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Objective

- To create a healthier whole wheat bread
- Provide target demographic of 18-44 year olds with a healthier alternative

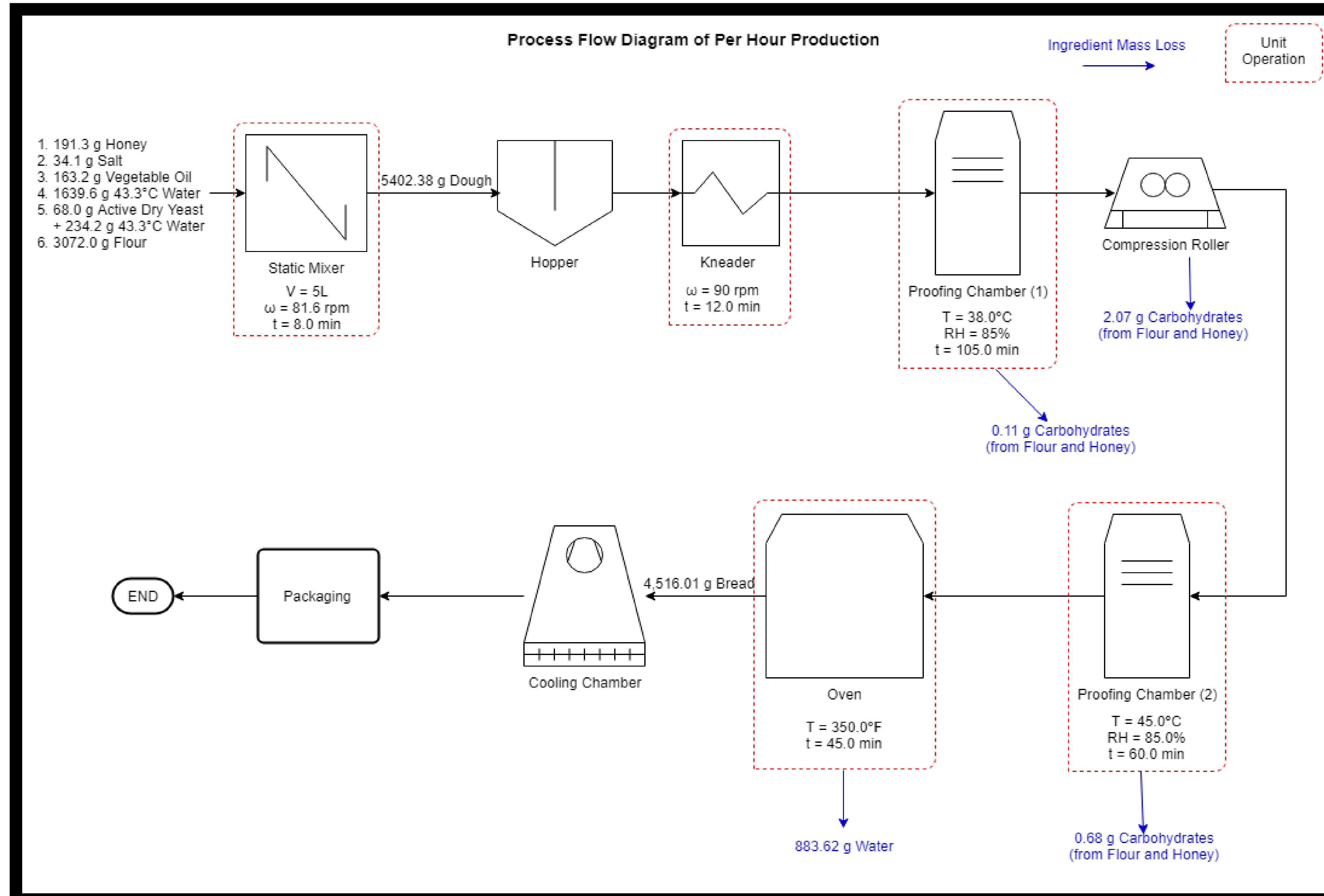
Impact & Sustainability

- Whole grain flours are metabolized by the body easier than processed reassembled grain flours, making them healthier.
- Encourage the consumption of whole grain breads over than of white breads.

Market Analysis

- Whole wheat bread, which makes up 16.1% of the total US bread production, had a revenue of 6.7 billion dollars with 400 million of that being profit in 2017
- Target demographic: 84% of 18-44 year olds purchased bread within the last six months

Unit Process	Optimized Variable	Parameter Minimized
Mixing	Mixing Speed	Cost
Kneading	Kneading Time	Cost
Fermentation	Temperature	Cost
Baking	Temperature	Cost

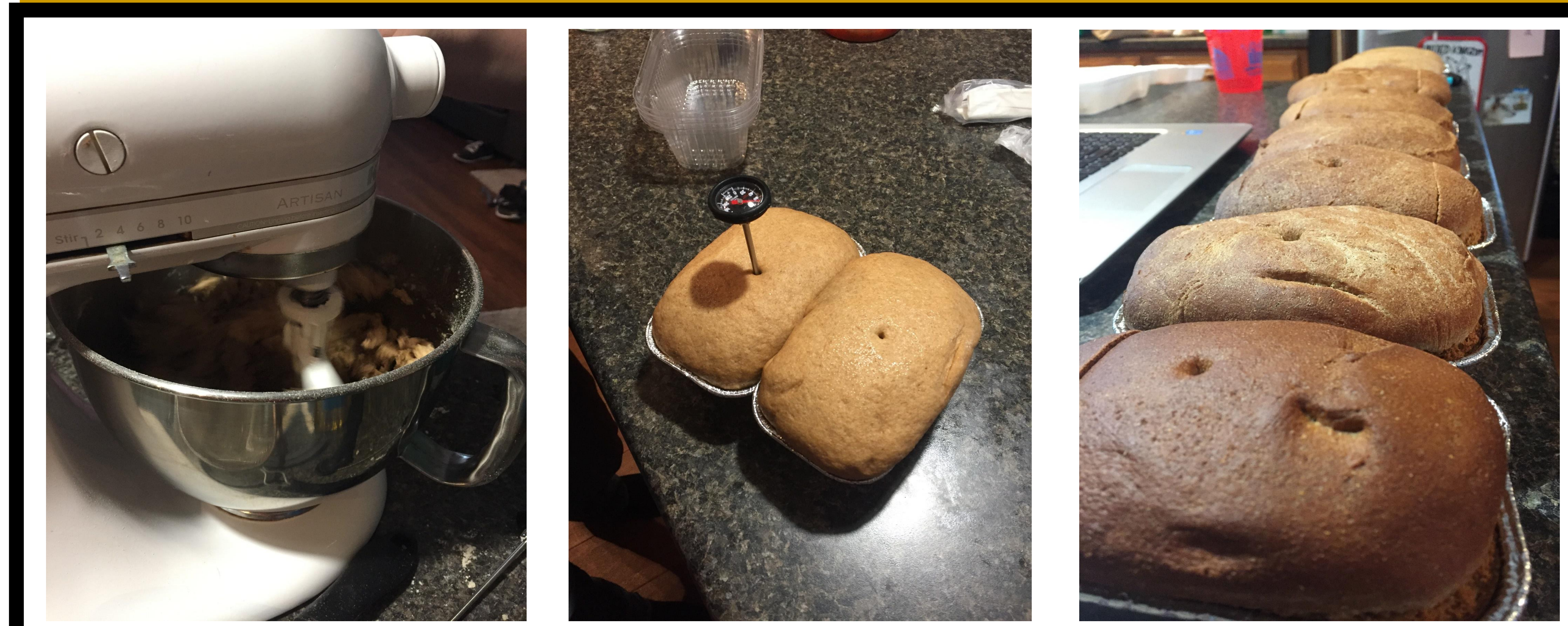


Analysis of Alternatives

Producing Bread	Specialized for Bread Dough	Effectiveness	Time	Processing Raw Ingredients	Bread Density	Yield Size	Crust Quality	Cost
	Spiral Mixer							
	Planetary Mixer							
	Fork Mixer							
	Diving Arm Mixer							
	Spiral Kneader							
	Hook Kneader							
	Food Processor							
	Hand Kneading							
	Cabinet Proofing							
	Bread Proofing Box							
	Humidity Chamber							
	Fermentation Room							
	Microwave Oven							
	Infrared Oven							
	Conventional Oven							
	Convection Oven							

3 Year Comparative Income Statement

	Year 1	%	Year 2	%	Year 3	%
Total Income	392,183	100.00%	422,567	100.00%	460,841	100.00%
Total Cost of Sales	89,133	22.73%	96,038	22.73%	104,736	22.73%
Gross Margin	303,051	77.27%	326,529	77.27%	356,104	77.27%
Total Salaries and Wages	136,044	34.69%	136,114	32.21%	137,475	29.83%
Total Business Expenses	156,073	39.80%	163,739	38.75%	165,397	35.89%
Total Interest Expense	30,783	7.85%	27,685	6.55%	23,828	5.17%
Total Operating Expense	322,900	82.33%	327,539	77.51%	326,701	70.89%
Net Operating Profit	(19,849)	-5.06%	(1,010)	-0.24%	29,403	6.38%



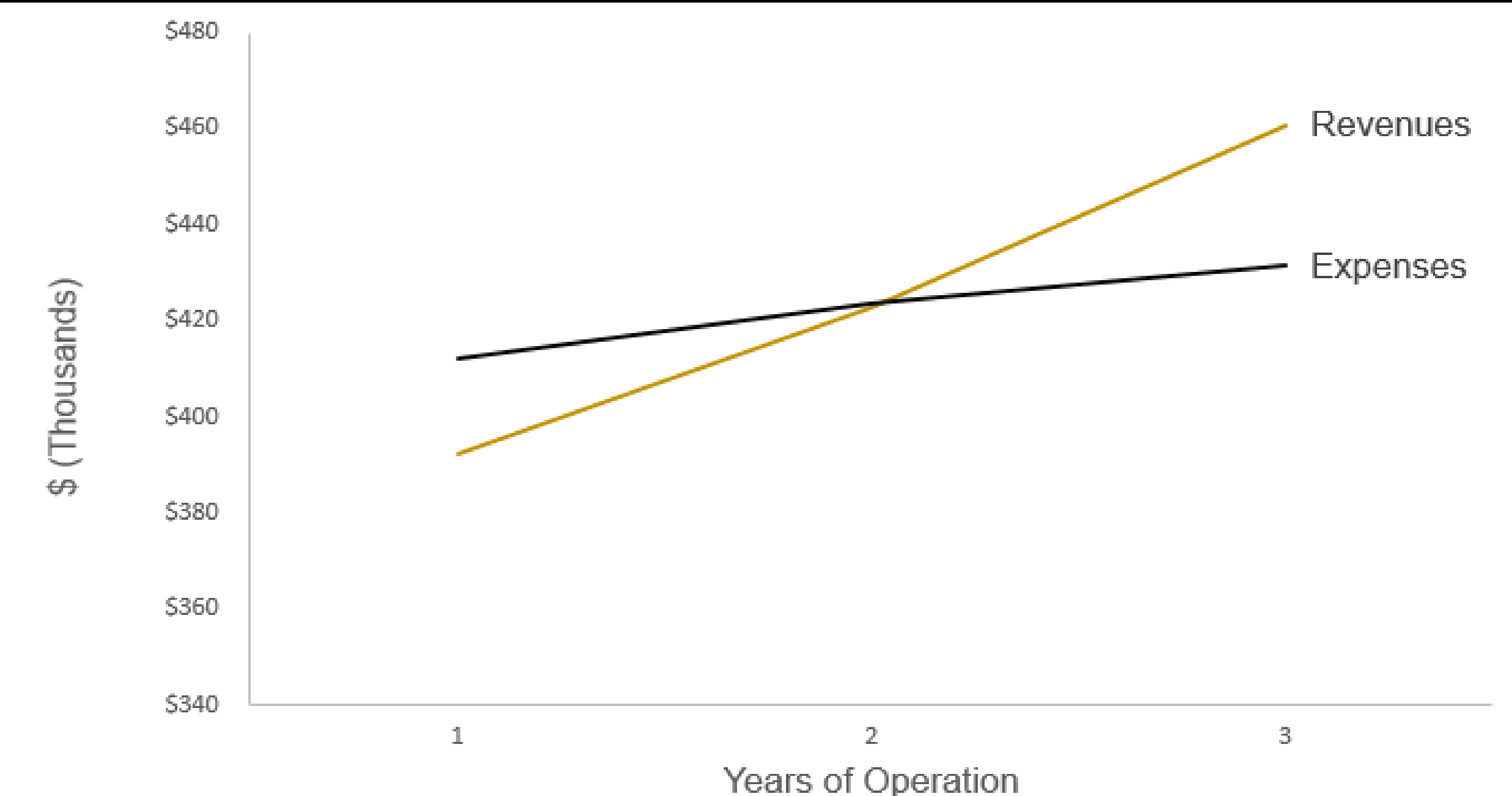
Prototype Analysis

Parameters:
Mixing speed, kneading time, and fermentation time.

Observations:
Loaf volume, loaf height, loaf density, temperature.

Recommendations

- Continue experimenting with increased differences between the parameters to better determine their effects.
- Increase the fermentation time to reduce the loaf's density.



Revenues and Expenses based on a sale price of \$5.50 per loaf of bread, with a yearly production of 71,316 loaves. In this financial forecast, the total capital investment is \$408,757.42 with 24% fixed costs and a variable cost of \$2.71/loaf

Acknowledgements:
We'd like to thank our technical advisors: Dr. Martin Okos, Troy Tonner, Alyssa S Christoffer, & Coleen A Riley.