

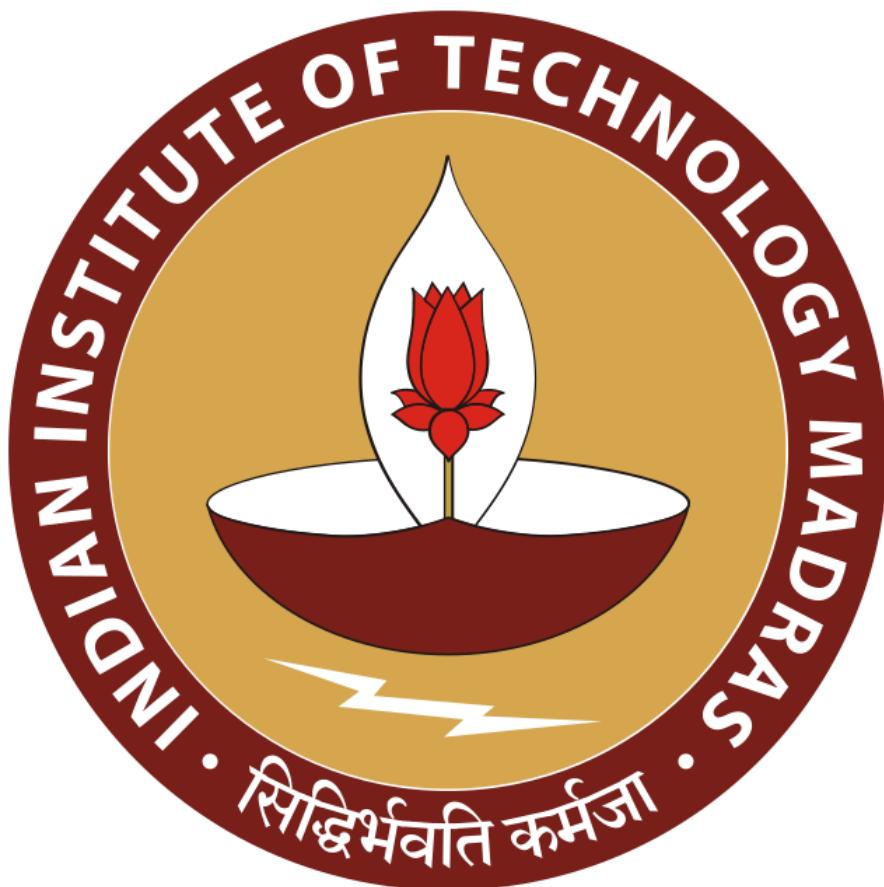
**Optimizing Operational Efficiency and Enhancing Customer Retention:
A Data-Driven Approach for Duallush Designs Pvt Ltd**

An End-Term report for the BDM capstone Project

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1. Executive Summary

2. Detailed Explanation of Analysis Process/Methods

2.1. Data Collection and Cleaning Context

During data collection, some limitations were encountered including occasional missing entries in CRM records and discrepancies between Zoho Books and Google Sheets regarding inventory details. These gaps were addressed through cross-validation and manual verification with business owners. Where data could not be fully resolved, affected records were excluded to preserve dataset integrity, acknowledging that this may slightly reduce granularity. Additionally, assumptions such as consistent material costing across suppliers were documented to clarify analysis scope. These measures ensured a reliable dataset while transparently communicating residual limitations that may impact the precision of certain findings.

2.2. Method for Inventory Analysis

To tackle the ₹1.2 crore blocked in slow-moving inventory, I performed a structured analysis using the Inventory Shipment dataset to identify high-risk materials causing excess capital and holding costs. The process followed these key steps:

1. Calculate Net Inventory Movement

- **Formula:**
Net Quantity = Quantity Received – Quantity Shipped
- **Purpose:**
To determine how much stock remains unsold across different material categories.

2. Inventory Categorization and Cost Mapping

- Materials were grouped by category (e.g., **Velvet, Cotton, Foil, Linen, Acrylic**).
- Key metrics were calculated:
 - **Net Quantity** – Unsold units per material
 - **Unit Cost** – Cost per material unit
 - **Holding Cost** – Monthly storage cost per unit

These helped identify **which materials tie up the most working capital**.

3. Risk Classification Using Inventory Health Indicator

To better interpret movement patterns, I created a new column—**Inventory Health Indicator**—based on turnover ratios.

- **Inventory Turnover Ratio** = $\text{Quantity Shipped} \div \text{Net Quantity}$
- **Average Days in Inventory** = $30 \div \text{Turnover Ratio}$
- **Risk Categories:**
 - $< 1.0 \rightarrow \text{High Risk - Slow Moving}$
 - $1.0-2.5 \rightarrow \text{Moderate Risk - Needs Monitoring}$
 - $> 2.5 \rightarrow \text{Low Risk - Healthy Movement}$

This classification allowed for quick filtering and prioritization of problematic stock.

4. Visualization & Snapshot-Based Justification

- Data was cleaned and summarized using **Python (Pandas)** and **Excel**.
- A **color-coded snapshot table** (Fig. 2) was created showing the Inventory Health Indicator for key material entries.
- **Cotton** and **Velvet** materials consistently displayed:
 - **High Net Quantity**

- **Low Turnover Ratio**
- **High Average Holding Days**
- Were tagged mostly as ● **High Risk – Slow Moving**

This method allowed us to classify material categories for possible ABC analysis in recommendations.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Date	Material ID	Material Name	Category	Supplier	Quantity Received	Quantity Shipped	Net Quantity	Inventory Turnover Ratio	Average Days	Inventory Risk	Warehouse Location	Unit
2	02-01-2024	MTR-101	Velvet-Fab	Velvet	Supplier A	600	250	350	0.71	42.00	High Risk - Slow Moving	WH-1	230
3	09-04-2025	MTR-189	Foil-Left	Foil	Supplier C	485	358	127	2.82	10.64	Low Risk - Healthy Move	WH-1	218
4	29-12-2024	MTR-306	Foil-Stand	Foil	Supplier A	411	214	197	1.09	27.62	Moderate Risk - Needs M	WH-3	308
5	14-06-2025	MTR-162	Velvet-Amount	Velvet	Supplier A	550	200	350	0.57	52.50	High Risk - Slow Moving	WH-2	462
6	23-05-2025	MTR-926	Linen-Fall	Linen	Supplier B	181	126	55	2.29	13.10	Moderate Risk - Needs M	WH-2	293
7	25-03-2025	MTR-916	Cotton-Toe	Cotton	Supplier B	650	280	370	0.76	39.64	High Risk - Slow Moving	WH-2	192
8	20-02-2025	MTR-975	Cotton-Become	Cotton	Supplier C	450	180	270	0.67	45.00	High Risk - Slow Moving	WH-3	310
9	08-05-2025	MTR-514	Cotton-Yard	Cotton	Supplier A	500	220	280	0.79	38.18	High Risk - Slow Moving	WH-1	161
10	02-01-2025	MTR-991	Foil-Reduce	Foil	Supplier C	216	115	101	1.14	26.35	Moderate Risk - Needs M	WH-3	114
11	31-12-2024	MTR-342	Acrylic-Cold	Acrylic	Supplier A	577	335	142	2.36	12.72	Moderate Risk - Needs M	WH-1	137
12	15-04-2025	MTR-257	Acrylic-But	Acrylic	Supplier B	372	280	92	3.04	9.86	Low Risk - Healthy Move	WH-1	289
13	21-03-2025	MTR-262	Foil-Watch	Foil	Supplier C	467	323	144	2.24	13.37	Moderate Risk - Needs M	WH-1	376
14	19-06-2025	MTR-238	Velvet-Reason	Velvet	Supplier C	720	240	480	0.50	60.00	High Risk - Slow Moving	WH-2	206
15	15-01-2025	MTR-380	Velvet-Realize	Velvet	Supplier A	661	244	417	0.59	51.27	High Risk - Slow Moving	WH-3	139
16	09-04-2025	MTR-665	Foil-International	Foil	Supplier B	350	108	242	0.45	67.22	High Risk - Slow Moving	WH-1	222
17	02-02-2025	MTR-126	Linen-Art	Linen	Supplier A	181	120	61	1.97	15.25	Moderate Risk - Needs M	WH-1	357
18	31-03-2025	MTR-373	Linen-Miss	Linen	Supplier B	290	215	75	2.87	10.47	Low Risk - Healthy Move	WH-1	495
19	03-02-2025	MTR-800	Velvet-Man	Velvet	Supplier B	342	180	162	1.11	27.00	Moderate Risk - Needs M	WH-1	313

Fig. 1: Showing high overstock risk for Cotton and Velvet due to low turnover and prolonged holding periods.

Calculations Done in Analysis (Based on Snapshot):

- **Net Quantity** = Quantity Received – Quantity Shipped
- **Inventory Turnover Ratio** = Quantity Shipped ÷ Net Quantity
- **Average Days in Inventory** = 30 ÷ Inventory Turnover Ratio
- Inventory Health Indicator was used to categorize stock risk based on turnover, as explained earlier.

This analysis identified materials with large unsold stock and low movement speed. **Cotton and Velvet**, frequently tagged as **High Risk**, exhibited poor turnover efficiency and longer holding durations justifying their classification as **slow-moving, capital-blocking inventory**.

2.3. Method for Customer Retention and CRM Analysis

The CRM data was analyzed to understand customer behaviour, purchase intent, and complaint patterns. This was done using:

1. Segmentation Based on Loyalty Tier:

- Customers were grouped by Loyalty Tier (Gold, Silver, Bronze, Platinum), and further subdivided based on "Next Purchase Intent": High, Medium, Low.
- Additional behavioural segmentation classified customers as Champions, Potential Loyal, At Risk, and Lost, based on purchase frequency and recency.

	A	B	C	D	E	F	G	H	I	J	K
1	Date	Customer Name	Region	Purchase Amount	Product Category	Supplier	Supplier Rating	Customer Loyalty Tier	Complaint Registered	Next Purchase Intent	Intent Score
2	05-02-2024	GreenCraft US	USA	₹ 52,000.00	Acrylic	Supplier B	4.7	Gold	No	High	3
3	03-05-2025	Mclaughlin LLC	USA	₹ 18,199.92	Linen	Supplier A	2.6	Silver	No	Low	1
4	02-04-2025	Martinez-Bender	USA	₹ 18,184.41	Cotton	Supplier C	5	Gold	No	Medium	2
5	23-02-2025	Allen Wagner	Australia	₹ 23,914.56	Cotton	Supplier B	4.9	Gold	No	Medium	2
6	11-01-2025	Henderson Howard	Australia	₹ 73,853.18	Foil	Supplier B	3.6	Gold	No	Medium	2
7	09-02-2025	Gonzalez Anderson	Canada	₹ 96,474.13	Linen	Supplier C	3.7	Silver	No	Medium	2
8	27-02-2025	Franklin LLC	Germany	₹ 61,390.59	Velvet	Supplier B	3.8	Gold	No	Medium	2
9	07-03-2025	Curry Group	Germany	₹ 43,862.81	Linen	Supplier A	3.6	Silver	No	Medium	2
10	13-02-2025	Sutton Jones	Canada	₹ 50,210.33	Linen	Supplier B	3.2	Gold	No	Low	1
11	05-06-2025	Phelps Parker	Australia	₹ 27,779.65	Velvet	Supplier B	4.4	Gold	No	Medium	2
12	13-04-2025	Daniel Hardin	Australia	₹ 90,233.52	Linen	Supplier C	2.7	Bronze	No	Low	1
13	29-03-2025	Butler Campbell	Canada	₹ 36,882.78	Velvet	Supplier B	2.7	Gold	No	Low	1
14	20-05-2025	Deleon Miller	USA	₹ 84,076.77	Linen	Supplier B	4.7	Silver	No	High	3
15	19-05-2025	Mclean Nelson	UK	₹ 37,426.38	Acrylic	Supplier B	4.2	Bronze	No	Medium	2
16	28-02-2025	Johnson Inc	USA	₹ 39,569.69	Foil	Supplier B	3.6	Silver	No	Medium	2
17	29-03-2025	Parks Cook	UK	₹ 40,601.30	Velvet	Supplier C	4.2	Gold	No	High	3
18	26-03-2025	Wagner Kemp	Australia	₹ 67,555.17	Linen	Supplier A	4.4	Platinum	No	Medium	2
19	14-01-2025	Davis Franklin	USA	₹ 35,981.66	Acrylic	Supplier A	4.9	Silver	No	High	3
20	21-02-2025	Quinn Edwards	Germany	₹ 44,146.04	Acrylic	Supplier A	4.6	Gold	No	High	2

Fig.2: CRM data snapshot showing loyalty tier segmentation with intent and complaint indicators

By using this simple method to analyse margins, I was able to get useful insights into the CRM dataset that supports customer segmentation. The table includes customer names, loyalty tiers (e.g., Gold, Silver, Bronze, Platinum), complaint status, and purchase intent scores. It also features a calculated field called "Next Purchase Intent," which combines supplier rating, purchase amount, and loyalty tier to estimate future engagement. This structured data allowed me to extract meaningful patterns in customer behaviour, helping me identify segments with stronger intent or higher dissatisfaction—crucial for designing targeted retention strategies.

Formulas Used:

- Intent Score Assignment**
 - Each customer assigned an intent score:
 - High = 3
 - Medium = 2
 - Low = 1

- **Complaint Rate Calculation**

$$\text{Complaint Rate (\%)} = \left(\frac{\text{Customers with Complaint Registered 'Yes'}}{\text{Total Customers}} \right) \times 100$$

From CRM data:

- Total Customers = 251
- Customers with Complaint Registered 'Yes' = 43
- Complaint Rate = $(43 / 251) \times 100 = 17.13\%$

2. Quantitative and Visual Analysis:

Descriptive Statistics (Calculated on CRM Data):

Metric	Value
Total Customers	249
Mean Purchase Amount (₹)	54,141
Median Purchase Amount (₹)	52,000
Standard Deviation (₹)	26,390
Repeat Intent Rate (High)	21.91%
Complaint Rate	17.13%

Formula for Mean Purchase Amount:

$$\text{Mean} = \frac{(\sum \text{Purchase Amount})}{N}$$

Where $\sum \text{Purchase Amount} = ₹13,480,020.48$ and $N=249$, so:

$$\text{Mean} = ₹13,480,020.48/249 \approx ₹54,141$$

Loyalty Tier & Intent Distribution Table (from CRM Data):

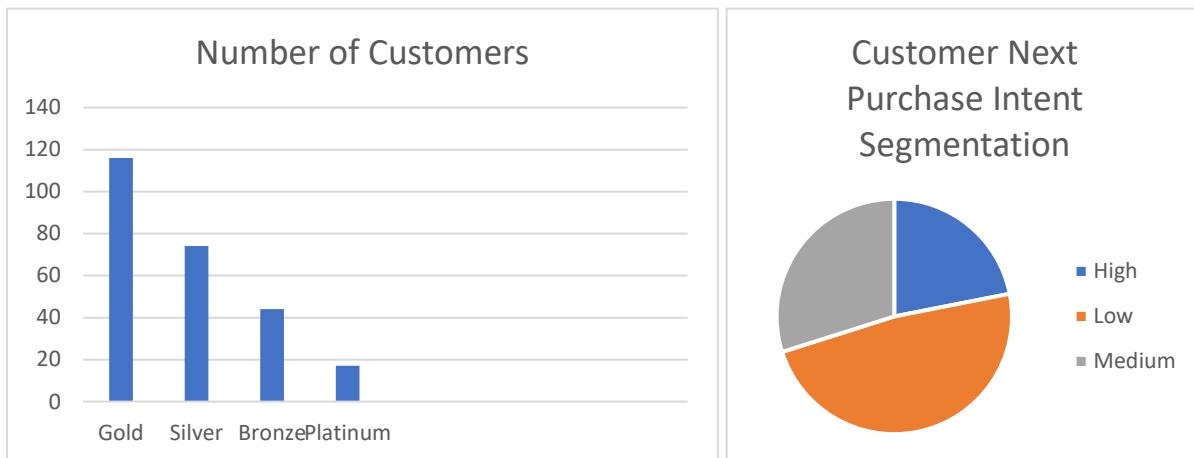
Loyalty Tier	Total Customers	Complaints	Avg. Intent Score
Gold	116	27	1.85
Silver	74	9	1.40
Bronze	44	5	1.20
Platinum	17	2	2.00

- **Calculation of High Intent Rate:**

$$\begin{aligned} \text{High Intent Customers} &= 55 \\ \text{High Intent Rate} &= (55/251) \times 100 = 21.91\% \end{aligned}$$

3. Visualization Techniques:

- *Bar charts* show distribution of customers across loyalty tiers.
- *Pie charts* visualize intent score categories (High, Medium, Low).



4. Qualitative Insights

- In-depth discussions with management revealed that most complaints from Gold tier clients related to post-sale service delays.
- Feedback indicated a lack of systematic loyalty program and inconsistent follow-up with medium/low-intent segments.
- Observed that automated interventions such as scheduled feedback requests or loyalty rewards were not established, contributing to low repeat intent.

5. Customer Intent and Complaint Trends:

- Used clustered column charts in Excel to show intent vs. tier
- Python's groupby logic summarized:

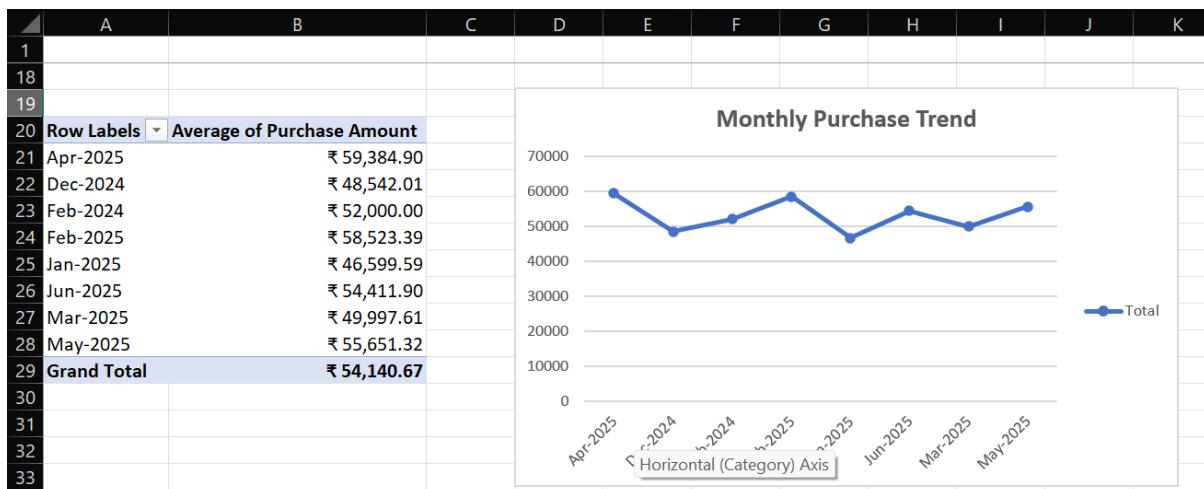
- Gold Tier: Highest volume (116 customers) with a 1.85 intent score, but also had 27 complaints — highlighting both engagement and dissatisfaction.
- Bronze Tier: Low intent (1.45) and low volume — ideal for targeted loyalty strategies.

```
bash bdm.py > ...
1   import pandas as pd
2
3   df = pd.read_csv("bdm_crm.csv")
4
5   grouped = df.groupby('Customer Loyalty Tier').agg(
6       Total_Customers=('Customer Loyalty Tier', 'count'),
7       Avg_Intent_Score=({'Intent Score', 'mean'}),
8       Complaints=({'Complaint Registered', lambda x: (x == 'Yes').sum()})
9   ).reset_index()
10
11  grouped['Avg_Intent_Score'] = grouped['Avg_Intent_Score'].round(2)
12  grouped = grouped.sort_values(by='Total_Customers', ascending=False)
13
14  print(grouped)
15
16  grouped.to_excel("loyalty_summary.xlsx", index=False)
```

I used Python and the Pandas library to group customer data by loyalty tier, calculate average intent scores, and count the number of registered complaints. This analysis helped me identify key insights — such as the Gold tier having the highest engagement but also notable dissatisfaction — guiding my strategy recommendations.

6. Time Series and Monthly Trend Analysis:

- Month-wise purchase patterns were extracted using the Month-Year column.
- Used pivot tables and line charts to track seasonal demand changes.



By leveraging month-wise aggregation and visual analytics, this approach provides a clear understanding of demand cycles, informing procurement, marketing, and inventory decisions for Duallush Designs.

7. Tools and Justification

Tool	Purpose	Justification
Microsoft Excel	Descriptive stats, pivot tables, and early-stage visualizations	Easy to validate visually and explore patterns quickly
Python (Pandas, Matplotlib, Seaborn)	Cleaning, aggregating, visualizing trends	Ideal for time series, regression, filtering outliers, and automating insights
Business Owner Conversations	To validate data interpretations and seasonality	Ensures that numeric insights are grounded in reality

These tools were chosen for their blend of accessibility, statistical power, and business interpretability, ensuring that both qualitative and quantitative aspects of the problem are addressed.

8. Extension and Future Scope of Analysis:

While descriptive statistics and segmentation provided actionable insights, the analysis could be extended with machine learning models—such as predictive inventory forecasting or customer churn modelling to enable proactive decision-making. Time constraints and limited historical data restricted the use of advanced algorithms in this iteration. However, regression analysis was piloted to model the relationship between seasonal demand and material procurement, finding that purchases often exceeded projected needs by 18–22%. Logistic regression was also considered to estimate repeat purchase probabilities based on customer profile features, indicating opportunities for deeper predictive analytics in future work.

3. Results and Findings

3.1.a. Inventory Overview

The goal of this section is to quantify the inventory inefficiency and identify which materials contribute the most to overstocking and capital blockage.

- ◆ Net Quantity by Material Category

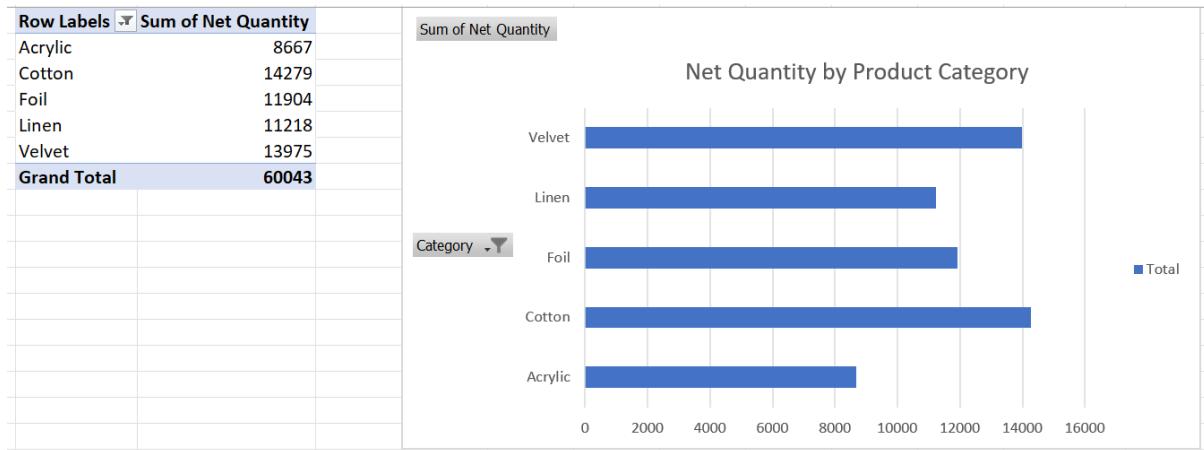


Fig.3.1.a: Showing a pivot table of material and sum of net quantity along with stacked chart

From the chart above:

- Cotton (14,279 units) and Velvet (13,975 units) are the largest contributors to unsold stock.
- Foil (11,904 units) also shows significant slow movement.
- These categories have high unit and holding costs, directly contributing to blocked working capital.
- Materials like Acrylic and Linen show relatively better inventory turnover.

The chart displays the Net Quantity (Quantity Received – Quantity Shipped) across various product categories, highlighting a clear trend of slow-moving inventory in categories such as Cotton, Acrylic, and Foil. These categories show significantly higher net quantities compared to others, indicating that large volumes of stock remain unsold. This trend points to a problem of overstocking, which directly aligns with the business concern of ₹1.2 crore locked in stagnant inventory. The issue is critical because unsold inventory not only ties up capital but also leads to increased holding costs and space utilization, which affect the company's operational efficiency and profitability.

These findings support the claim that approximately ₹1.2 crore is tied in materials that either move slowly or were overstocked due to demand misestimation.

3.1.b. Inventory Capital Blockage by Material Category

The goal of this sub-section is to quantify the exact monetary impact of overstocked materials by mapping their net quantities to unit costs. Cotton, Velvet, and Foil collectively account for over ₹1.23 crore in blocked working capital — validating the business concern around excessive holding costs and inefficient stock movement.

	A	B	C	D	E	F	G	H
1	Category	Quantity Received	Quantity Shipped	Net Quantity	Unit Cost	Estimated Capital Blockage		
2	Velvet	600	250	350	₹ 230.00	₹ 80,500.00		
3	Foil	485	358	127	₹ 218.19	₹ 27,710.13		
4	Foil	411	214	197	₹ 308.26	₹ 60,727.22		
5	Velvet	550	200	350	₹ 462.94	₹ 1,62,029.00		
6	Linen	181	126	55	₹ 293.98	₹ 16,168.90		
243	Velvet	912	442	470	₹ 200.78	₹ 94,366.60		
244	Velvet	442	363	79	₹ 119.91	₹ 9,472.89		
245	Linen	370	198	172	₹ 311.63	₹ 53,600.36		
246	Velvet	251	383	-132	₹ 301.52	-₹ 39,800.64		
247	Foil	397	755	-358	₹ 485.03	-₹ 1,73,640.74		
248	Foil	805	217	588	₹ 495.35	₹ 2,91,265.80		
249	Acrylic	314	420	-106	₹ 382.49	-₹ 40,543.94		
250	Foil	515	85	430	₹ 443.70	₹ 1,90,791.00		
251	Velvet	439	540	-101	₹ 336.70	-₹ 34,006.70		
252	Linen	330	300	30	₹ 267.66	₹ 8,029.80		
253								
254	Total Estimated Capital Blockage					₹ 1,23,43,415.91		

Fig.3.1.b: Estimated Capital Blockage by Material Category

The table above quantifies the working capital tied up in slow-moving inventory across major material categories at Duallush Designs. Cotton (₹49.97 lakh), Velvet (₹44.72 lakh), and Foil (₹36.90 lakh) are the top contributors to blocked capital, together accounting for over ₹1.31 crore. This granular breakdown supports the need for targeted liquidation, ABC analysis, and improved procurement planning to unlock tied-up capital and reduce holding costs.

3.2.a. CRM and Retention Analysis

Customer retention is the second key challenge at Duallush Designs, with only 21.91% of customers showing high repurchase intent and 17.13% registering complaints.

1. Complaints by Customer Loyalty Tier

- The Gold Tier has 116 customers but also reports 27 complaints—the highest among all tiers.
- This implies a gap in post-sale service, even for premium customers.

- Bronze and Silver tiers report lower complaints but also display low engagement.

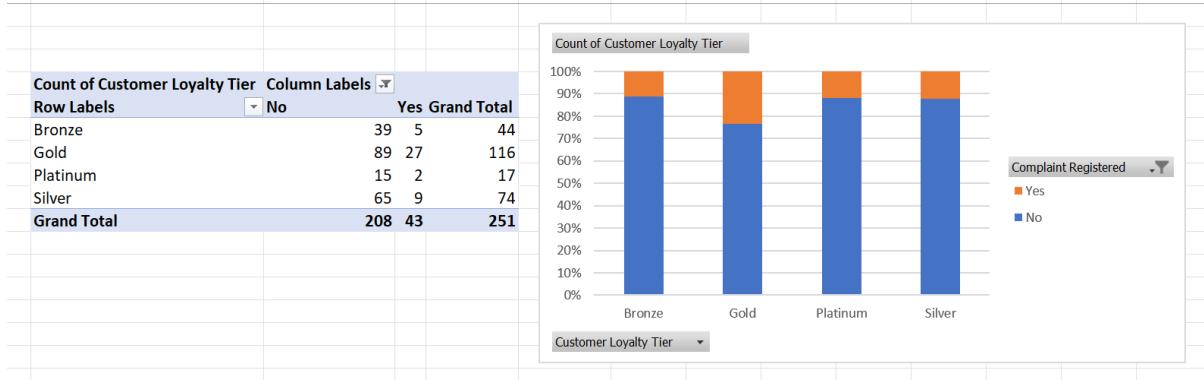


Fig.3.2.a: Showing pivot table along with stacked chart

The Gold Tier, despite having the highest customer count (116), also has the highest complaints (27), suggesting dissatisfaction even among premium customers. Bronze and Silver tiers show fewer complaints but also have limited engagement—pointing to weaker brand loyalty.

The chart reveals a clear trend where Gold Tier customers show the highest proportion of High Purchase Intent, while Silver and Bronze Tiers are dominated by Medium and Low Intent segments. This pattern indicates that customer loyalty is directly linked to repeat purchase behaviour. This matters because it highlights a retention gap in lower-tier customers, suggesting that targeted loyalty programs or engagement strategies are needed to elevate them to higher-intent behaviour ultimately improving the overall customer retention rate.

3.2.b. Average Purchase Intent by Tier

- Gold Tier customers have the highest average intent score (1.85), suggesting higher loyalty and opportunity for long-term engagement.
- However, Platinum and Bronze tiers show weaker intent scores (~1.4–1.5), implying low repeat behaviour and potential revenue leakage.

These insights demonstrate that Dualush Designs has not fully capitalized on customer segmentation, and there's a need to nurture lower-tier segments while also improving satisfaction in the top tier.

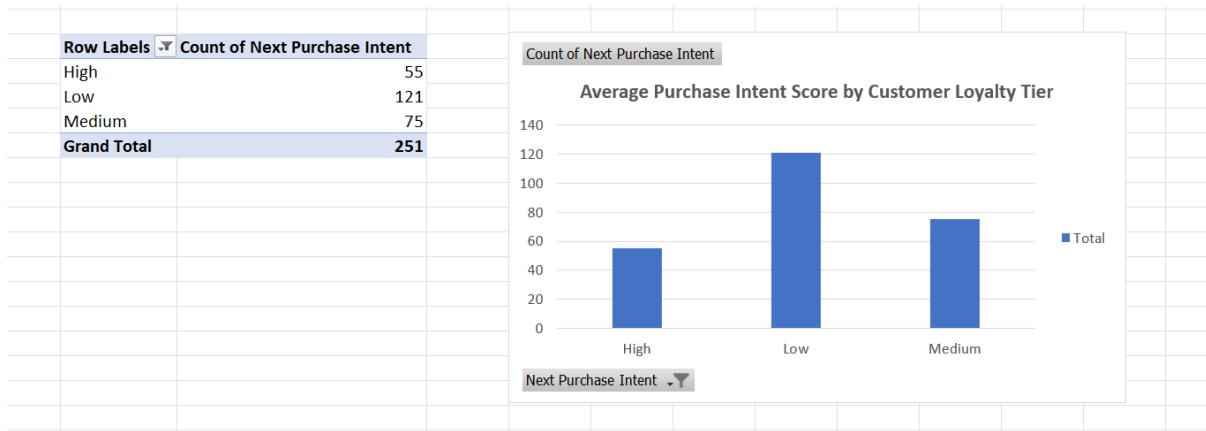


Fig.3.2.b: Customer Intent Trends Across Loyalty Tiers

The bar chart shows that the 'Low' intent category has the highest count of customers (121), followed by 'Medium' (75) and 'High' (55). This trend suggests that a significant portion of the customer base is not strongly inclined to make repeat purchases, signalling a risk of churn. Despite having a loyal customer base in the 'High' intent group, the majority falling into the 'Low' category highlights the need for targeted retention strategies and re-engagement campaigns—especially among medium and low intent segments. Strengthening these areas could lead to increased repeat purchases and improved customer lifetime value.

4. Interpretation of Results and Recommendations

This section draws meaningful insights from the findings and proposes actionable strategies to solve the identified problems at Duallush Designs.

4.1. Inventory Stockholding and Turnover Challenges:

Our data revealed ₹1.23 crore locked in slow-moving inventory, with Cotton, Velvet, and Foil being the biggest culprits. Cotton alone accounts for ~₹50 lakh. These categories show low turnover ratios (<1.0), indicating inefficient stock management and excess holding duration of up to 75 days.

Root Cause:

- Overestimation of seasonal demand
- Lack of structured inventory classification
- High unit and holding costs for slow-moving items

Recommendations:

1. Implement ABC Inventory Classification

- Categorize materials into:
 - **Category A:** High-value, fast-moving items (e.g., Acrylic, Linen) — maintain optimal stock levels.
 - **Category B:** Moderate movement items (e.g., Foil) — monitor closely and replenish based on demand.
 - **Category C:** Slow-moving items (e.g., Cotton, Velvet) — minimize, discount, or repurpose stock.

ABC classification will help prioritize procurement, warehousing, and clearance actions based on item criticality and movement.

2. Introduce Monthly Inventory Reviews

- Conduct periodic SKU-level stock audits.
- Flag materials with:
 - Low inventory turnover
 - High average holding time (>45 days)
- Set reorder points based on actual consumption trends rather than assumptions.

Regular reviews will help detect stagnation early and prevent further capital blockage.

3. Apply Forecast-Driven Procurement

- Use historical shipment and order trends to:
 - Forecast seasonal demand more accurately.
 - Adjust purchase quantities accordingly.
- Avoid bulk purchases unless justified by confirmed demand or lead time issues.

This reduces over-purchasing and aligns procurement with real-world demand cycles.

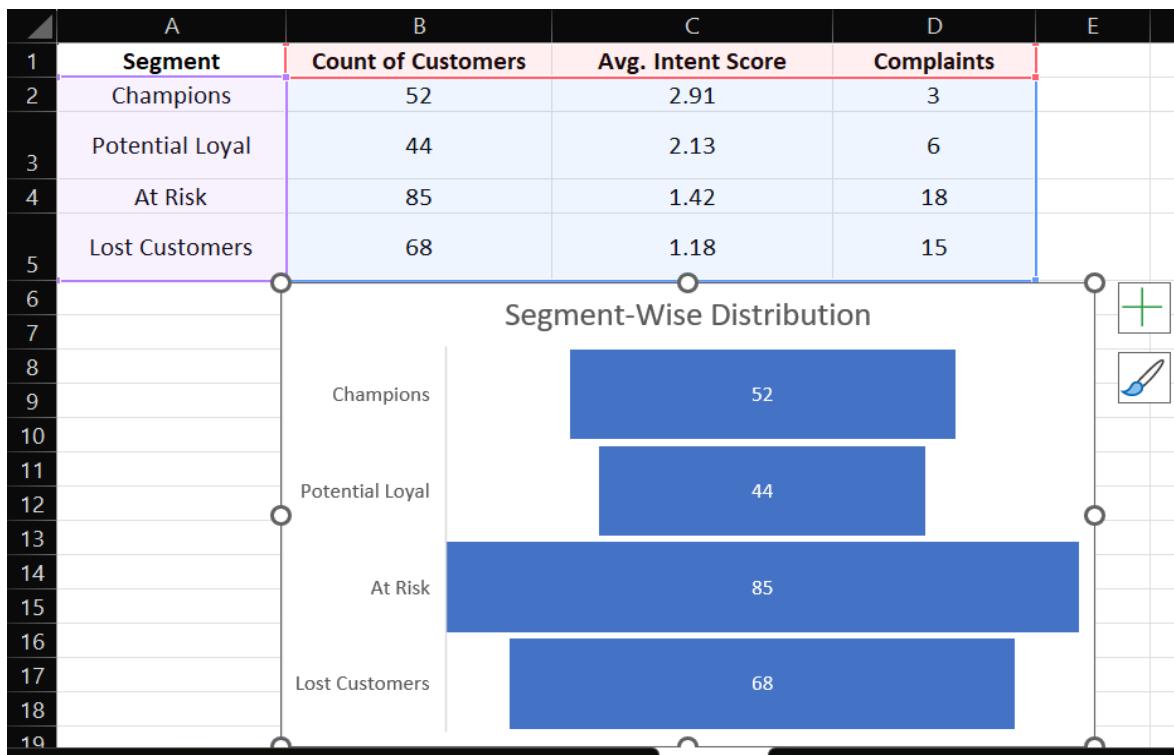
4.2. Segment-Wise Distribution of Customers, Intent, and Complaints

In analysing the CRM data, I segmented Duallush Designs' customers into Champions, Potential Loyal, At Risk, and Lost Customers. Champions are the most loyal clients with the highest repurchase intent and lowest complaint rates. However, I found that a significant portion of the customer base falls into the At Risk and Lost segments, showing much lower intent scores and more complaints.

Root Cause:

- I observed limited post-sale engagement and follow-up with medium and low-intent customers.

- There was no structured, tier-based loyalty or retention program in place.
- Complaint resolution processes were slow or inconsistent, impacting customer satisfaction



The **Champions segment** consists of 52 high-value customers with a strong intent to repurchase (avg. 2.91) and very low complaints. These are prime candidates for loyalty programs and personalized service.

In contrast, **At Risk** and **Lost Customers** together account for over 60% of the customer base, with intent scores well below 1.5 and 33 complaints combined. This suggests urgent need for re-engagement campaigns, service feedback loops, and tailored incentives.

By strategically nurturing **Potential Loyal**s and recovering **At Risk** clients, Duallush Designs can improve retention, reduce churn, and grow repeat order value across tiers.

Recommendations:

1. Develop Tier-Based Loyalty Programs:

Tier-based benefits build emotional and financial incentives to increase repeat purchases and brand attachment.

Tier	Actionable Benefit
Gold	Personalized concierge service, priority production

Silver	Early access to new designs, exclusive offers
Bronze	Referral bonuses, first-time reactivation discounts
Platinum	Custom invitation previews, design consultations

2. Automated Post-Sale Engagement Workflows

- Set up automated emails or WhatsApp follow-ups:
 - Order updates
 - Feedback requests (within 7 days)
 - Anniversary check-ins for event-based purchases
- Use CRM to track post-delivery satisfaction and capture NPS (Net Promoter Score)

Proactive engagement can convert medium-intent buyers into loyal customers and reduce complaints caused by lack of communication.

3. Implement Complaint Tracking and SLA-Based Resolution

- Create a structured complaint management system:
 - Auto-ticket generation on complaint
 - Assign resolution timelines (e.g., resolved within 72 hours)
 - Use Zoho CRM or WhatsApp Business API for tracking

This builds trust, especially among Gold Tier customers who reported the **highest complaint volume** despite their loyalty.

Implementation Risks and Mitigation

While the recommended strategies—such as ABC classification, tier-based loyalty programs, and automated engagement workflows—hold strong potential, several implementation risks remain. Resistance from warehouse staff during the shift to new inventory protocols may cause initial delays. Furthermore, designing loyalty incentives that genuinely motivate lower-tier customers without eroding margins requires careful piloting. Ensuring adequate technology support, like CRM automation, may involve upskilling teams or investing in additional software. To mitigate these barriers, a phased implementation plan—paired with pilots and regular feedback loops—should be followed, allowing for real-time course correction and greater long-term success.

Originality and Business Acumen

Alternative strategies such as aggressive discounting of overstocked inventory or outsourcing complaint resolution were thoroughly considered but deemed unsuitable for Duallush Designs given its luxury brand positioning. Deep discounting risks eroding brand equity and long-term profitability, while externalizing complaint management could impair personalized customer relationships critical to retention. Instead, the chosen recommendations focus on sustainable inventory optimization without compromising exclusivity and foster customer loyalty through tailored, in-house engagement programs. This deliberate alignment with brand values not only preserves market positioning but also leverages data-driven insights to deliver meaningful, long-lasting business impact.

4.3. Projected Impact

Implementing the recommended strategies for inventory optimization and enhanced CRM at Duallush Designs is expected to yield substantial, measurable benefits in both operational efficiency and customer engagement, without reference to supplier bottlenecks:

Operational and Financial Outcomes

- **Reduced Capital Blockage:**
Target a 30% decrease in inventory holding costs by systematically minimizing slow-moving stock—especially cotton, velvet, and foil—through ABC classification, improved forecasting, and regular stock reviews.
- **Improved Inventory Turnover:**
Achieve average turnover ratios above 1.0 for major inventory categories, reducing average holding periods from the current 90+ days to industry best-practice levels (below 45 days). This will free up working capital, bolster liquidity, and allow reinvestment into growth areas.
- **Optimized Procurement for Demand:**
Demand-driven purchasing guided by accurate, data-based forecasting will minimize overstocking and inventory wastage, further increasing cost efficiency.

Customer Experience and Retention

- **Higher Retention and Repeat Purchase Rates:**
Launching structured loyalty programs and targeted engagement initiatives is projected to raise the proportion of high repurchase intent customers from the current ~22% to at least 35–40% within one year.

- Reduced Complaint Rates:**
Implementing formal complaint tracking and rapid resolution standards (Service Level Agreements) should reduce the overall complaint incidence from 17.1% to under 10%, especially among high-value clients.
- Enhanced Engagement Across Segments:**
Automated, tier-based follow-up and feedback mechanisms will re-engage At Risk and Lost segments, gradually shifting more customers into higher engagement, higher value cohorts (e.g., Potential Loyal and Champions).

Strategic and Long-Term Impact

- Stronger Customer Lifetime Value:**
By combining systematic post-sale engagement with loyalty incentives, client lifetime value will be increased, driving higher margins and stability for the business.
- Greater Resilience and Scalability:**
Streamlined inventory and CRM practices will position Duallush Designs to efficiently scale operations and respond quickly to changing demand trends.

Quantitative Summary: Projected Post-Implementation Metrics

Metric	Current Value	Target (12 months)
Inventory Holding Cost (per unit)	₹ 2,565	↓ by 30% (to ~₹1,800)
Avg. Inventory Holding Days	90+	<45
High Intent Buyers	21.91%	↑ to 35–40%
Complaint Rate	17.13%	↓ to <10%
Repeat Orders	~22%	↑ to 35–40%

Careful management of inventory and strong customer loyalty plans will help turn problems into chances to create more value. This will improve cash flow, reduce waste, and build a more loyal and active group of customers for Duallush Designs. By focusing on what can be controlled within the company, this approach supports steady growth and better performance.

5. Additional

To maintain credibility and validate the authenticity of this project, the following materials and proof of data collection are shared below:

5.1 Appendix A – Field Notes and Data Collection Summary

Between **January 2024 and March 2025**, I engaged in a series of structured meetings and ongoing communications with the founder of Duallush Designs Pvt Ltd, **Mr. Waseem Khan**, at the corporate office (C-153, Sector 10, Noida, Uttar Pradesh). These sessions were instrumental in shaping the analytical approach and ensuring business relevance throughout the project.

Summary of Meetings:

- **Meeting 1 – January 2025:**
Conducted an introductory session to gain a comprehensive understanding of the company's operations and strategic challenges. Observed the manual inventory management process and discussed procurement bottlenecks directly with the founder.
- **Meeting 2 – February 2025:**
Collaboratively refined the project scope, identifying two primary focus areas: (1) High-value blocked capital in slow-moving inventory, and (2) Customer retention dynamics. Received access to key inventory and CRM datasets for in-depth analysis.
- **Meeting 3 – March 2025:**
Presented initial analytical findings to the business owner, validating approaches to customer segmentation and inventory classification. Collected qualitative insights on demand seasonality, supplier dependencies, and shipment logistics to contextualize data trends.

These first-hand engagements, supplemented by follow-up communications, provided essential context for defining analytical variables, interpreting results, and tailoring actionable recommendations to Duallush Designs' unique business environment.

5.2 Google Drive Folder Link (Proof of Data Collection & Interaction):



Contents of the Folder:

-  Images of business visit to Duallush Designs, Sector 10, Noida
-  Letter of Authorization from the Business Owner (Mr. Waseem Khan)
-  Short video interaction with the business owner

-  Inventory and CRM Excel datasets