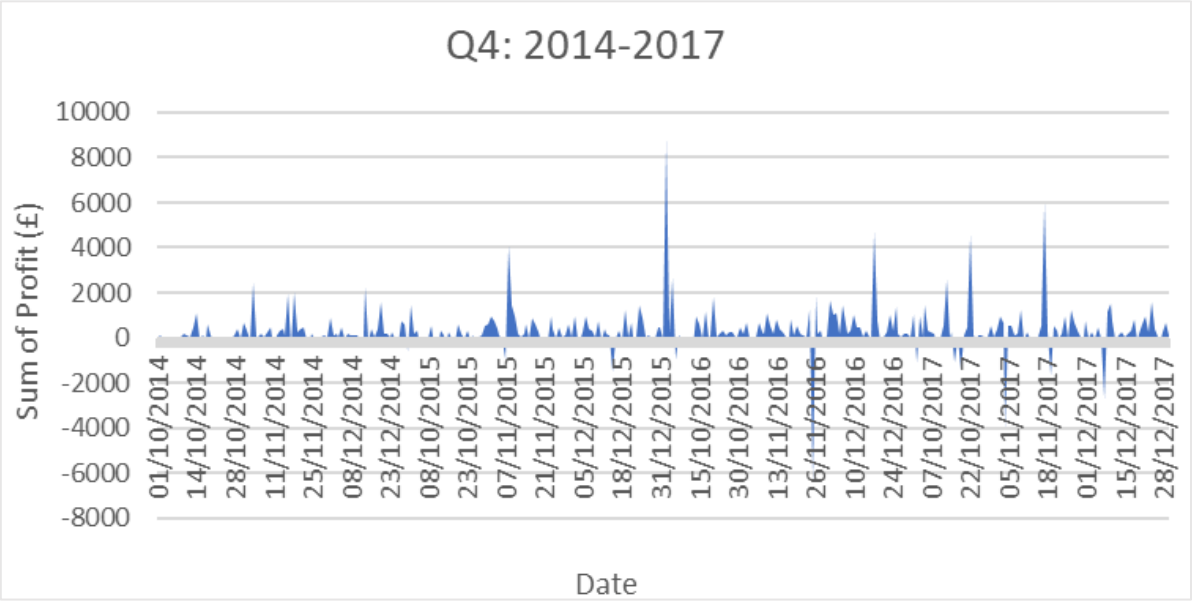

Fig. 7.4 – An area graph showing the total profit in all Q4s/Autumns from 2014 to 2017

As it can be observed from Fig. 7.1 to Fig. 7.4 the company tends to have good phases in every quarter, but it can be seen that the best performing quarter during the last four years has been in Q4 which would correspond to autumn time. Further conclusions and advice will be drawn from this data in the Conclusion section of this report.

8. Conclusion

In this conclusion, mistakes from the four-year period will be highlighted so that these mistakes will not be repeated in the future, and an action plan to further the business.

We have observed that the business is making a great number of sales over the three main categories of technology, office supplies and furniture. Each of those categories hold an almost identical percentage of sales for the business. But, by delving deeper we observe that the profit levels do not correspond the same way for the sales, with the furniture category only having a 2% profit margin, while the other two categories are performing above average with a 17% profit margin. Thus, the total profit margin for the company is being dragged down because of low profit margin of the furniture category.

A further investigation was conducted into the furniture category and was broken down into its sub-categories. All four sub-categories had good sales, but again, the profit margin in these sub-categories did not reach the average margin of 10%, except for furnishing where the profit margin was 14%. Two of those sub-categories are losing money which is tables and bookcases.

Therefore, an investigation is needed to investigate where improvements can be made to the profit of the furniture category. This would most probably lay in the overheads associated with the products, such as our suppliers. Is there a possibility of negotiating with the current suppliers or if not, potentially look for other suppliers for better pricing.

Discounts should also be limited; we have previously observed that a high average discount level relates to the business losing money. Discounts will drive up sales as seen in Texas, but we have seen that these sales in Texas are losing money for the company. Therefore, the recommendation will be to limit the discounts where no state should be averaging more than a 20% discount.

From the figures in Section 7, we have observed that the highest level if profit is in Q4. To increase the sales of the company, it is recommended that more money is spent on advertising mainly in Q4 of each year, especially when we see spikes before the Christmas period. If the marketing budget allows to go further, some spending can be allocated into the end of Q1 and Q2, as significant amount of profit is made throughout the whole of Q2. More time and resources should be put into states that are not seeing many sales.

By looking at the returns data, we can see that this amount has been minimal compared to the number of sales generated. From the data no negative impact has come from the returns. A further look into the reasonings why an item is returned should be investigated to see what is the most common reason or complaint. Steps should be in place to keep returns minimal just as they are currently but not to exceed the current rate of return.

Appendix

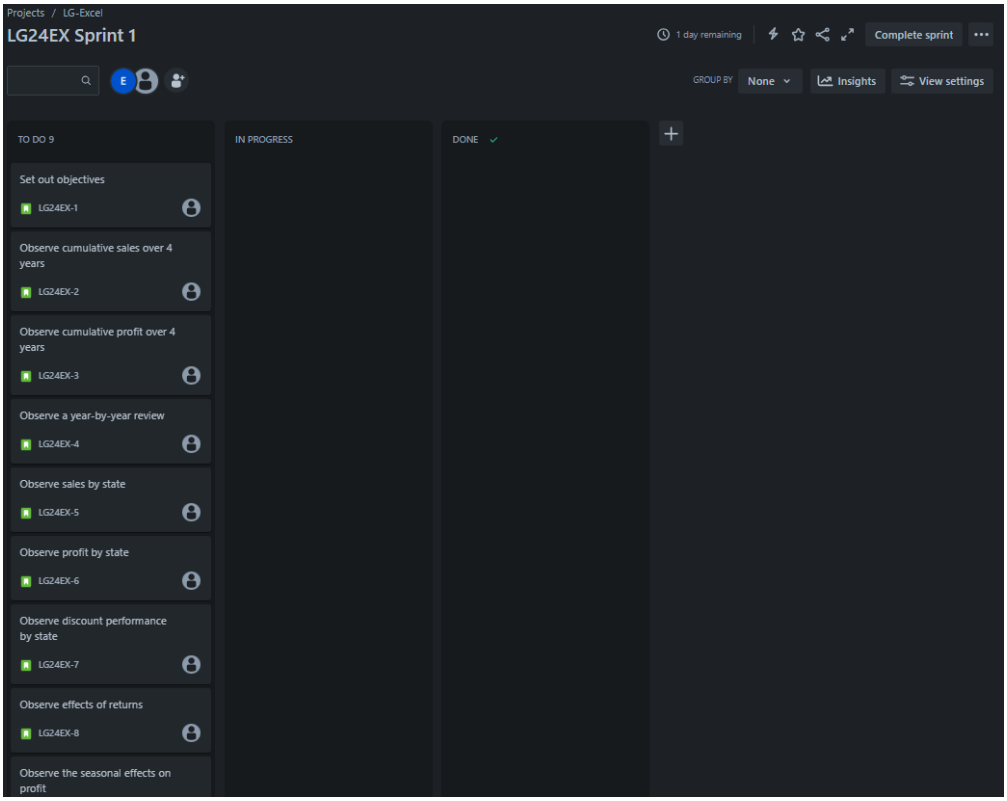

Fig. 1 – Showing the kanban board for the tasks that need to be completed for this assessment

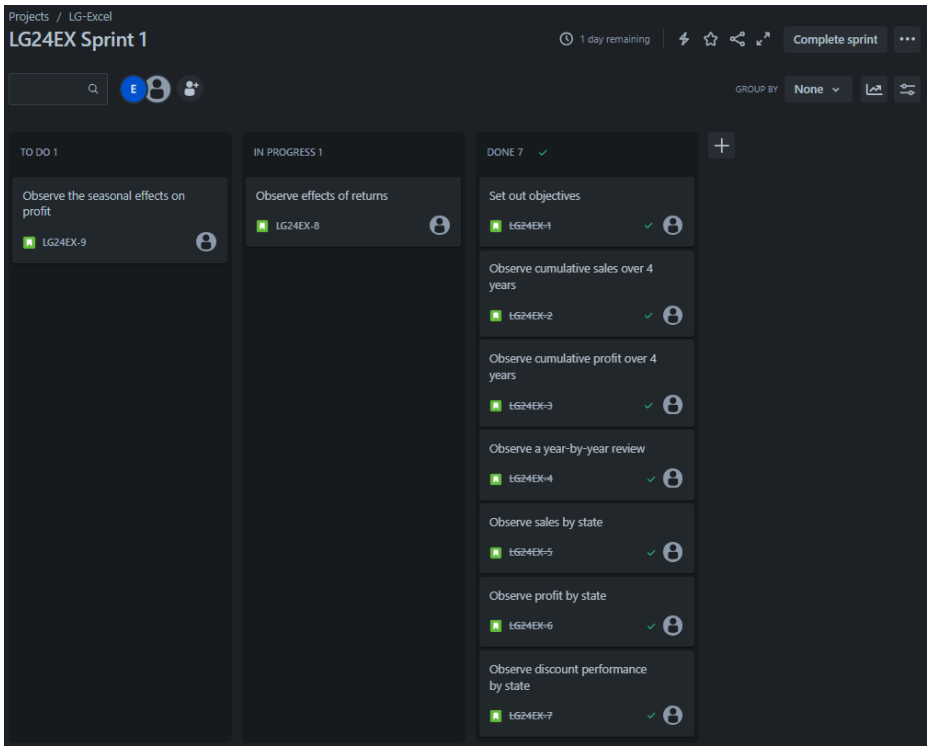

Fig. 2 – Showing the kanban board with progress being made

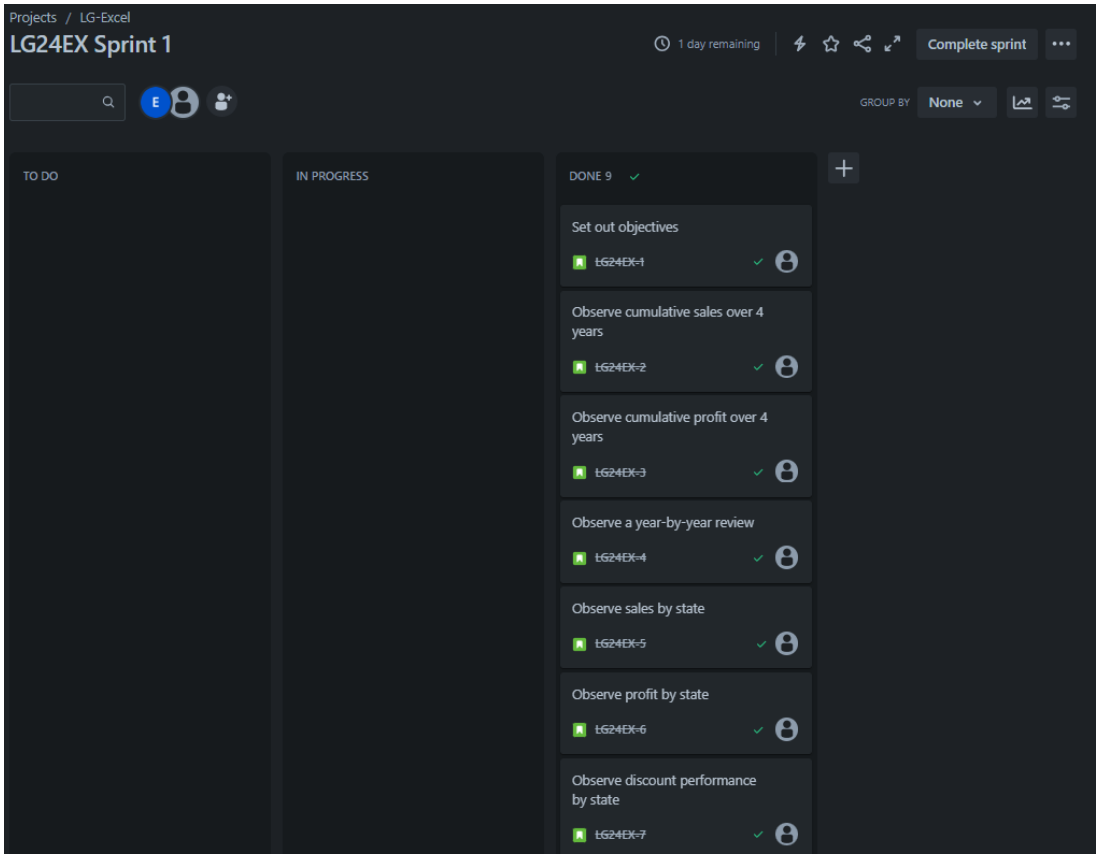

Fig. 3 – Showing the kanban board with all tasks completed

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