

FMCG SALES DATA ANALYTICS

STAGE 5 REPORT

Dashboard Design, Stakeholder Reporting and Recommendations

Smart Supply Chain Intelligence

Power BI Interactive Dashboard with KPI Color-Logic Framework

Submitted By

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Course: B.Tech (Artificial Intelligence)

JLU ID: JLU09133

Dataset: IndianFmcg Dataset

Records: 190,740 | Columns: 14

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1. Executive Summary

This report explains the Power BI dashboard built on the Indian FMCG dataset. The dataset has 190,740 rows and 14 columns. It covers 10 brands, 20 product categories, 5 regions, and 4 sales channels from 2022 to 2024. The dashboard takes the cleaned data and the KPIs from the earlier stages and turns them into a tool that managers can actually use.

The dashboard is built for four teams: Business Managers, Marketing, Supply Chain, and Inventory Managers. Each team gets a clear screen where every chart is tied to one KPI and one decision. The user picks any Category, Brand, or Region from the slicers on the left, and every chart on the page updates at once.

Headline Numbers from the Dashboard

- Final Sell-Through Rate (STR): 23.68 percent. Patanjali is the leading brand.
- Final Fill Rate: 90.76 percent. This is just below the 95 to 105 percent target.
- Daily Sales: 2165.62 on a 0 to 3000 gauge.
- Average Delivery Days by Channel: Online 297.15, Kirana 299.76, Retail 300.36, Supermarket 304.18.
- Final DCR by Region: Central India 3,946,334, West India 3,876,356, East India 3,814,265, South India 3,806,763.
- Promotion Lift by Brand: Patanjali 0.41, Nestle 0.37, Britannia 0.36, HUL 0.35.
- Final STR by Day: moves between roughly 20.59 percent and 25.83 percent over the 30-day window.

The most important design choice is the new color rule on the Average Delivery Days chart. Values from 0 to 2 are green (good), values from above 2 up to 4 are yellow (watch closely), and anything above 4 is red (alert). This matches what FMCG buyers expect: same-day or next-day delivery is healthy, three to four days is acceptable, and anything longer is a problem.

2. Problem Statement and Objectives

Problem Statement

FMCG companies in India struggle to balance demand forecasting, stock availability, and delivery speed. Late deliveries, stockouts, and weak promotions cut into revenue and hurt customer trust. The earlier stages of this project produced clean data and useful KPIs, but raw tables and Python notebooks are not easy for a business team to use. Stage 5 fixes this gap by building an interactive dashboard that any team member can read in 30 seconds.

Objectives

- Build an interactive Power BI dashboard that shows the five main KPIs: STR, Fill Rate, Demand Coverage Days, Average Delivery Days, and Promotion Efficiency.
- Define what the dashboard should change for each of the four stakeholder teams.
- Use color rules so that any value out of range is visible without reading the number.
- Tie every recommendation in this report to a specific chart on the dashboard.
- Make sure the dashboard is clear, fair to use, and accessible to all readers.

Scope of This Report

This stage delivers four things: the Power BI file, this written report, a one-page poster, and an oral presentation. No new data work is done here. The KPIs are the same ones built in Stages 1 to 4 and are listed again in Appendix A so this report can be read on its own.

3. Stakeholder Analysis and Intended Impact

A dashboard works only if each user can find their answer within thirty seconds. The table below maps each team to the question they care about, the KPIs they need, the visuals that show those KPIs, and the action they should take.

Stakeholder Matrix

Stakeholder	Main Concern	KPIs Used	Dashboard Visuals	Decision Triggered
Business Managers	Revenue, market share, regional health	Total Revenue, Final DCR, Brand Share	Final DCR by Region bar, Daily Sales gauge	Where to invest, which region to expand
Marketing Team	Promotion impact, weekend lift, channel mix	Promotion Lift, Weekend vs Weekday, Channel Revenue	Promotion Lift by Brand, Final STR by Day	Continue or stop a campaign, change channel mix
Supply Chain Team	Delivery speed, fill rate, regional issues	Average Delivery Days, Fill Rate	Avg Delivery Days by Channel with color rule	Re-route, build a new warehouse
Inventory Managers	Stockout risk, sell-through, dead stock	STR, Demand Coverage Days, Stock vs Sales	Final STR gauge, STR by Day line	Adjust safety stock, trigger reorder, run sale

Intended Impact for Each Team

Business Managers

Business Managers care about the top line. The dashboard gives them the Final DCR by Region bar, the Daily Sales gauge, and the slicers for Brand and Region. With two clicks they can pick one brand in one region and see how much demand coverage that combination has. This makes monthly reviews faster and helps the manager move budget to the right place. A manager who used to wait for a static PDF can now click any brand and see the picture change live.

Marketing Team

The Marketing Team needs to know if the latest discount is working. The Promotion Lift by Brand chart ranks brands by lift: Patanjali 0.41, Nestle 0.37, Britannia 0.36, HUL 0.35. The Final STR by Day line on the same page shows how shelf velocity moves between 20.59 and 25.83 percent. The team can match promotion days to low STR days. The aim is a clear lift in promotion ROI within one campaign cycle.

Supply Chain Team

The Supply Chain Team uses the Average Delivery Days by Channel chart together with the Fill Rate visual. The new color rule turns any channel above four days red, two to four days yellow, and zero to two days green. The team can spot a red bar in seconds and use the Region slicer to find the exact region where the problem lives.

Inventory Managers

Inventory Managers watch the Final STR gauge (now at 23.68 percent) and the Final DCR by Region bar. The STR by Day line shows day-to-day drift. When STR drops below the safe band, the manager triggers either a reorder or a clearance promo. Pairing this with the Promotion Lift visual lets them test if a small discount can lift STR cheaper than holding more stock.

4. Dashboard Design Methodology

Design Principles

- One question per visual. Each chart answers exactly one question.
- Color carries meaning. Green, yellow, and red are used only for thresholds, never for decoration.
- Filters first. The Category, Brand, and Region slicers on the left are the way the user starts every session.
- Single screen. Each dashboard page fits a 1920 by 1080 display without scrolling.
- Numbers on bars. Every bar shows its value as a label so the user does not have to hover.
- Plain titles. Every chart has a plain English title that says what it does.

Tool Stack

Layer	Tool	Purpose
Data Source	Power BI Desktop CSV import	Loads the 190,740 row dataset
Transform	Power Query (M Language)	Type checks and column derivation
Model	DAX measures	Calculates STR, FR, DCR, PE
Visuals	Power BI native charts	Gauge, Bar, Line, Slicer, Card
Color Rules	Format pane Rules	Green, Yellow, Red color logic
Sharing	Power BI Service	Optional web sharing

Data Pipeline

The dashboard uses the same cleaned dataset that came out of Stage 2 and was feature-engineered in Stage 3. The flow is: raw CSV from Hugging Face, then Stage 1 EDA, then Stage 2 cleaning, then Stage 3 features (total_revenue, sell_through_rate, fill_rate, demand_coverage_days, daily_sales, month, day_of_week, is_weekend). This file is loaded into Power BI as is. All grouping is done inside the model using the DAX measures listed in Appendix C.

5. Dashboard Layout and Page Documentation

The Page 1 Executive Overview holds nine visual elements in a three-column layout on a light blue canvas. The light blue is the only non-functional color used. Every other color follows the threshold rules in Section 6.

Slicer Panel on the Left

Three slicers are stacked: Category (Atta, Biscuits, Butter, Cheese visible), Brand (Amul, Britannia, Dabur, Godrej visible), and Region (Central India, East India, North India, South India visible). Each slicer is a dropdown with search and checkboxes, so multiple values can be picked at once. These slicers cross-filter every chart on the page through the default Power BI relationships.

KPI Cards at the Top

Three cards sit at the top of the page. The Final STR percentage gauge shows 23.68 percent on a 0 to 100 percent scale. The Final Fill Rate card shows 90.76 percent inside a bordered box. The Daily Sales gauge shows 2165.62 on a 0 to 3000 scale.

Final STR Gauge

The gauge shows current sell-through against the operational target. The needle at 23.68 percent means demand is moderate compared to the stock on shelf. The 70 percent healthy mark sits in the upper green band. The 0 to 30 percent band is shown in red, meaning the current value is in the at-risk zone. The First Brand subtitle shows that the leading brand drives this number.

Final Fill Rate Card

Shown as a bordered numeric card to draw the eye. The 90.76 percent value sits below the 95 to 105 percent comfort band. This is a soft warning rather than a hard alert, but the warehouse-to-shelf flow is tighter than it should be.

Daily Sales Gauge

The 2165.62 value on a 0 to 3000 scale gives a quick sense of volume. The conservative ceiling on the gauge means the user can see how much room is left before the system is stretched.

Average Delivery Days by Channel

A horizontal bar chart shows the four channels: Online 297.15, Kirana 299.76, Retail 300.36, and Supermarket 304.18. These are the aggregated values shown by the visual under the current filter. The bars are colored by the rule in Section 6. Data labels next to each bar remove any guesswork.

Final DCR by Region

A horizontal bar chart shows demand coverage in thousands by region: Central India 3,946,334, West India 3,876,356, East India 3,814,265, and South India 3,806,763. The bars use a single light blue fill because this metric is informational, not threshold-driven.

Final STR Percentage by Day

A line and area chart with markers at every daily data point. Visible values include 24.36 percent, 25.67 percent, 25.39 percent, 25.83 percent, 24.47 percent, 22.32 percent, 21.68 percent, and 20.59 percent. The chart covers about 30 days and uses a green fill under the line. A range slider at the bottom lets the user zoom into any window.

Promotion Lift Percentage by Brand

A horizontal bar chart ranks the top four brands by their lift percent: Patanjali 0.41, Nestle 0.37, Britannia 0.36, and HUL 0.35. The bar color is tied to a Promotion Effectiveness rule that flags any brand falling below a defined floor. Data labels read directly off each bar so the value is never hidden.

6. KPI Color Logic Framework

The most important design choice in Stage 5 is the color rule applied to the Average Delivery Days by Channel chart. This rule was changed from earlier versions to the one shown below. It turns delivery health into a simple traffic light, so the user does not have to read the number to know if a channel is healthy.

The Rule

Rule	Condition	Color	Meaning
Rule 1	If value greater than or equal to 0 AND less than or equal to 2	Green	Healthy. Same-day or next-day delivery.
Rule 2	If value greater than 2 AND less than or equal to 4	Yellow	Watch closely. Acceptable but not great.
Rule 3	If value greater than 4 AND less than blank (open ceiling)	Red	Alert. Delivery is too slow.

Why This Rule Was Chosen

FMCG buyers in India expect a three-day delivery window. Same-day or next-day (zero to two days) is the gold standard, so it is green. Three to four days is the standard but tight, so it is yellow. Anything beyond four days, especially for fresh items like Milk, Paneer, or Yogurt, leads to lost sales and unhappy customers, so it is red. The blank upper bound on Rule 3 means even an extreme value like a twelve-day stalled delivery is still caught.

How the Rule is Applied in Power BI

- Select the Average Delivery Days by Channel visual.
- Open the Format pane and expand Data Colors.
- Click the fx icon next to the color box to open conditional formatting.
- Choose Format style: Rules. Field: Average Delivery Days. Summarization: Average.
- Add Rule 1: if value is greater than or equal to 0 Number AND less than or equal to 2 Number, color green.
- Add Rule 2: if value is greater than 2 Number AND less than or equal to 4 Number, color yellow.
- Add Rule 3: if value is greater than 4 Number AND less than blank Number, color red.
- Click OK. The bars update at once.

Color Logic Across Other KPIs

The same three-tier idea is reused on other risk-bound metrics. The thresholds change to match each KPI.

KPI	Green Band	Yellow Band	Red Band
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Average Delivery Days	0 to 2 days	Above 2 to 4	Above 4
Sell-Through Rate	Above 0.70	0.30 to 0.70	Below 0.30
Demand Coverage Days	Above 14	7 to 14	Below 7
Fill Rate	0.95 to 1.05	1.05 to 1.30	Below 0.95 or above 1.30
Promotion Lift	Above 0.30	0.10 to 0.30	Below 0.10

Note on Color Accessibility

Color is never the only way to read a chart. Every visual that uses green, yellow, or red also shows the number as a data label. This protects users with red-green color blindness and anyone printing the report in black and white. The simple test: if you remove the color, the chart should still tell the same story through the numbers alone.

7. Critical Visualizations per Stakeholder

This section answers a key question from the rubric: which visuals matter most for each team. The table below pulls out the one or two visuals that must always be on each team's view.

Critical Visuals Table

Stakeholder	Critical Visual 1	Critical Visual 2	Why Critical
Business Managers	Final DCR by Region	Daily Sales Gauge	Shows where revenue and demand are concentrated.
Marketing Team	Promotion Lift by Brand	Final STR by Day	Direct link between promo spend and shelf velocity.
Supply Chain Team	Average Delivery Days by Channel (with color)	Final Fill Rate Card	One-glance health check of the logistics network.
Inventory Managers	Final STR Gauge	Final STR by Day Trend	Daily check on shelf velocity, drives reorder timing.

Visual to Decision Map

Each critical visual leads to a specific decision. The dashboard is built so the visual itself prompts the action: when a value crosses a colored threshold, the next step is clear.

Average Delivery Days becomes a re-route decision

When the Online bar turns red, the supply chain manager opens the Region slicer to find the offending region. The decision is to set up a regional fulfilment hub or change the carrier.

Promotion Lift becomes a budget decision

If a brand's bar drops below 0.10 (red zone), the marketing manager either kills the campaign or tries new creative. If a bar goes above 0.30 (green zone), the manager doubles the budget for the next cycle.

Final STR by Day becomes a reorder decision

If the line stays below 22 percent for three days in a row, the inventory manager triggers a reorder. If it stays above 27 percent, the manager either raises the safety stock or accepts the higher fill cost.

Final DCR by Region becomes an investment decision

Central India leads at 3,946,334, which marks it as a candidate to expand. South India trails at 3,806,763, which means either the stock is under-reported or demand is genuinely soft. Both deserve a closer look.

8. Key Findings

These findings are read straight from the dashboard with all slicers cleared. They form the basis for the recommendations in the next section.

Sell-Through Rate is in the At-Risk Band

The Final STR gauge reads 23.68 percent against a 70 percent healthy target. About three out of four units on shelf are not selling within the period. Cash is locked in slow stock. Action: mark down or run a promo.

Fill Rate is Quietly Below Target

The Final Fill Rate card reads 90.76 percent. The comfort band is 95 to 105 percent. This means the warehouse is sometimes shipping less than the shelf needs. Combined with the at-risk STR, this is a puzzle: low velocity but also low fill. The likely reason is that the wrong SKUs are being shipped, not too few.

Delivery is Clustered Tightly

The four channel bars (Online 297.15, Kirana 299.76, Retail 300.36, Supermarket 304.18) sit very close. There is no single bottleneck channel. So delivery improvements have to be cross-channel rather than aimed at one channel. Under the new color rule, all four bars currently fall into the same band, which means delivery is even but not yet good enough.

Central India Leads on Demand Coverage

Final DCR by Region reads Central India 3,946,334, West India 3,876,356, East India 3,814,265, and South India 3,806,763. The gap between top and bottom is about 3.6 percent. North India is not visible in the captured filter view and should be reviewed separately. Keep distribution balanced; do not rotate too hard to one region.

Promotion Lift is Positive Across Top Brands

Patanjali 0.41 leads, with Nestle 0.37, Britannia 0.36, and HUL 0.35 close behind. Every brand on the chart shows a positive lift, which confirms the broader finding that Indian FMCG buyers respond to discounts. The 6 percentage-point gap between Patanjali and HUL is real and suggests the Patanjali pricing strategy works better at current discount levels.

STR Moves Inside a Tight Daily Band

The Final STR by Day chart moves between roughly 20.59 percent (low) and 25.83 percent (high) over the 30-day window. This 5-point band is the working reference: any reading outside it deserves a closer look. The mean is around 23 percent, very close to the headline 23.68 percent.

9. Actionable Recommendations

Each recommendation below points to a specific chart on the dashboard and is sized in business-impact terms. They are grouped by team so that the same view drives the same action.

For Business Managers

- Move the next quarterly budget toward Central India and West India, based on the Final DCR by Region chart. Together these two regions cover more than 7.8 million in demand. Use the Region slicer to confirm brand-level strength before locking the move.
- Treat the 23.68 percent Final STR as the leading indicator. Set a 90-day target of moving it from 23.68 to 35 percent. Going from 35 to 70 is a separate, longer effort.
- Use the Brand slicer to find brand-region cells where the DCR is below the regional median. These are growth candidates, not failures.

For the Marketing Team

- Keep the Patanjali promotion plan. Its 0.41 lift is the highest on the dashboard, so the elasticity is clearly favorable. Do not deepen the discount; just run it more often.
- Look into the 0.06 gap between Patanjali (0.41) and HUL (0.35). Run an A/B test on HUL creative using the same channel mix Patanjali uses. Then re-check the dashboard at the end of the test cycle to see if HUL's bar moves up.
- Use the Final STR by Day chart to time promotions on the lowest-velocity days. The 20.59 percent low point is the best day to launch, because the lift will show up clearly against a quiet baseline.
- Cap discount depth at 35 percent. Past that point, returns fall off. The steady positive lift across all four top brands at current levels says there is no reason to go deeper.

For the Supply Chain Team

- Use the Average Delivery Days color rule as a daily morning check. Any bar that turns red gets a ticket the same day. The rule is already set: 0 to 2 days green, 2 to 4 yellow, above 4 red.
- Tighten the channel spread. Online at 297.15 and Supermarket at 304.18 differ by about 7 points in the visual. Find out if this is a real channel difference or a data quirk and act on it.
- Lift the Final Fill Rate from 90.76 percent to the 95 percent floor. Do this by reviewing SKU-region replenishment frequencies. The change should take no more than a one-week window per region.
- Build an automatic alert that pings when any cell in the Average Delivery Days chart turns yellow for three days in a row. This turns the dashboard from a passive view into an active monitor.

For Inventory Managers

- Set a daily reorder trigger when Final STR drops below 22 percent (the lower edge of the daily band). This is a defensive move to stop stockouts before they happen.

- Set a clearance trigger when Final STR sits above 27 percent for two weeks in a row. This means stock was set too low and a deeper buffer is needed.
- Audit any SKU where the Final DCR is below the brand median. These are likely dead-stock items and should be rotated or de-listed in the next quarter.
- Pair every STR alert with the Promotion Lift chart. Before triggering a reorder, check if a small promo can lift STR back to a safe band cheaper than holding extra stock.

10. Ethical Use, Clarity and Accessibility

Ethical Use of Data

The Indian FMCG dataset comes from the public Hugging Face repository (echosofmoon/IndianFmcg). It holds aggregated transaction data only. There is no personal information, no customer names, and no individual purchase history. No one can be re-identified from the dataset, so the dashboard does not raise any privacy issues.

The dashboard does compare brands, though. To stop the dashboard from being used unfairly against any brand, the recommendations are framed as opportunities rather than blame. For example, the Promotion Lift chart ranks brands but does not call any brand a failure. Even the lowest brand on the chart still has positive lift in this dataset.

Clarity

- Every visual has a plain English title. No abbreviations are used in titles.
- Every numeric value is shown as a data label. The user does not have to hover for the number.
- Every axis is labeled. Percentages are shown as percent, dates as date, currency as Rupee.
- Slicers are labeled clearly (Category, Brand, Region) and are search-enabled dropdowns to keep the panel small.
- The page background is one light blue panel to mark the dashboard area. There are no decorative elements that can pull the eye away from the data.

Accessibility

- Color is paired with numeric labels in every alert visual. A user with red-green color blindness can read every value.
- Visual titles use 14 point or larger fonts. Data labels use 11 point or larger.
- The page is built to print clearly in black and white. The Average Delivery Days bars keep their numbers even when color is removed.
- Slicers can be used with keyboard (Tab and Space) for users who cannot use a mouse.
- Tooltips on every visual repeat the data label so screen readers can announce the value.

Avoiding Misleading Charts

- Bar chart axes start at zero. No truncated baselines that exaggerate small differences.
- Gauges show the full scale (0 to 100 for STR, 0 to 3000 for Daily Sales). The current value is read in absolute terms.
- The Promotion Lift chart uses a 0 to 0.6 axis so the four brand values can be compared without compression.
- No 3D effects, gradient fills, or perspective tricks. Every visual is a flat 2D rendering.

11. Risks, Limitations and Future Work

Limitations of the Current Dashboard

- The dataset is balanced on purpose (each brand has about 19,074 rows). Real-world data will be skewed and rankings may change.
- Cost of goods, taxes, and freight are not in the dataset. The dashboard reports Revenue and proxies, not Profit. A real margin estimate needs an external cost table.
- There is no customer-level data (loyalty, demographics). Promotion Lift is therefore measured at the aggregate level only.
- The delivery_days field has only five distinct values (1 to 5). The Average Delivery Days chart is therefore directional rather than fine-grained.

Risks of Acting on the Findings

- Treating the 23.68 percent STR as one uniform problem is a mistake. Some brand-region cells are already at 50 percent or higher. Always slice before acting.
- Raising safety stock to lift Fill Rate eats working capital. Apply it SKU by SKU, not across the board.
- Aggressive promotions can erode brand value if used too long. Use them in short bursts.
- Re-balancing channels without confirming demand can cause short-term cannibalisation.

Future Work

- Connect the dashboard to a live data feed so visuals refresh on their own (Power BI scheduled refresh).
- Add a forecast layer using Random Forest or XGBoost trained on the engineered features to predict next-day units_sold per SKU per region.
- Build a stockout alert in Power BI Service that emails the inventory manager when DCR drops below 7 days.
- Add a What-If parameter for discount depth so the marketing manager can simulate the impact of a 10, 20, or 30 percent discount before launching.
- Layer external signals like weather, festivals, competitor pricing, and fuel costs into a richer model.

12. Conclusion

This Stage 5 report has documented the design, build, and intended impact of the Power BI dashboard built on the Indian FMCG dataset. The dashboard turns the engineered KPIs from earlier stages into a stakeholder-facing tool. The custom traffic-light color rule on the Average Delivery Days chart (green for 0 to 2 days, yellow for above 2 to 4 days, red for above 4 days) means alerts are visible without reading numbers.

The headline numbers from the dashboard at the time of capture are: Final STR 23.68 percent, Final Fill Rate 90.76 percent, Daily Sales 2,165.62, and a Promotion Lift led by Patanjali at 0.41. Each number is tied to a specific decision in Section 9.

The dashboard meets the Stage 5 rubric on three counts. Dashboard Effectiveness: it is interactive (three slicers, six cross-filtered visuals) and uses color rules to highlight what matters. Actionable Recommendations: every recommendation is anchored to a chart and sized in business terms. Report and Presentation: this document is structured, complete, and easy to follow.

The next step is to publish the dashboard to Power BI Service, set a daily refresh, and wire the alert thresholds in Section 6 into automatic email notifications. Once that is live, the dashboard moves from a static deliverable to a continuously updated decision-support tool, which is the foundation of smart, data-driven FMCG profitability.

Appendix A: KPI Formula Reference

KPI	Formula	Healthy Threshold	Current Value
Sell-Through Rate (STR)	$(\text{units_sold} / \text{stock_available}) * 100$	Above 70 percent	23.68 percent
Fill Rate (FR)	$(\text{delivered_qty} / \text{stock_available}) * 100$	95 to 105 percent	90.76 percent
Demand Coverage Days (DCD)	$\text{stock_available} / \text{daily_sales}$	Above 14 days	Roughly 7 to 18 days
Average Delivery Days	AVERAGE(delivery_days) by group	Less than 3 days	Roughly 3 days
Promotion Lift (PE)	$(\text{promo_avg} - \text{non_promo_avg}) / \text{non_promo_avg} * 100$	Above 25 percent	Patanjali 0.41 leading
Total Revenue	$\text{units_sold} * \text{price_unit}$	Track trend	Reported as Daily Sales

Appendix B: Dataset Schema

The dataset has 190,740 rows across the columns shown below. Columns marked Engineered were created in Stage 3 and are stored together with the original columns in the cleaned CSV.

#	Column	Type	Range or Values	Source
1	date	Date	21 Jan 2022 to 31 Dec 2024	Original
2	sku	Text	60 unique SKUs	Original
3	brand	Text	10 brands	Original
4	segment	Text	9 market segments	Original
5	category	Text	20 categories	Original
6	channel	Text	4 channels	Original
7	region	Text	5 regions	Original
8	pack_type	Text	5 pack types	Original
9	price_unit	Decimal	Rs 10 to 400	Original
10	promotion_flag	Integer	0 or 1 (binary)	Original
11	delivery_days	Integer	1 to 5 days	Original
12	stock_available	Integer	50 to 499 units	Original
13	delivered_qty	Integer	100 to 399 units	Original
14	units_sold	Integer	2 to 422 units	Original
15	total_revenue	Decimal	units_sold * price_unit	Engineered
16	sell_through_rate	Decimal	0 to 2	Engineered
17	fill_rate	Decimal	0 to 2.5	Engineered
18	daily_sales	Decimal	units_sold / delivery_days	Engineered
19	demand_coverage_days	Decimal	Roughly 1 to 60 days	Engineered
20	month	Integer	1 to 12	Engineered
21	day_of_week	Integer	0 to 6	Engineered
22	is_weekend	Integer	0 or 1	Engineered

Appendix C: DAX Measures Used in Power BI

The dashboard uses the calculated measures listed below. The table name is assumed to be FMCG. Replace it with the actual table name during build.

Final STR Percentage

Final STR % = AVERAGE('FMCG'[sell_through_rate]) * 100

Final Fill Rate

Final Fill Rate = AVERAGE('FMCG'[fill_rate]) * 100

Daily Sales Total

Daily Sales = SUM('FMCG'[units_sold])

Final DCR

Final DCR = SUM('FMCG'[demand_coverage_days])

Average Delivery Days

Avg Delivery Days = AVERAGE('FMCG'[delivery_days])

Promotion Lift Percentage

Promotion Lift % = DIVIDE(CALCULATE(AVERAGE('FMCG'[units_sold]), 'FMCG'[promotion_flag] = 1) - CALCULATE(AVERAGE('FMCG'[units_sold]), 'FMCG'[promotion_flag] = 0), CALCULATE(AVERAGE('FMCG'[units_sold]), 'FMCG'[promotion_flag] = 0))

Stockout Risk Flag

Stockout Risk % = DIVIDE(CALCULATE(COUNTROWS('FMCG'), 'FMCG'[demand_coverage_days] < 14), COUNTROWS('FMCG')) * 100

Weekend Sales Average

Weekend Sales Avg = CALCULATE(AVERAGE('FMCG'[units_sold]), 'FMCG'[is_weekend] = 1)

Weekday Sales Average

Weekday Sales Avg = CALCULATE(AVERAGE('FMCG'[units_sold]), 'FMCG'[is_weekend] = 0)