

Predictive Analytics on Book Sales

The line chart below is the net sales from publishing year 2017 to publishing year 2022, and a projection of what the net sale might look like in 2023; This being that a \$6,888.97k net sale will be achieved.

The various Values by the right are important values from the dataset. More can be seen on these cards in the following pages.

\$104K

Total Cost

\$391K

Net Sales

\$131K

Profit

35K

Units Sold

16K

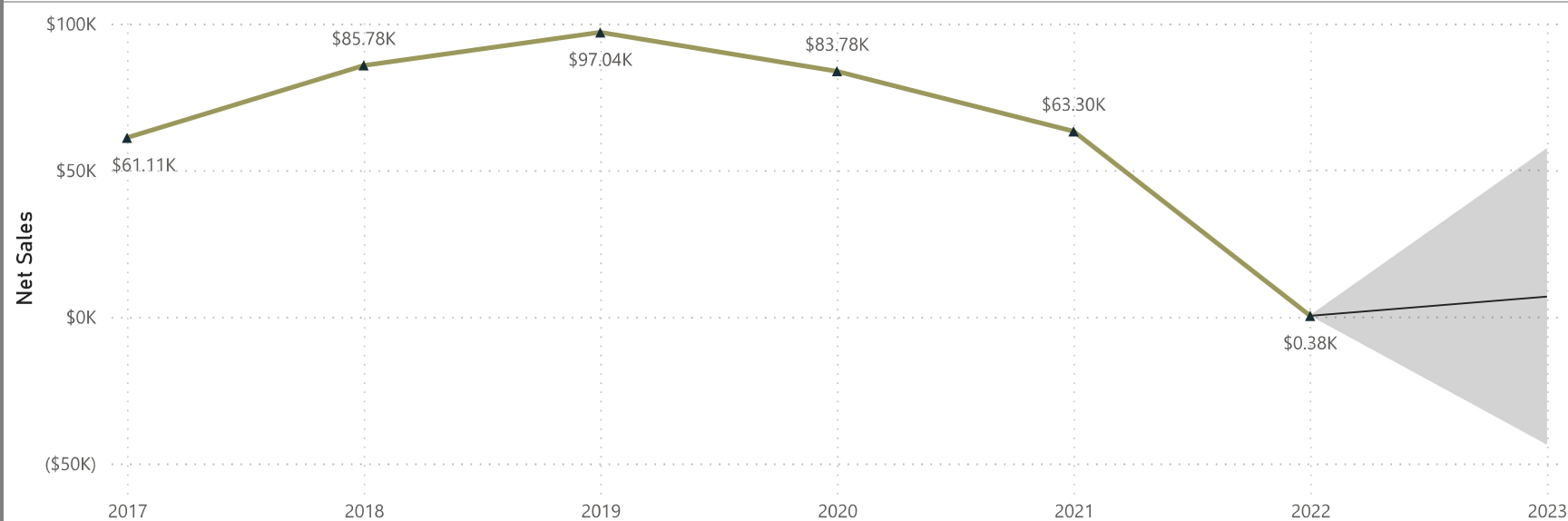
Inventory Level

\$235K

Publisher Revenue

Estimated 2023 Net Sales

This is the projected height net sales can get to by year book was published



\$4,406

Weighted average net sale

3%

Repeat purchase Rate

4

Count of repeat purchases

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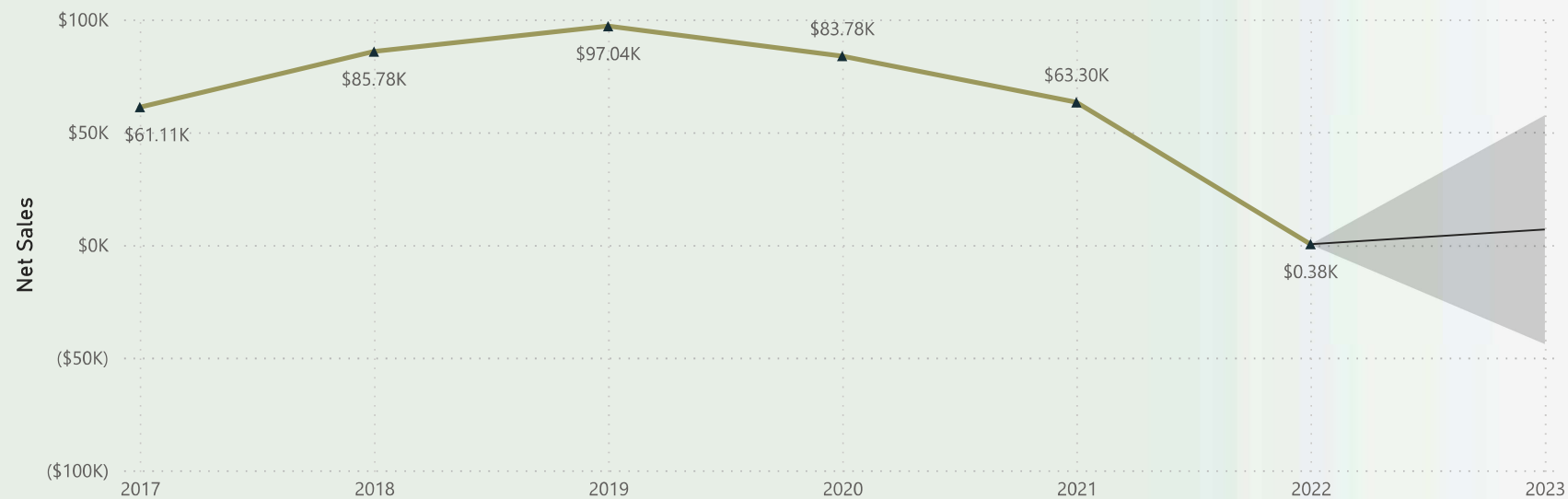
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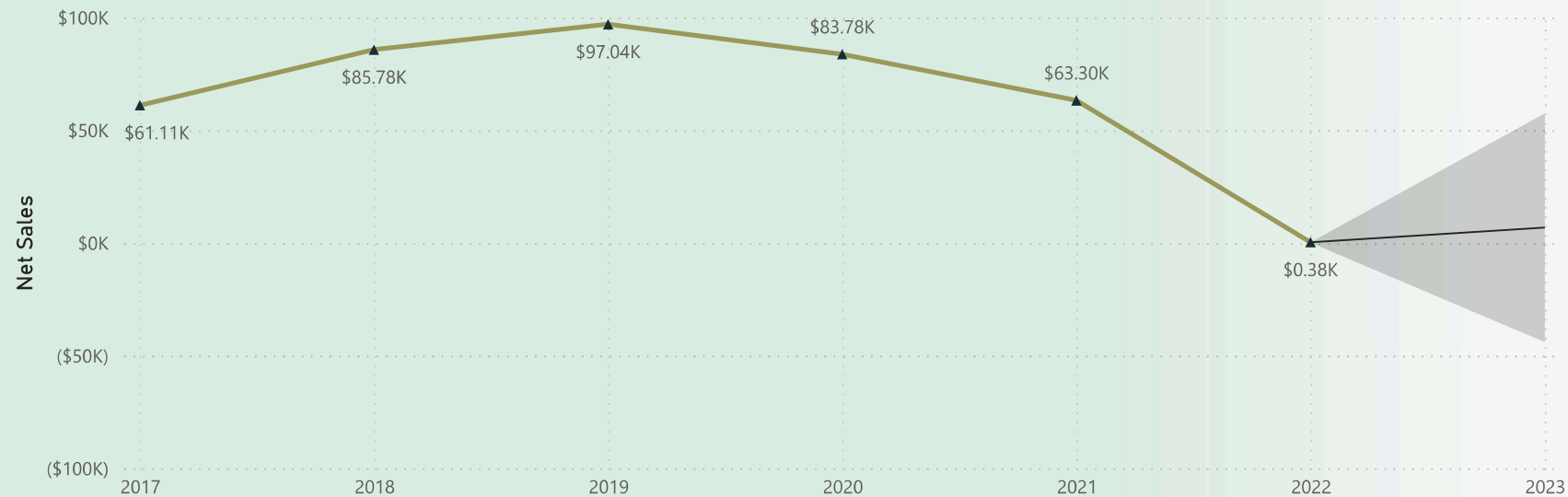
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Predictive Analytics on Book Sales

INTRODUCTION

This analysis is an analysis on book sales, it is diagnostic and predictive in nature. In this analysis, a sale of about \$6,889k might be by the year 2023, and about 670 units sold by the same year. A 3% customer repeat purchase rate was detected

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Cost of goods sold

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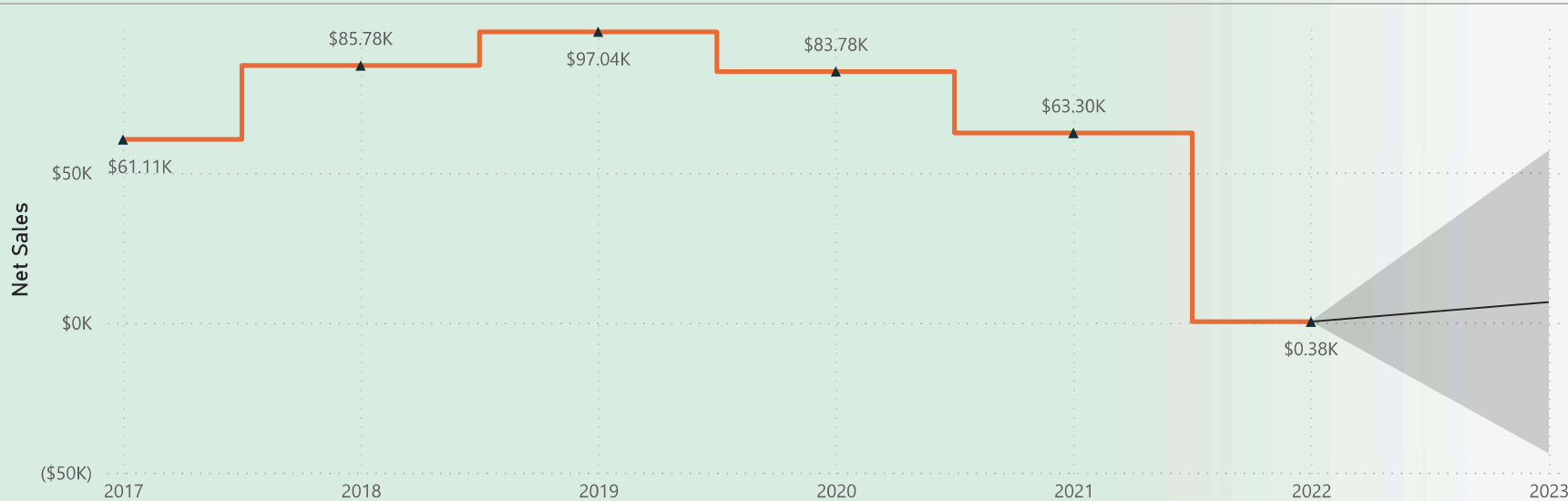
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PREDICTIVE ANALYTICS ON BOOK SALES

The line chart below is the net sales from publishing year 2017 to publishing year 2022, and a projection of what the net sale might look like in 2023; This being that a \$6,888.97k net sale might be achieved.

There's a 90% confidence that the net sale for publishing year 2023 will lie between -\$43,570.19k and \$57,348.13k.

\$391K

Net Sales

\$131K

Profit

\$104K

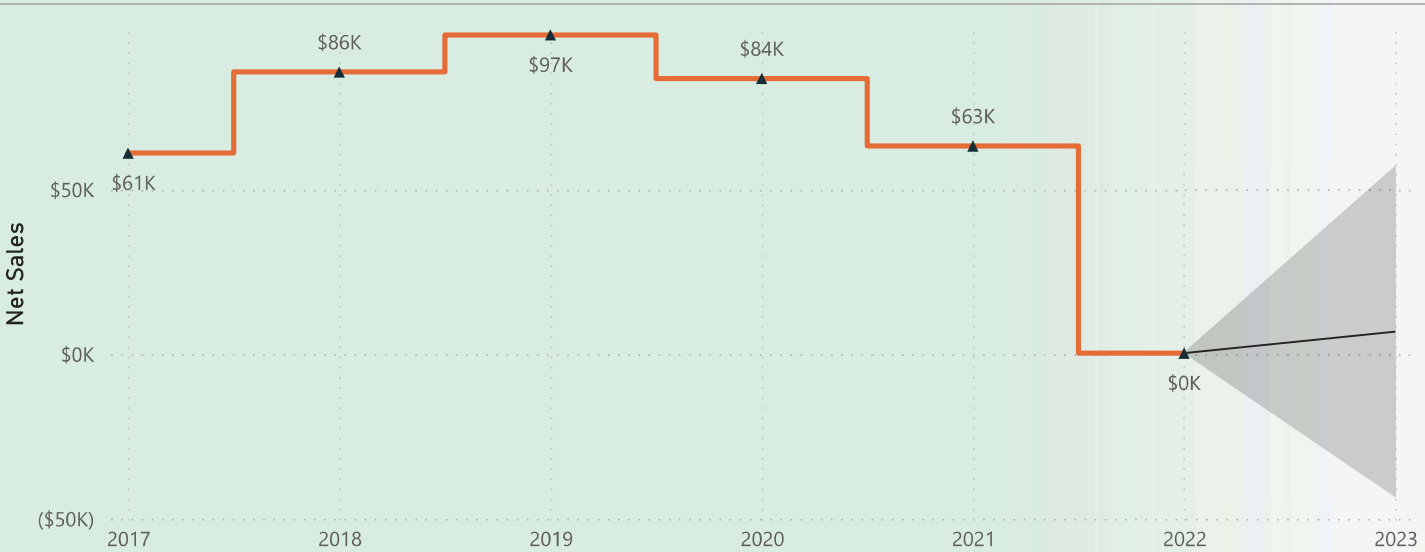
Cost of Goods Sold (COGS)

\$235K

Publisher Revenue

Estimated net sales 2023

This is the projected height net sales can get to by year book was published



Growth rate(net sales) by year quater

| Order Year | Order Quarter | Growth Rate(Net sales) |
|------------|---------------|------------------------|
| 2023 | 2nd | 192.2% |
| 2023 | 3rd | 95.7% |
| 2023 | 4th | 44.4% |
| 2024 | 1st | 32.5% |
| 2024 | 2nd | 24.8% |
| 2024 | 3rd | -2.8% |

The above table displays the growth rate of net sales from the first quarter of 2023 to the third quarter of 2024 when the orders were made. we find a negative value in the third quarter of 2024, this announces a great decline in order and sales of products.

UNITS SOLD AND PROJECTION OF UNITS TO BE SOLD

The line chart below is the unit of items sold from order date 15th of January 2023 to 10th of September 2024. From April 5th, 2024m there has been an upward trend in orders, and it is projected to be at 670 units sold by December 9th, 2024.

There's a 90% confidence that the number of units to be sold will lie between 631 and 709 units by December 9th, 2024.

35K

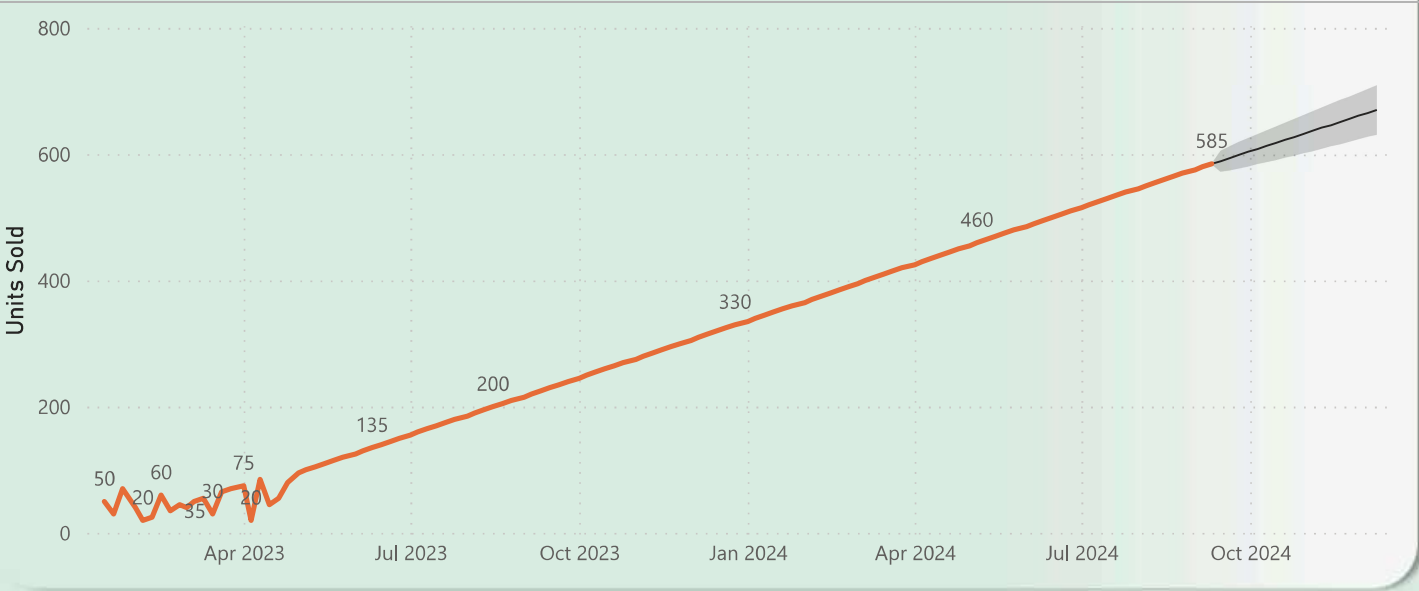
Units Sold

16K

Inventory Level

Units Sold by publishing year

This is the projected height units sold can get to by year book was published



Growth rate(units sold) by year quarter

| Order Year | Order Quarter | Units Sold | Growth Rate(U) |
|------------|---------------|------------|----------------|
| 2023 | 1st | 685 | |
| 2023 | 2nd | 1,830 | 167.2% |
| 2023 | 3rd | 3,555 | 94.3% |
| 2023 | 4th | 5,175 | 45.6% |
| 2024 | 1st | 6,795 | 31.3% |
| 2024 | 2nd | 8,415 | 23.8% |
| 2024 | 3rd | 8,250 | -2.0% |

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WEIGHED AND ARITHMETIC AVERAGE OF BOOK SALES

The weighted average is a type of average that takes into account the importance or weight of each value in this dataset.

The weighted average/mean gives a more accurate representation of this data, because it attaches, or gives special place to number of units/weights involved in the sale. Hence, the weighted average revenue gotten from each book that was sold is \$4,406k.

Whereas the arithmetic mean/average gotten per book is \$3,262k.

\$4,406

Weighted average book sale

\$3,262

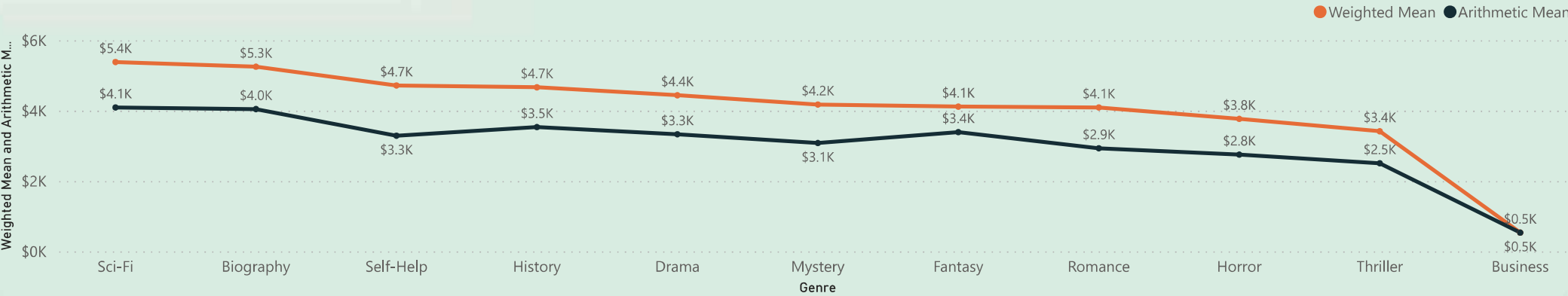
Arithmetic average book sale

Different averages/mean by genre

| Genre | Weighthed mean(sales) | Arithmetic mean |
|-----------|-----------------------|-----------------|
| Sci-Fi | \$5,385 | \$4,092 |
| Biography | \$5,251 | \$4,046 |
| Self-Help | \$4,719 | \$3,290 |
| History | \$4,666 | \$3,535 |
| Drama | \$4,439 | \$3,330 |
| Mystery | \$4,176 | \$3,081 |
| Fantasy | \$4,116 | \$3,391 |
| Romance | \$4,093 | \$2,932 |
| Horror | \$3,769 | \$2,751 |
| Thriller | \$3,415 | \$2,506 |
| Business | \$532 | \$532 |

Weighted and Arithmetic Mean

The weighted and arithmetic average/mean of the sold books by their respective genres



Cost of goods and Profit

Cost of goods and Profit generated from those goods by quarter in the various countries of interest.

\$131K

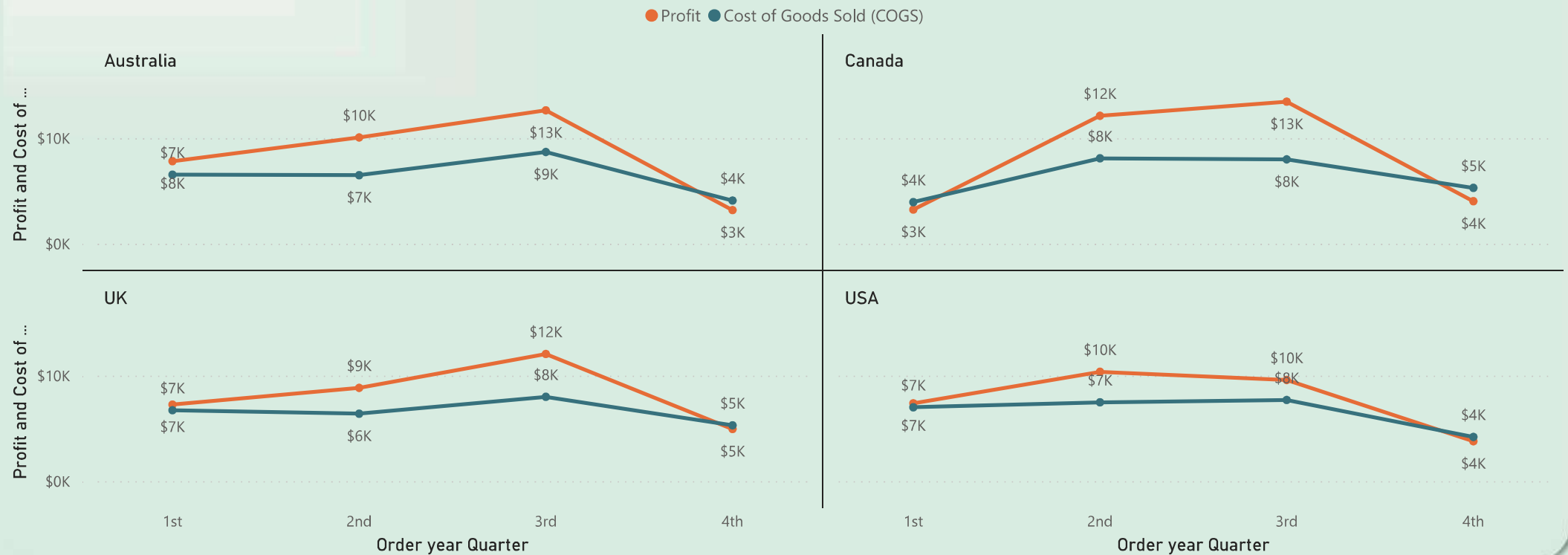
Profit

\$104K

Cost of Goods Sold

Profit and Cost of Goods Sold (COGS) by Order Quarter and Country

This is the profit and cost of books by the quarter they were ordered and country where order was made.



Repeat purchase frequency and rate

Maximum revenue path

Out of the 120 customers, only 4 of them made repeat purchases amounting to 3%.

The table by the right contains more details.

The decomposition tree below shows the track that yields maximum revenue. Books in the Fiction category sold more, books published by Penguin Random house generated most revenue, Books placed in the market segment of 'Drama fiction' also sold most, and retail sales were also made most amongst others.

4

Frequency of repeated purchases

3%

Rate of repeated purchases

Customers with a valid repeated purchase rate and life time values(LTV)

| Customer Segment | Purchases | Repeated purchase Rate | LTV | Profit |
|------------------------------------|-----------|------------------------|-----------|---------|
| <input type="checkbox"/> Retail | | | | |
| Rachel Lewis | 2 | 50% | \$9,716.1 | \$3,430 |
| <input type="checkbox"/> Wholesale | | | | |
| Emily White | 2 | 50% | \$5,665.5 | \$1,899 |
| Olivia Wilson | 2 | 50% | \$9,450.0 | \$3,270 |
| Quentin Martinez | 2 | 50% | \$8,113.5 | \$2,468 |

The Path yielding maximum Revenue



Sum of Gross Sales by Country and Genre

Genre ● Biography ● Business ● Drama ▶

