

Etsy Profitability and Material Loss Report

This report was used to optimize the pricing and material loss calculations used by a local Etsy store.

- The numbers in this study were pulled from a client selling handmade goods on Etsy.
- The details about the orders have been removed from this analysis but the numbers used were real.
- This project was posted on GitHub with permission from a client.

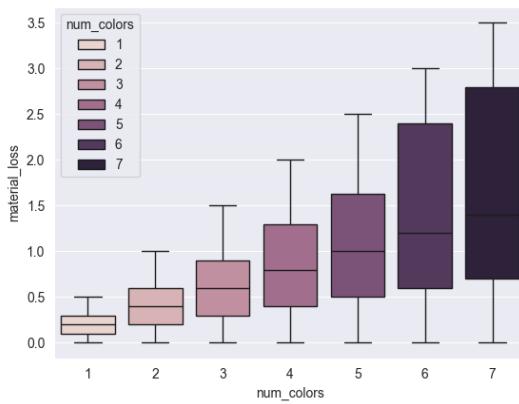
Features

- Generates synthetic data for test analysis using Panda DataFrames.
- Calculates profit and material loss from order length and width.
- Compares different pricing structure for product and calculates margins for each.
- Generates an HTML report for a client using Jupyter notebook.

Findings

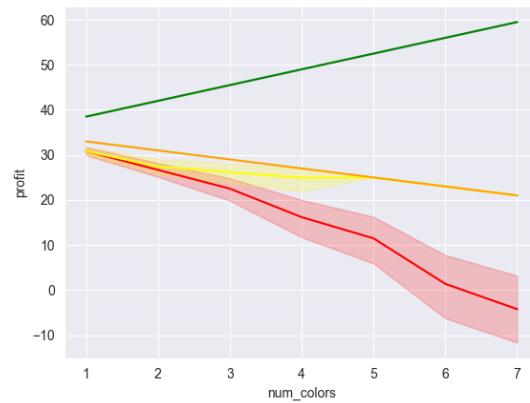
Material Loss vs Num Colors

- As num colors went up material loss went up.
- Material loss did not go up evenly for all orders.



Profit Chart

Four pricing structures were suggested in this report.



Price Ratings

- *Red Line: color surcharge = \$5 with no limits on order dimensions. (Price1)*
- *Yellow Line: color surcharge = \$5 and material loss < 1 unit (Price2)*
- *Orange Line: color surcharge = \$5 and length and width add up to 19 (Price3)*
- *Green Line: color surcharge = \$7 and length and width add up to 19 (Price4)*

Observations

- *Of these three pricing schemes, prices 2, price 3, and price 4 are profitable while price 1 is not.*
- *Price structure 4 has the highest profit margin.*
- *Pricing structures 2 and 3 are very similar, but price 3 is easier to calculate.*

Suggestions

- *Client should charge \$40 per item with a \$5 - \$7 surcharge per additional color*
- *Client should limit orders to ones whose length and width <=19*

Final Pricing Chart

Name	Min Profit	Max Profit	Mean Profit	Median Profit
Price 1	-28.0	33.0	17.31	25.0
Price 2	-1.0	33.0	26.83	29.0
Price 3	21.0	33.0	28.30	29.0
Price 4	38.5	59.5	46.73	45.5

Frameworks Versions at (09/16/2025)

- *python: 3.13*
- *pandas: 2.3.2*
- *numpy: 2.3.2*
- *seaborn: 0.13.2*
- *jupyterlab: 4.4.7*
- *jupyter_client: 8.6.3*
- *jupyter_core: 5.8.1*
- *jupyter_server: 2.17.0*

Project:

- *Product Profitability Report*
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- *Date: 09/16/2025*