

Documentation: Database Schema Calculations and Equations

Table: `Dashboard`

1. `target_value`:

- **Purpose:** Represents the expected or desired value for the KPI. Setting a target helps in performance evaluation by comparing actual results against the goal.
- **Example:** For 'Product Performance,' the target might be a specific sales figure or a market share percentage.

2. `actual_value`:

- **Purpose:** Stores the real-time or most recent value of the KPI. It allows comparison with the target to assess if objectives are being met.
- **Example:** For 'Trade vs Brand Value Idx,' the actual value might indicate whether current trade activities are providing the desired boost to the brand.

3. `last_update`:

- **Purpose:** Tracks when the KPI was last updated. Ensures that the data is current and relevant.
- **Example:** This might show the last time the 'Price Change Idx' was recalculated.

4. `description`:

- **Purpose:** Provides a textual explanation of the KPI or the metric being tracked. This aids in understanding the KPI, especially when the names might not be self-explanatory.
- **Example:** For 'RGM Idx,' the description might explain that it measures the efficiency of revenue growth strategies.

5. `rgm_idx`:

- **Purpose:** Compares the value market share to volume market share to assess revenue generation efficiency.
- **Equation:**

$$\text{RGM Index} = \frac{\text{Value Market Share}}{\text{Volume Market Share}}$$

- **Example:** If the RGM Index is greater than 1, it indicates that the value market share is higher than the volume market share, suggesting better revenue generation.

6. `brand_value_idx_avmv`:

- **Purpose:** Measures the brand value performance relative to the market average.
- **Equation:**

$$\text{Brand Value Index} = \frac{\text{Brand Value Sales}}{\text{Average Market Value Sales}}$$

- **Example:** A Brand Value Index above 1 indicates the brand's value is above the market average, while below 1 suggests it is below average.

7. `brand_value_idx_ly`:

- **Purpose:** Evaluates how the brand's value sales have changed relative to the previous year.

- **Equation:**

$$\text{Brand Value Index} = \frac{\text{Value Sales of Your Brand This Year}}{\text{Value Sales of Your Brand Last Year}}$$

- **Example:** A Brand Value Index greater than 1 indicates growth in value sales compared to the previous year.

8. trade_vs_brand_idx:

- **Purpose:** Compares the brand's actual market share to its fair share based on perceived brand value.

- **Equation:**

$$\text{Trade vs Brand Index} = \frac{\text{Actual Market Share}}{\text{Brand Fair Share}}$$

- **Example:** A Trade vs Brand Index greater than 1 indicates that the actual market share exceeds the fair share, suggesting strong brand performance.

9. price_change_idx:

- **Purpose:** Evaluates price changes by comparing manufacturer and market value to volume ratios.

- **Equation:**

$$\text{Price Change Idx} = \frac{\text{Mfc. Value/Mfc. Volume (LY vs YTD)}}{\text{Mkt Value/Mkt Volume (LY vs YTD)}}$$

- **Example:** A Price Change Index greater than 1 indicates that the manufacturer's value-to-volume ratio has increased more than the market's, suggesting a successful price change strategy.

Table: MarketPerformance

- **Description:** Tracks overall market performance metrics, such as sales growth and market share.

- **Columns:**

1. **Market Segment:** Identifies market segments like "Luxury Goods" or "Budget Products."

2. **Target Sales Growth:**

- **Definition:** The growth percentage target for sales in a specific segment.
- **Equation:** Business strategy or historical performance.
- **Example:** A 10% growth target might be set for "Retail."

3. **Actual Sales Growth:**

- **Definition:** The actual growth percentage achieved in sales.
- **Equation:**

$$\text{Actual Sales Growth} = \frac{\text{Current Sales} - \text{Previous Sales}}{\text{Previous Sales}} \times 100$$

- **Example:** "Luxury Goods" achieved a 7% growth against a target of 10%.

4. Market Share:

- **Definition:** The company's percentage of total market sales.
- **Equation:**

$$\text{Market Share} = \frac{\text{Company Sales}}{\text{Total Market Sales}} \times 100$$

- **Example:** The company holds 15% of the total market.

Table: BrandPromotion

This section provides detailed metrics and formulas related to promotions by brand, focusing on various aspects like sales uplift, volume, value, and efficiency.

1. Promo Volume Sales P12M:

- **Formula:**

$$\text{Promo Volume Sales P12M}$$

- **Purpose:** Tracks the total volume of sales driven by promotions over the past 12 months.

2. Volume Sold On Deal (VSOD) P12M:

- **Formula:**

$$\text{VSOD P12M} = \frac{\text{VSOD P12M}}{\text{Volume P12M}} \times 100\%$$

- **Purpose:** Represents the percentage of total volume sold during promotions over the last 12 months.

3. VSOD (LYA):

- **Formula:**

$$\text{VSOD (LYA)} = \frac{\text{VSOD P12M}}{\text{VSOD (Previous 12M)}} \times 100\%$$

- **Purpose:** Compares the volume sold on deals in the last 12 months against the previous 12 months to assess the change in promotional effectiveness.

4. Value Uplift:

- **Formula:**

$$\text{Value Uplift} = \frac{\text{Incremental Value}}{\text{Baseline Sales}} \times 100\%$$

- **Purpose:** Evaluates the percentage increase in sales value due to the promotion, relative to the baseline sales.

5. Value Uplift (IYA):

- **Formula:**

$$\text{Value Uplift (LYA)} = \frac{\text{Incremental Value (IYA)}}{\text{Baseline Sales (IYA)}} \times 100\%$$

- **Purpose:** Similar to Value Uplift, this measures the year-over-year improvement in promotional effectiveness by comparing the current incremental value against the previous year's baseline sales.

6. Discount Depth:

- **Formula:**

$$\text{Discount Depth} = \left(\frac{\text{Promo Price per Kg}}{\text{Base Price per Kg}} - 1 \right) \times 100\%$$

- **Purpose:** Calculates the extent of discount offered during the promotion, expressed as a percentage reduction from the base price.

7. Promo Efficiency:

- **Formula:**

$$\text{Promo Efficiency} = \text{ROI}$$

- **Purpose:** Measures the return on investment (ROI) for the promotion, indicating how efficiently the promotion generated additional revenue.

Table: Distribution Efficiency

- **Description:** Focuses on the efficiency of product distribution, calculated by dividing the value sales by the weighted distribution (WTD).

- **Columns:**

1. Distribution Efficiency:

- **Definition:** Measures how effectively value sales are tracked or achieved in relation to the weighted distribution.

- **Equation:**

$$\text{Distribution Efficiency} = \frac{\text{Value Sales}}{\text{WTD}}$$

- **Purpose:** Provides insight into how well value sales are performing relative to the weighted distribution, indicating the effectiveness of distribution strategies.
- **Example:** If the value sales amount to 50,000 and the weighted distribution (WTD) is 500, the Distribution Efficiency would be 100. This means that each unit of weighted distribution corresponds to 100 in value sales.

Table: Market Channel Performance

- **Description:** Evaluates the performance of various market channels, including metrics like channel effectiveness and cost efficiency.

- **Columns:**

1. **Channel ID:** Unique identifier for each market channel.

2. Channel Effectiveness:

- **Definition:** Measures how effective a channel is in generating sales or leads.
- **Equation:**

$$\text{Channel Effectiveness} = \frac{\text{Sales from Channel}}{\text{Total Sales}} \times 100$$

- **Example:** If a channel generates 30% of total sales, its effectiveness is 30%.

3. Cost Efficiency:

- **Definition:** Measures the cost-effectiveness of a channel.
- **Equation:**

$$\text{Cost Efficiency} = \frac{\text{Channel Revenue}}{\text{Channel Cost}} \times 100$$

- **Example:** A channel with a 200% cost efficiency is highly effective.

Beyond calculating features

1. Brand fair share

Brand fair share represents the proportion of market sales that your brand should ideally capture based on factors like its perceived value, market position, and potential demand. Calculating brand fair share typically involves comparing your brand's performance to that of its competitors in the market. Here's a simplified approach to calculating brand fair share:

1. **Define the Market Segment:** Identify the specific market segment or category that your brand operates in. This could be based on product type, target demographic, or other relevant factors.
2. **Gather Market Data:** Collect data on the total sales (either in volume or value) for the entire market segment. This could include data from industry reports, market research studies, or internal sales data aggregated for the entire market.
3. **Calculate Your Brand's Market Share:** Determine your brand's share of the total market sales within the defined market segment. This can be calculated using either volume sales or value sales, depending on what is most relevant to your analysis.

$$\text{Market Share} = \frac{\text{Your Brand's Sales}}{\text{Total Market Sales}}$$

4. **Calculate Competitors' Market Shares:** Gather similar data for your competitors within the same market segment and calculate their market shares using the same formula.
5. **Calculate Brand Fair Share:** Brand fair share can be calculated as the average market share of all competitors in the market segment. This assumes that each competitor's market share represents their fair share of the market.

$$\text{Brand Fair Share} = \frac{\text{Sum of Competitors' Market Shares}}{\text{Number of Competitors}}$$

6. **Compare Your Brand's Market Share to Fair Share:** Finally, compare your brand's market share to its fair share. If your brand's market share is higher than its fair share, it may indicate that your brand is overperforming relative to competitors. Conversely, if your brand's market share is lower than its fair share, it may indicate potential growth opportunities or areas for improvement.

2. relative price

Relative price is a concept used in marketing and economics to compare the price of a product or service relative to its competitors or to a benchmark. It helps businesses understand their pricing position within the market and make informed decisions about pricing strategies.

Calculating relative price involves comparing the price of your product or service to the prices of similar products or services offered by competitors or substitutes. Here's a simple formula to calculate relative price:

$$\text{Relative Price} = \frac{\text{Price of Your Product}}{\text{Price of Competitor's Product}}$$

Where:

- **Price of Your Product:** The price at which you are selling your product or service.
- **Price of Competitor's Product:** The price at which a competitor is selling a similar product or service.

By dividing your price by the competitor's price, you get a ratio that indicates how your price compares to theirs. If the relative price is greater than 1, it means your product is priced higher than the competitor's product. If it's less than 1, your product is priced lower. If it's equal to 1, your product is priced the same as the competitor's.

Understanding relative price can help businesses make pricing decisions, such as whether to adjust prices to be more competitive, differentiate their product based on perceived value, or maintain premium pricing if offering additional features or benefits. It's important to consider other factors such as quality, brand reputation, and customer preferences when interpreting relative price data.