

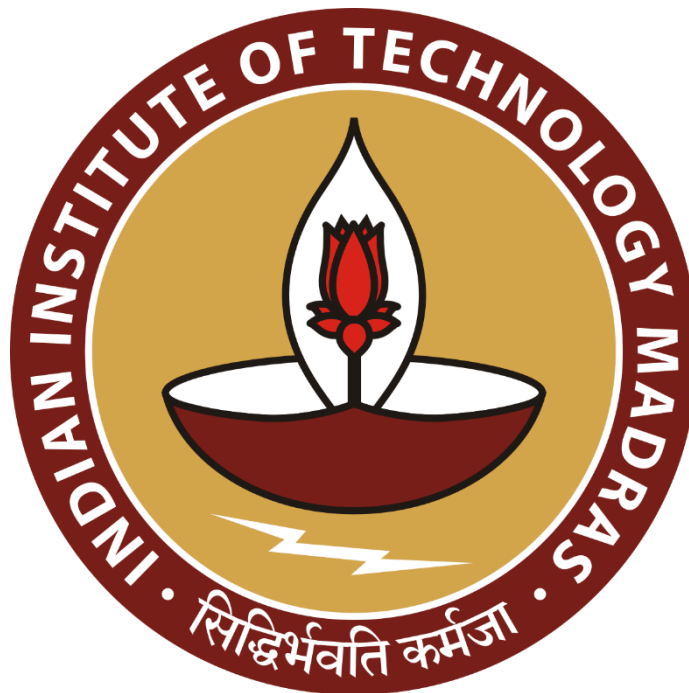
Sales analysis of a home based artificial jewellery business to increase profitability

Final report for the BDM capstone Project

Submitted by

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Contents

Declaration	2
Proof of Originality	3
1 Executive Summary	4
2 Detailed Explanation of Analysis Process	5
3 Results and Findings	11
4 Interpretation of Results and Recommendations	18

Declaration Statement

Sales Analysis of Artificial Jewellery

I am working on a Project titled "[Business to increase profitability](#)". I extend my appreciation to [Shilpi Jaiswal](#), for providing the necessary resources that enabled me to conduct my project.

I hereby assert that the data presented and assessed in this project report is genuine and precise to the utmost extent of my knowledge and capabilities. The data has been gathered from primary sources and carefully analyzed to assure its reliability.

Additionally, I affirm that all procedures employed for the purpose of data collection and analysis have been duly explained in this report. The outcomes and inferences derived from the data are an accurate depiction of the findings acquired through thorough analytical procedures.

I am dedicated to adhering to the information of academic honesty and integrity, and I am receptive to any additional examination or validation of the data contained in this project report.

I understand that the execution of this project is intended for individual completion and is not to be undertaken collectively. I thus affirm that I am not engaged in any form of collaboration with other individuals, and that all the work undertaken has been solely conducted by me. In the event that plagiarism is detected in the report at any stage of the project's completion, I am fully aware and prepared to accept disciplinary measures imposed by the relevant authority.

I understand that all recommendations made in this project report are within the context of the academic project taken up towards course fulfillment in the BS Degree Program offered by IIT Madras. The institution does not endorse any of the claims or comments.



Signature of Candidate: (**Digital Signature**)

Name: [Vikas Jaiswal](#)

Date: [05/11/2023](#)

No Objection Certificate

Date:

This is to certify that Mr Vikas Jaiswal has taken the data from our business and this letter confirms that we have completely no objection to his using the data for his BDM capstone project.

This NOC has been issued as per the request of Vikas Jaiswal and can be used by him for the specific purpose mentioned above.

During his time with us, he has been a sincere individual and we wish him good luck.

Sincerely,

Shilpi Jaiswal

Ms. Shilpi Jaiswal



Executive Summary

The final report presents a comprehensive analysis and actionable insights into the operations of home based jewellery business by Shilpi Jaiswal. The report addresses the below problem statements with data driven insights and generally accepted business practices:

Problem statement 1: The owner is making low profits due to increased competition. The owner of the business is facing stiff competition therefore profits are reduced.

Findings:

The owner is suggested to stock products with the highest sales. From the data shared we can conclude that the highest purchased products have the highest sales. If the owner is ready to increase purchase by 90% per quarter of jewellery. She can expect a 90% sales increase per quarter. This will require the owner to find more avenues of sales i.e exhibitions, having an online store front & giving warranty on jewellery for 6 months.

Problem statement 2 : The owners revenue is low due to limited sales. Look into how the sales can be increased.

Findings:

It is seen from the existing data that the average revenue from 2 months when the owner has participated in exhibitions is 40000. Owner is suggested to participate in one exhibition per month to increase revenue by 280% in 9 months.

Problem statement 3: Her customers are demanding other women's fashion products which the business owner is looking to stock. Look into whether she should continue specialising in artificial jewellery or add other fashion products to attract customers.

Findings:


The owner is suggested to stock 25% of other women's fashion products like clusters, hair bands, makeup kits etc. This should add 25% to existing revenue thus increasing sales and profits.

The report concludes with projected revenue increase from 25% to 280% which is based on the data which is present and other strategic decisions which are based on accepted good business practice to address revenue and profitability growth.


Detailed Explanation of Analysis Process

Sales data collected is for 9 months(Jan2023-Sep2023) and Purchase data collected is for 1 year. Sales data has combined sales of various kinds of jewellery items being stocked by the owner. The purchase data presented is of the month in which purchase has been performed by the owner of the business for the year. Sales data is month wise sales done by the business till date. The owner has not shared individual item sales data rather total amount sold per month. Purchase data has been prepared in tabular format using products purchased on one axis and time on the other. Quarterly interval is taken for purchase data as it coincides with the actual purchase date. The purchase data is taken from the various purchase receipts.

Also the unit price needs to be multiplied by 20 for getting the purchase price in rupees. While putting data in excel any missing data was marked as zero for computation. There were no errors or duplicates in purchase receipts. Data has been enriched by multiplying purchase data with 20 and providing the same in the total column. Total purchase quantity for each product for a year has been calculated as well.

For sales data the owner does not have any records and she has just shared combined monthly sales data verbally. The sales data has been put in the excel  ShilpiJaiswal_Data as a table with month on one axis and sales figures in rupees on another.

1. The owner is making low profits due to increased competition. The owner of the business is facing stiff competition therefore profits are reduced.

As per the data given in attached excel  ShilpiJaiswal_Data Problem statement 1 tab one can see that if we increase the purchase by 90% she can see her sales rise by equal amount. This owing to the fact that the owner wants to expand her business and is looking for revenue growth which in turn will translate into more earnings. It is suggested that the

owner keeps the same profit margin and can aim to make higher profits with more revenue. It is assumed that the owner is well aware of her competitors' costing and has priced her products accordingly. The sales will have been increased by increasing her sales channel from home to include exhibitions and online store front. If we look at the excel the owner can target to increase purchase from Rs1,05,170 to 1,99,823. This will translate to sales increase from Rs. 1,28,230 to Rs 2,43,637

Figure 1: Projected revenue increase for Problem Statement 1

Projected Purchase increase by 90% in each quarter can account for 90% increase in revenue as below:

quarterly total is multiplied by 20 to get to actual cost in rupees

Jewellery	Jun -23	Jan-23	Nov-22	Sep-22	Total
quarterly total	3168	708	1187	195.5	5258.5
quarterly total in Rs	63360	14160	23740	3910	105170
projected quarterly total	120384	26904	45106	7429	199823

Projected Sales:

Month	Actual Sales in Rupees	Projected sales in rupees
Jan	9450	17955
Feb	15680	29792
Mar	35000	66500
Apr	8700	16530
May	500	950
June	1000	1900
July	7000	13300
Aug	45000	85500
Sep	5900	11210
Total	128230	243637

revenue increase by 90%

2. **The owners revenue is low due to limited sales. Look into how the sales can be increased.**


It is seen from the data that sales are more in months when the owner has put exhibitions. If the owner can target for doing one exhibition per month her revenue can increase by 280% for 9 months as projected in the attached excel  ShilpiJaiswal_Data When the owner has put exhibition, her average sale is Rs. 40000 per month. The revenue can grow from Rs. 1,28,230 to 3,60,000 in this scenario. Also the owner will have to increase her purchase accordingly.

Figure 2: Projected revenue increase for Problem Statement 2

For the actual data we can see that exhibition months are months with highest sales. Taking the average as $40000((35000+45000)/2)$ per month with exhibitions

Month	Actual Sales in Rupees	Projected sales in rupees				
Jan	9450	40000				
Feb	15680	40000				
Mar	35000	40000				
Apr	8700	40000				
May	500	40000				
June	1000	40000				
July	7000	40000				
Aug	45000	40000				
Sep	5900	40000				
Total	128230	360000	280% increase in revenue			

3. Look into whether she should continue specialising in artificial jewellery or add other fashion products to attract customers.

The owner is suggested to stock 25% of other women's fashion products like hair bands, makeup kits etc. This should add 25% to existing revenue thus increasing sales and profits. From the existing data we see that the owner has been able to generate sufficient revenue through exhibitions of artificial jewellery and she would do well even if she continues to stock only artificial jewellery but since her customers are demanding other fashion products she is advised to stock 25% of her jewellery stock for other women

fashion products. This will also work for customers that are looking for other fashion products but might get interested in artificial jewellery as well. If the owner can invest 25% of her purchase in other fashion products that should help her to build a loyal customer base. We can see from the attached excel [ShilpiJaiswal_Data](#) that revenue can increase from Rs. 1,28,230 to 1,60,287.5

Figure 3: Projected revenue increase for Problem Statement 3

A	B	C	D	E	F	G	H	I
Increase revenue by 25% by stocking other women fashion products to build customer loyalty								
	Jewellery	Jun -23	Jan-23	Nov-22	Sep-22	Total		
	quarterly total	3168	708	1187	195.5	5258.5		
	quarterly total in Rs	63360	14160	23740	3910	105170		
	projected quarterly total	79200	17700	29675	4887.5	131462.5	revenue increase by 25%	
	Projected Sales:							
	Month	Actual Sales in Rupees	Projected sales in rupees					
	Jan	9450	11812.5					
	Feb	15680	19600					
	Mar	35000	43750					
	Apr	8700	10875					
	May	500	625					
	June	1000	1250					
	July	7000	8750					
	Aug	45000	56250					
	Sep	5900	7375					
	Total	128230	160287.5	revenue increase by 25%				

Results and Findings

Actual Sales in Rupees & Projected Sales in rupees

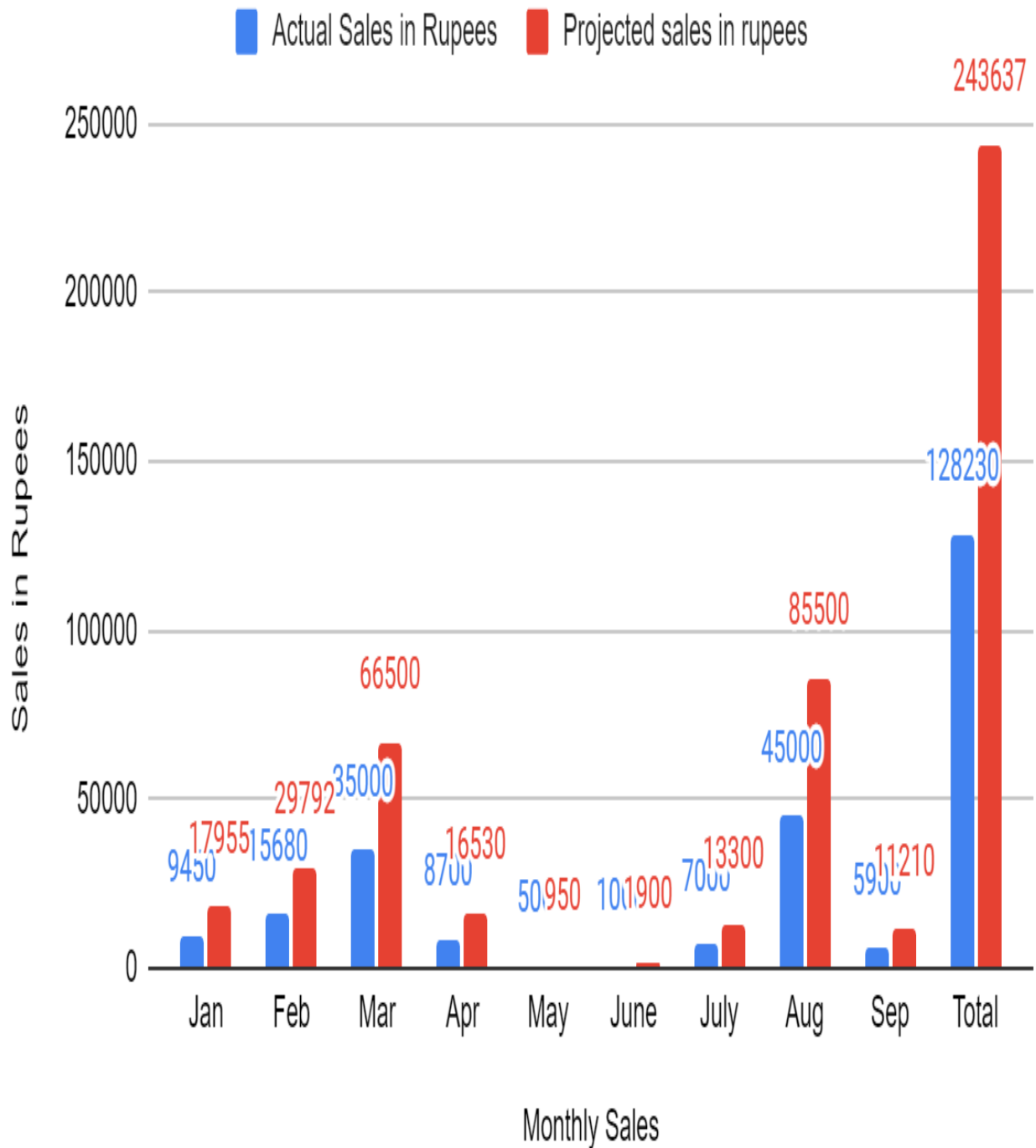


Figure 4 : Actual Vs Projected Sales for Problem Statement 1

Actual Sales in Rupees & Projected Sales in Rupees

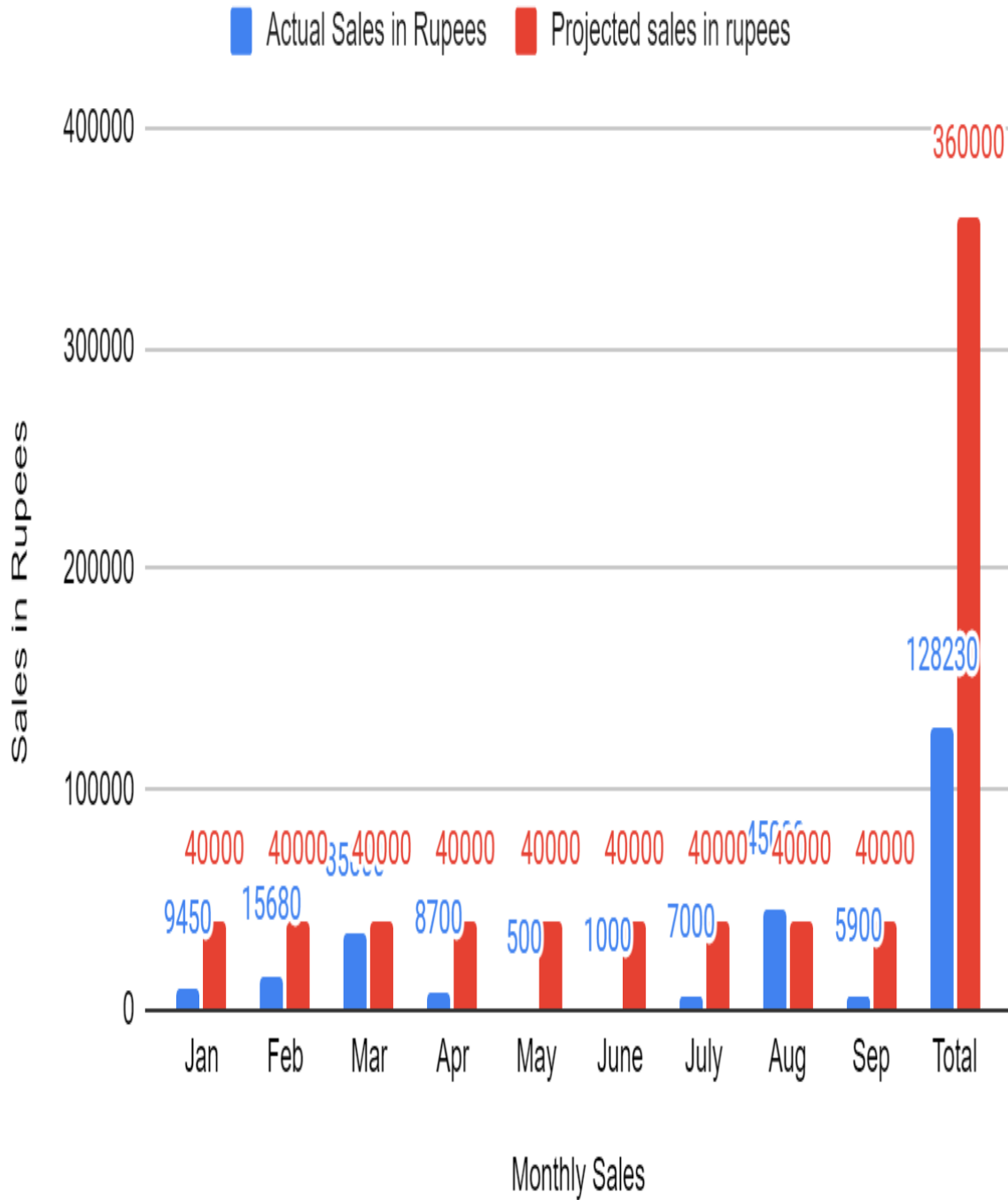


Figure 5 : Actual Vs Projected Sales for Problem Statement 2

Actual Sales in Rupees and Projected Sales in Rupees

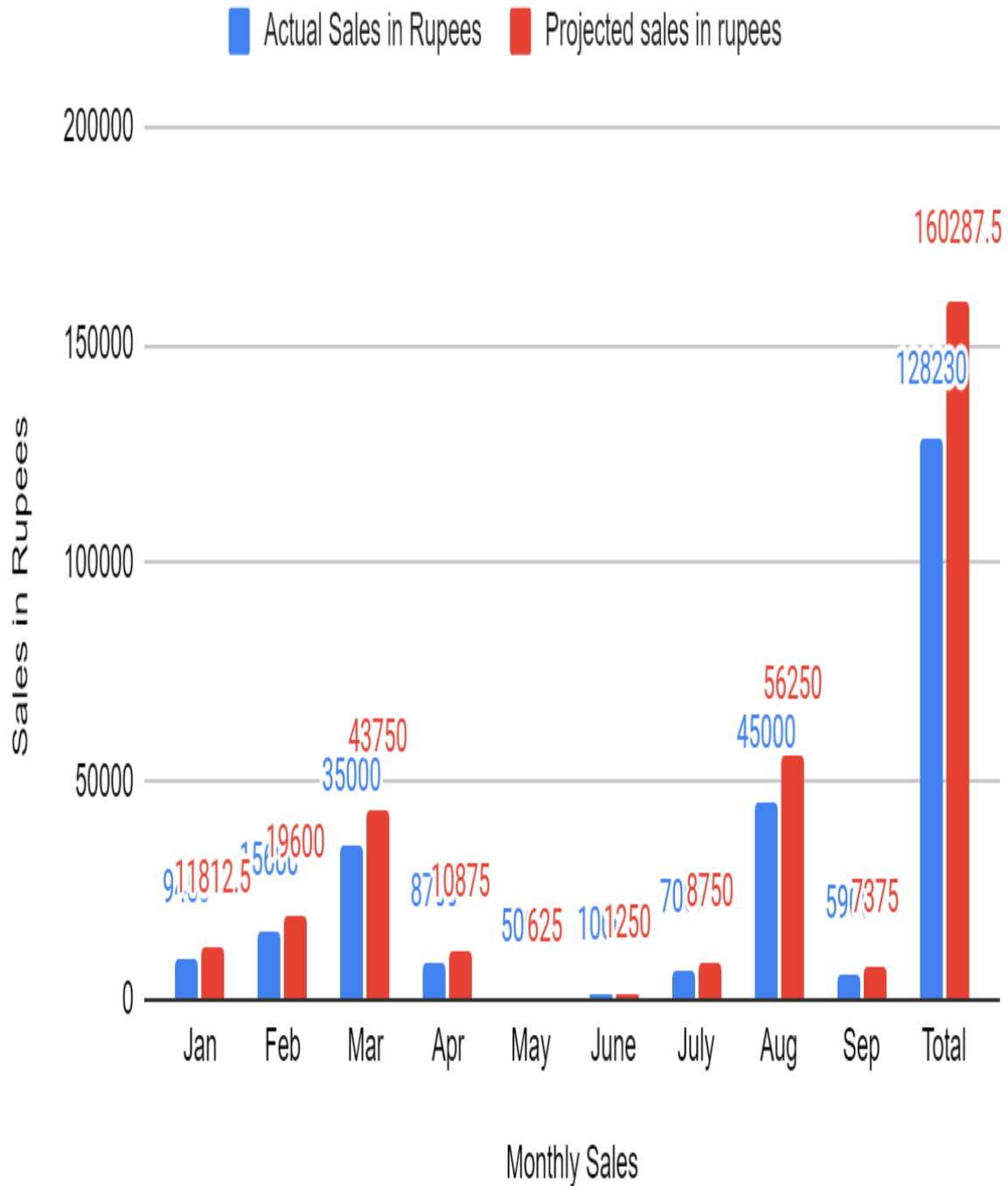



Figure 6 : Actual Vs Projected Sales for Problem Statement 3

The data shared from the owner are in the form of purchase receipts. The owner is currently buying from one vendor only and after putting all the data from the receipt from this vendor in google sheet i was able to come up with a table of purchase data for a year. Missing data is replaced with 0. Data is enriched by providing the total of each product purchased in the last year and also totaling the purchase value(multiple by 20). Sales data is on month bases till date. More detailed breakup of sales data with regards to product sold would have helped us to identify highest selling items using data, but that according to the owner is not available so have presented consolidated sales data month wise. Have drawn conclusions about high selling items from purchase data assuming that certain items are purchased more because there is more demand for the same.

Since the volume of data is low, applying any data science technique is limited and the report intends to make suggestions based on descriptive statistics and generally accepted business practices.

From the data available we can infer that the highest selling product is Antique Set  ShilpiJaiswal_Data . Also as per the purchase data we can see that this is one of the highest purchased products in Jun23. The owner is suggested to continue to stock this item in high numbers.

For the sales data we can see that max sales is Rs.45000 and is in the month of August. On discussing the same with the owner it came out that she has put on an exhibition during this month thus resulting in high sales. The owner is suggested to participate in more exhibitions like these to generate more revenue.

We can also interpret from the standard deviation which is very high that the sales are not stable and she also revealed the same during her interview. In building any business trust is a very important factor and the same comes with good customer experience. The owner is suggested to offer warranty on her jewellery to improve customer confidence in her products.

From the purchase data we can see that the owner's business was affected by Covid thus limiting her growth. The intent to grow her business can be seen from the purchase data as well

From **figure 4** we can conclude that if we increase the purchase by 90% per quarter we can translate the sales increase of 90%. The projected purchase and sales figures are shared in

figure 1.

From **figure 5** we can interpret that the owner can increase her revenue by 280%. If she is putting one exhibition per month. To accommodate sales increase she will have to increase her purchase by the same percentage.

From **figure 6** we can interpret that the owner can increase her revenue by 25%. If she is stocking other fashion products which is 25% of her existing purchase.

The above **figures 4, 5 & 6** and data in **figure 1, 2 & 3** are projections based on existing data and all things remaining the same owner can increase her revenue translating to increase in profits by increasing her sales channel, putting at least 1 exhibition per month and stocking other women's fashion products. Please refer to attached excel [ShilpiJaiswal_Data](#) for projected figures.

Monthwise Projected Sales in Rupees for Problem Statement 1

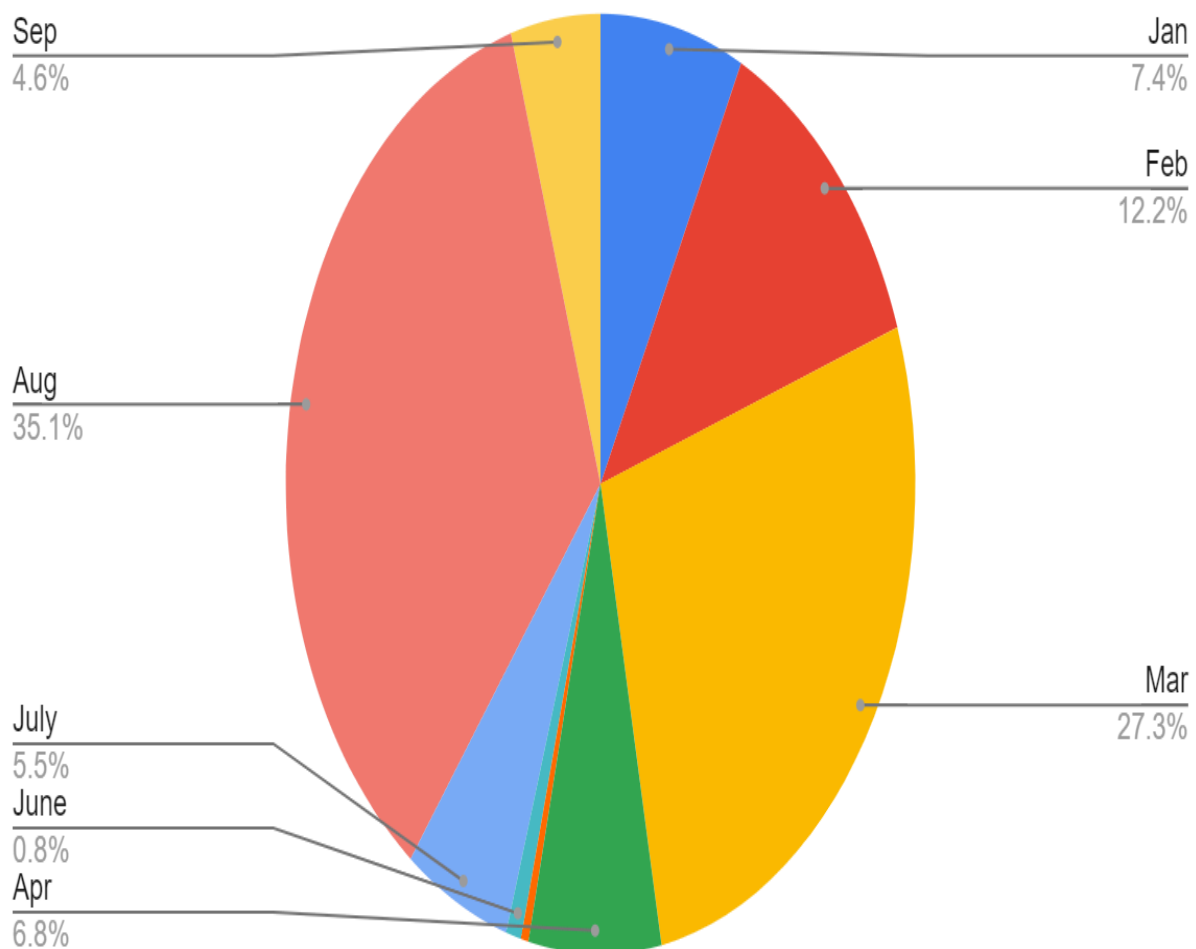


Figure 7: Projected Sales for Problem Statement 1

We can also see from the above pie chart that the monthly sales are projected to increase at the same rate as purchase i.e 90%

Projected Sales in Rupees for Problem Statement 2

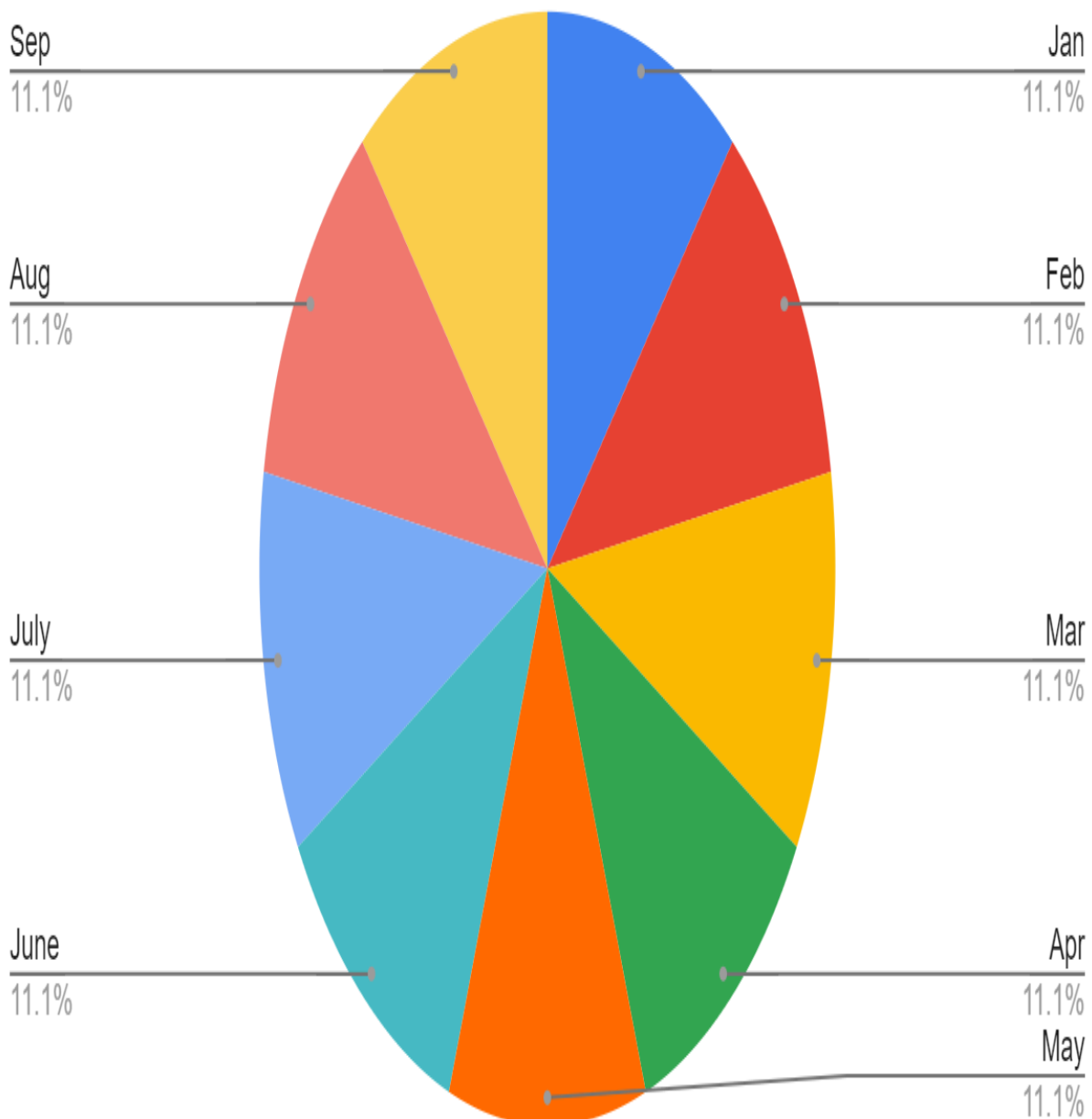


Figure 8 : Projected Sales for Problem statement 2

For problem statement 2 we can see that the sale is uniform owing to the fact that the owner will be putting on at least one exhibition per month.

Projected Sales in Rupees for Problem Statement 3

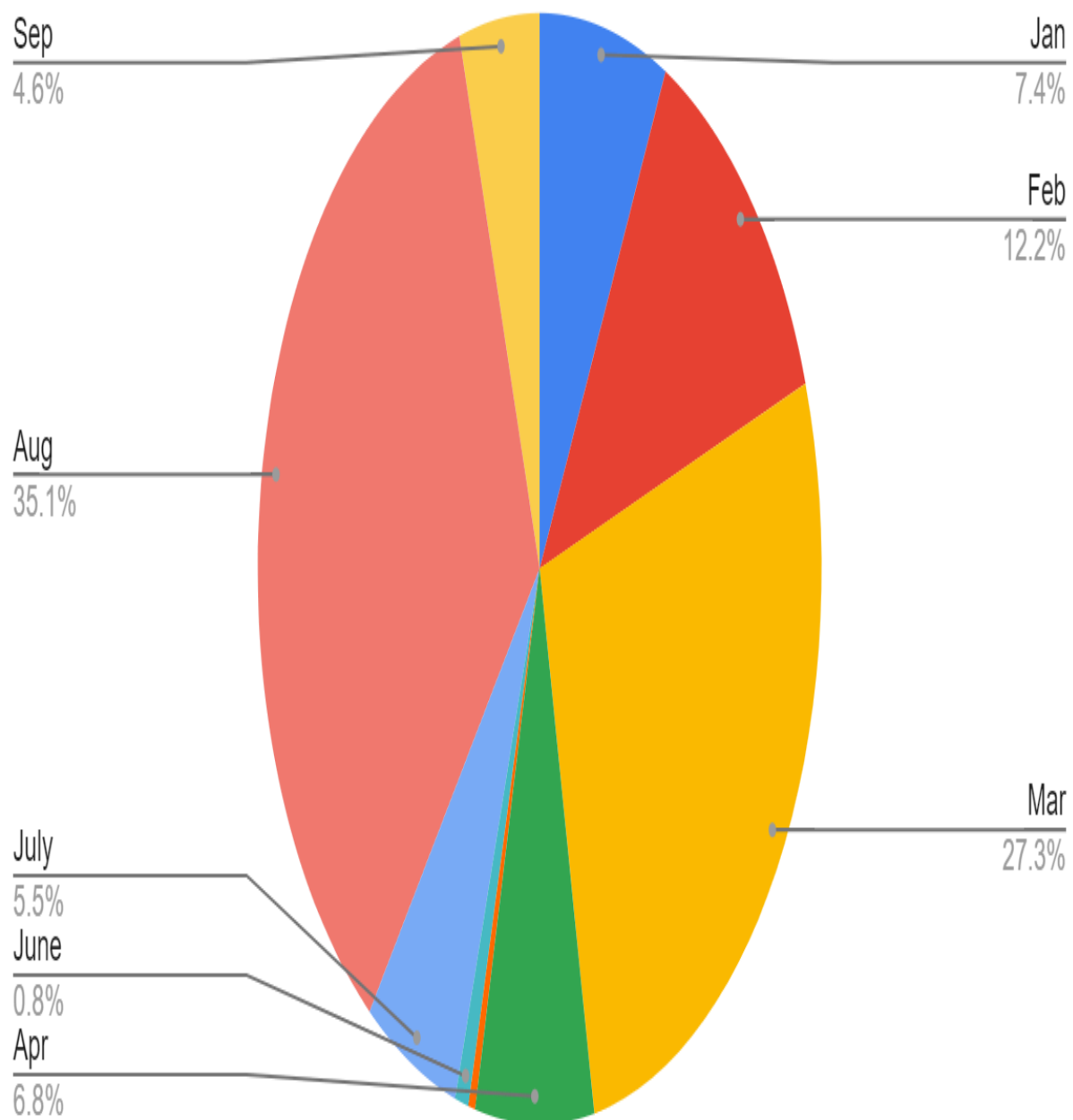


Figure 9 : Projected Sales for Problem Statement 3

From figure 9 we can conclude that the sales will increase in the same proportion as purchase ie.25%.

For the above 3 pie charts we can conclude that the owner will be getting uniform revenue if she goes for one exhibition per month. By stocking other women's products and increasing her stock and finding other venues of sale she can increase her revenue thus in turn leading to better profits.

Interpretation of Results and Recommendations

1. The owner is suggested to stock products with the highest sales. From the data shared we can conclude that the highest purchased products have the highest sales. If the owner is ready to increase purchase by 90% per quarter of jewellery. She can expect a 90% sales increase per quarter. This will require the owner to find more avenues of sales i,e exhibitions, having an online store front & giving warranty on jewellery for 6 months.
2. It is seen from the existing data that the average revenue from 2 months when the owner has participated in exhibitions is 40000. Owner is suggested to participate in one exhibition per month to increase revenue by 280% in 9 months.
3. The owner is suggested to stock 25% of other women's fashion products like clusters, hair bands, makeup kits etc. This should add 25% to existing revenue thus increasing sales and profits.

For the above we can see that the projected revenue can be increased between 25% to 280% which is based on the data which is present and other strategic decisions which are based on accepted good business practice to address revenue and profitability growth.

Recommendations:

- **Product Differentiation:** Owners core business is in fashion jewellery and is suggested to specialise in the same even if she is stocking other fashion products in demand.

- **Improve customer experience:** Owner is suggested to provide warranty for 6 months on the jewellery and provide repair service free of cost during the warranty. This will help the owner build trust with her customers. This will also help her to build her brand which will pay off for her in the long run by promoting brand loyalty towards her products.

- **Optimise pricing:** Owner was suggested to put herself in customer shoes and go shopping like a customer to other jewellery stores in the city which will help her to price products optimally. The owner was also suggested to buy jewellery from the wholesale market in the metros to improve her profit margins. On further interview with the owner it was discovered that she is getting a good credit facility for the current seller that she is buying and can continue to do so.

Also since the owner is targeting high revenue which will require her to increase stock. She can look at other vendors in Metros which have wholesale jewellery sellers. She can also expect to get better profit margins if she is buying in large quantities and demand better discounts for the purchased products.

- **Expand target audience:** Deciding on other channels of sales the owner was suggested to have a storefront on ecommerce website catering to small businesses like “meesho” which would give her a customer base of the platform and would help her increase her sales beyond the boundaries of the city. The owner was suggested to register for GST as required by the ecommerce platform.

- **Invest in Marketing:** Newspaper inserts/Posters are low cost and good to reach local customers. The owner can use this medium as a low cost and high impact marketing strategy. She can also run promotions where she is rolling out special offers on selected dates, weeks or months. Ex. She can target promotional offers during wedding seasons when the demand for jewellery is high.

- **Collaborate with others:** Tie up with other small business clothing shops to expand customer base and increase sales. As clothing is complementary to jewellery along with other fashion products. This will help her to expand sales.

- **Creating her own brand:** Since the owner has already decided to attract more customers by giving warranty on jewellery. She can also roll out her own brand in the market with the quality promise. That would allow her to create her own value proposition. This will also help her to expand locally as once the brand reputation is established she can set up other shops by hiring employees and giving them the necessary training.