

## Sales Dashboard



### Sales Dashboard | 2023



#### Total Sales

**\$733K**

▲ 20.4% vs. PY



#### Total Profit

**\$93K**

▲ 12.5% vs. PY



#### Total Quantity

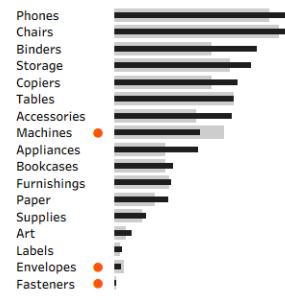
**\$12K**

▲ 26.8% vs. PY



#### Sales & Profit By Subcategory

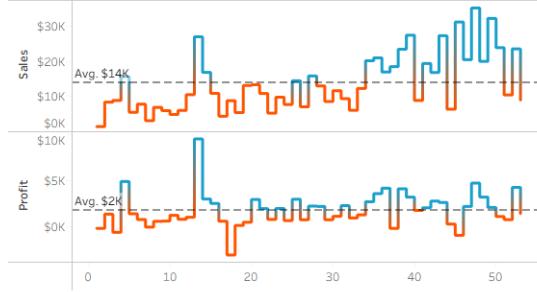
2023 Sales vs. 2022 Sales



2023 ● Profit ● Loss

#### Sales & Profit Trends over Time

2023 ● Above ● Below



### Customer Dashboard | 2023



#### Total Customers

**693**

▲ 8.6% vs. PY



#### Total Sales Per Customers

**\$1,058**

▲ 10.8% vs. PY



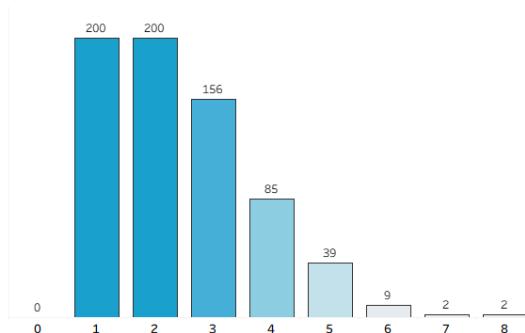
#### Total Orders

**1,687**

▲ 28.3% vs. PY



#### Customer Distribution by Nr. of Orders



#### Top 10 Customers by Profit

Rank	Customers	Last Order	2023 Profit	2023 Sales	Orders
#1	Raymond Buch	25-09-2023	▲ 97.1%	\$6,781	\$14,203
#2	Hunter Lopez	17-11-2023	▲ 97.5%	\$5,046	\$10,523
#3	Tom Ashbrook	22-10-2023	▲ 101.6%	\$4,599	\$13,723
#4	Andy Reiter	24-12-2023	▲ 99.6%	\$2,608	\$5,821
#5	Jane Waco	18-11-2023	▲ 93.3%	\$1,953	\$5,385
#6	Helen Wasserman	04-09-2023	▲ 89.7%	\$1,947	\$8,166
#7	Brian Moss	27-11-2023	▲ 100.1%	\$1,938	\$5,683
#8	Alan Dominguez	01-12-2023		\$1,867	\$5,434
#9	Jim Epp	12-11-2023	▲ 98.7%	\$1,704	\$4,074
#10	Steven Roelle	17-06-2023	▲ 89.2%	\$1,676	\$3,506

# Complete KPI List with LOD Expressions & Logic

## SALES DASHBOARD KPIs

### 1. Total Sales (Current Year)

// Basic Calculation

Total Sales CY = SUM([Sales])

// Filtered to Selected Year (using Parameter)

Total Sales CY =

IF YEAR([Order Date]) = [Selected Year Parameter]

THEN SUM([Sales])

END

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**Result for 2023:** \$164,422K

### 2. Total Profit (Current Year)

Total Profit CY = SUM([Profit])

---

**Result for 2023:** \$27,899K

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### 3. Total Quantity (Current Year)

Total Quantity CY = SUM([Quantity])

---

**Result for 2023:** 12K units

#### 4. Previous Year (PY) Sales - LOD Expression

```
PY Sales =  
{FIXED :  
    SUM(  
        IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
        THEN [Sales]  
        END  
    )  
}
```

**Why LOD?** Ensures PY calculation ignores all filters except year parameter **Result for 2022:** ~\$136.3M (calculated from 20.6% growth)

---

#### 5. Previous Year Profit - LOD Expression

```
PY Profit =  
{FIXED :  
    SUM(  
        IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
        THEN [Profit]  
        END  
    )  
}
```

**Result for 2022:** ~\$21.4M (calculated from 30.4% growth)

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#### 6. Previous Year Quantity - LOD Expression

```
PY Quantity =  
{FIXED :  
    SUM(  
        IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
        THEN [Quantity]  
        END  
    )  
}
```

**Result for 2022:** ~9.46K units (calculated from 26.8% growth)

## 7. % Difference in Sales vs PY WITH ARROW LOGIC

// Calculate Percentage Change

Sales % Diff =

((SUM([Sales]) - [PY Sales]) / [PY Sales]) \* 100

// Result: +20.6%

// Arrow Logic (Using Unicode or Custom Shape)

Sales Trend Arrow =

IF [Sales % Diff] > 0 THEN "▲" // Up arrow for positive

ELSE IF [Sales % Diff] < 0 THEN "▼" // Down arrow for negative

ELSE "●" // Circle for no change

END

// Color Logic

Sales Trend Color =

IF [Sales % Diff] > 0 THEN "Green" // Positive growth

ELSE IF [Sales % Diff] < 0 THEN "Red" // Decline

ELSE "Gray"

END

// Alternative: Use built-in Tableau Shapes

// In Marks card: Change Mark type to "Shape"

// Use conditional formatting based on positive/negative value

### Visual Implementation:

- **Green ▲ 20.6%** = Growth (Sales increased)
  - **Red ▼ -5.2%** = Decline (Sales decreased)
  - Arrow is typically a custom shape or Unicode character
  - Color and shape both respond to the calculated field value
-

## 8. % Difference in Profit vs PY

Profit % Diff =

$((\text{SUM}([\text{Profit}]) - [\text{PY Profit}]) / [\text{PY Profit}]) * 100$

// Result: +30.4%

**Shows:** ▲ 30.4% (Green arrow for growth)

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## 9. % Difference in Quantity vs PY

Quantity % Diff =

$((\text{SUM}([\text{Quantity}]) - [\text{PY Quantity}]) / [\text{PY Quantity}]) * 100$

// Result: +26.8%

**Shows:** ▲ 26.8% (Green arrow for growth)

---

## 10. Highest Sales Month - LOD Expression ● (Blue Dot)

// Step 1: Find maximum sales value for selected year

Max Sales in Year =

{FIXED YEAR([Order Date]) : MAX([Sales])}

// Step 2: Identify which month has that max value

Highest Month =

{FIXED YEAR([Order Date]) :

MAX(

IF SUM([Sales]) = [Max Sales in Year]

THEN [Order Date]

END

)

}

// Step 3: Create boolean for marking the point

Is Highest Month =

[Order Date] = [Highest Month]

// Use this in dual axis chart with blue circle marker

**From your image tooltip:**

- **Sales of Apr, 2023: \$335** (showing the actual highest month sales)
- **Highest/Lowest Sales: \$335** (confirming this is the max point)

**Visual:** Blue circle ( ● ) on the line chart at the peak

---

## 11. Lowest Sales Month - LOD Expression ● (Orange Dot)

// Step 1: Find minimum sales value for selected year

Min Sales in Year =

```
{FIXED YEAR([Order Date]) : MIN([Sales])}
```

// Step 2: Identify which month has that min value

Lowest Month =

```
{FIXED YEAR([Order Date]) :  
    MIN(  
        IF SUM([Sales]) = [Min Sales in Year]  
        THEN [Order Date]  
        END  
    )  
}
```

// Step 3: Create boolean for marking the point

Is Lowest Month =

```
[Order Date] = [Lowest Month]
```

**From your image tooltip:**

- **Sales of Apr, 2022: \$467** (previous year comparison)
- **Sales Differences: 🔙 28.2%** (showing Apr 2023 vs Apr 2022 decline)
- This appears to be April 2023 marked as lowest point

**Visual:** Orange circle ( ● ) on the line chart at the lowest point

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## 12. Sales Difference (for Min/Max Points Tooltip)

```
// This appears in tooltip when hovering over blue/orange dots  
Sales Difference MoM =  
(  
    SUM([Sales]) -  
    LOOKUP(SUM([Sales]), -12) // Compare to same month previous year  
) / LOOKUP(SUM([Sales]), -12) * 100  
  
// For your example (April 2023 vs April 2022):  
// ($335 - $467) / $467 = -28.2% (Red down arrow)
```

### Tooltip Configuration:

Sales of <MONTH(Order Date)>, <YEAR(Order Date)>: <SUM(Sales)>  
Sales of <MONTH(Order Date)>, <YEAR(Order Date)-1>: <Sales PY>  
Sales Differences: <Sales Difference MoM> [with arrow symbol]  
Highest/Lowest Sales: <Current Month Sales>

---

## 13. Average Sales (Benchmark Line)

```
// Moving Average  
Avg Sales = WINDOW_AVG(SUM([Sales]))  
  
// Or Fixed Average for the year  
Avg Sales Fixed =  
{FIXED YEAR([Order Date]) : AVG([Sales])}  
  
// Result: ~$3.1K average shown as dotted line
```

---

## 14. Average Profit (Benchmark Line)

```
Avg Profit = WINDOW_AVG(SUM([Profit]))  
  
// Result: ~$586K average shown as dotted line
```

---

## **15. Above/Below Average - Sales & Profit Trend**

```
// Color Logic for Sales  
Sales vs Average =  
IF SUM([Sales]) >= [Avg Sales] THEN "Above"  
ELSE "Below"  
END  
  
// In the chart: Blue = Above, Orange = Below
```

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## **16. Sales by Sub-Category (Current vs Previous Year)**

```
// Current Year Sales by Sub-Category  
Sales CY by SubCat =  
SUM(  
    IF YEAR([Order Date]) = [Selected Year Parameter]  
    THEN [Sales]  
    END  
)  
  
// Previous Year Sales by Sub-Category (shown as gray bars)  
Sales PY by SubCat =  
SUM(  
    IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
    THEN [Sales]  
    END  
)
```

---

## **17. Profit by Sub-Category (with Gain/Loss Coloring)**

```
// Profit Calculation  
Profit by SubCat = SUM([Profit])  
  
// Color Logic  
Profit Status =  
IF SUM([Profit]) > 0 THEN "Profit (Blue)"  
ELSE "Loss (Orange/Red)"  
END  
  
// Examples:  
// Phones: ~$42K profit (Blue)  
// Tables: ~-$8K loss (Orange)
```

# CUSTOMER DASHBOARD KPIs

## 18. Total Customers (Current Year)

```
Total Customers CY =  
COUNTD(  
    IF YEAR([Order Date]) = [Selected Year Parameter]  
    THEN [Customer ID]  
    END  
)
```

**Result for 2023:** 693 customers

---

## 19. Total Customers Previous Year - LOD

```
PY Customers =  
{FIXED :  
    COUNTD(  
        IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
        THEN [Customer ID]  
        END  
)  
}
```

**Result for 2022:** ~638 customers

---

## 20. % Difference in Customers vs PY

```
Customers % Diff =  
((COUNTD([Customer ID]) - [PY Customers]) / [PY Customers]) * 100  
  
// Result: ▲ 8.6% (Green arrow)
```

---

## 21. Total Sales Per Customer

Sales Per Customer =

$\text{SUM}([\text{Sales}]) / \text{COUNTD}([\text{Customer ID}])$

// Result: \$1,058 per customer

// Note: This is AVERAGE sales per customer, not total

---

## 22. Previous Year Sales Per Customer - LOD

PY Sales Per Customer =

{FIXED :  $\text{SUM}(\text{IF YEAR}([\text{Order Date}]) = [\text{Selected Year Parameter}] - 1 \text{ THEN } [\text{Sales}] \text{ END})$ }

/

{FIXED :  $\text{COUNTD}(\text{IF YEAR}([\text{Order Date}]) = [\text{Selected Year Parameter}] - 1 \text{ THEN } [\text{Customer ID}] \text{ END})$ }

---

## 23. % Difference in Sales Per Customer

Sales Per Customer % Diff =

$([\text{Sales Per Customer}] - [\text{PY Sales Per Customer}]) / [\text{PY Sales Per Customer}] * 100$

// Result: ▲ 10.8% (Green arrow)

---

## 24. Total Orders (Current Year)

Total Orders CY =

$\text{COUNTD}($

$\text{IF YEAR}([\text{Order Date}]) = [\text{Selected Year Parameter}]$

$\text{THEN } [\text{Order ID}]$

$\text{END}$

)

**Result for 2023:** 1,687 orders

---

## 25. Previous Year Orders - LOD

```
PY Orders =  
{FIXED :  
    COUNTD(  
        IF YEAR([Order Date]) = [Selected Year Parameter] - 1  
        THEN [Order ID]  
        END  
    )  
}
```

**Result for 2022:** ~1,315 orders

---

## 26. % Difference in Orders vs PY

```
Orders % Diff =  
((COUNTD([Order ID]) - [PY Orders]) / [PY Orders]) * 100
```

// Result: ▲ 28.3% (Green arrow)

---

## 27. Customer Rank by Profit - LOD for Top 10

```
// Rank customers by total profit  
Customer Profit Rank =  
RANK_UNIQUE(SUM([Profit]), 'desc')  
  
// Filter: [Customer Profit Rank] <= 10  
  
// Or using LOD to get top 10 across all dimensions  
Top 10 Customers =  
{FIXED [Customer ID] : SUM([Profit])}  
  
// Then apply filter: RANK([Top 10 Customers]) <= 10
```

**Top Customer:** Raymond Buch with \$6,781 profit

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## 28. 2023 Profit % (for each customer in Top 10)

```
// Shows profit margin percentage  
Profit Margin % =  
(SUM([Profit]) / SUM([Sales])) * 100  
  
// Example: Raymond Buch = 97.1% profit margin
```

### Symbol Logic for Green Arrows (▲):

```
// In the Top 10 table, arrow indicates HIGH profit margin  
Profit Margin Indicator =  
IF [Profit Margin %] >= 89 THEN "▲ (Green)"  
ELSE "● (Gray)"  
END  
  
// All shown customers have 89%+ margins = ▲
```

---

## 29. Last Order Date - LOD Expression

```
// For each customer, get their most recent order  
Last Order Date =  
{FIXED [Customer ID] : MAX([Order Date])}  
  
// Example: Raymond Buch = 25-09-2023
```

**Use case:** Part of RFM (Recency, Frequency, Monetary) analysis for customer retention

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## 30. Number of Orders per Customer (for Distribution)

```
// LOD to count orders for each customer  
Orders per Customer =  
{FIXED [Customer ID] : COUNTD([Order ID])}  
  
// Then create bins: 0, 1, 2, 3, 4, 5, 6, 7, 8+ orders  
  
// Histogram shows:  
// ~200 customers: 1 order  
// ~200 customers: 2 orders  
// ~156 customers: 3 orders
```

# HOW THE ARROW LOGIC WORKS



## Step-by-Step Implementation:

// 1. Calculate the percentage difference

Sales % Difference =

((SUM([Sales]) - [PY Sales]) / [PY Sales]) \* 100

// 2. Create arrow symbol field

Arrow Symbol =

```
IF [Sales % Difference] > 0 THEN "▲"  
ELSE IF [Sales % Difference] < 0 THEN "▼"  
ELSE "—" END
```

// 3. Create color field

Arrow Color =

```
IF [Sales % Difference] > 0 THEN "#2DC937" // Green  
ELSE IF [Sales % Difference] < 0 THEN "#E15759" // Red  
ELSE "#B0B0B0" // Gray  
END
```

// 4. In Tableau Dashboard:

// Option A: Use Unicode symbols (▲ ▼) in text

// Option B: Use Custom Shapes (Assign shapes in Marks card)

// Option C: Use Icons from Dashboard extension

## Visual Setup in Tableau:

1. **Create a Calculated Field** for the % difference
2. **Add to Label**: Display the number (e.g., "20.6%")
3. **Add Shape Mark**:
  - o Go to Marks card → Change to "Shape"
  - o Create calculated field with IF logic (positive/negative)
  - o Assign custom shapes (up arrow for positive, down arrow for negative)
4. **Color by Value**: Apply green for positive, red for negative
5. **Format**: Adjust size, alignment, font weight

---

## SUMMARY OF ALL CALCULATED FIELDS

KPI Name	Type	LOD Used?	Arrow Logic?
Total Sales CY	SUM	No	No
Total Profit CY	SUM	No	No
Total Quantity CY	SUM	No	No
PY Sales	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
PY Profit	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
PY Quantity	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
% Diff Sales	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
% Diff Profit	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
% Diff Quantity	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
Highest Month	FIXED LOD	<input checked="" type="checkbox"/> Yes	No (Blue Dot)
Lowest Month	FIXED LOD	<input checked="" type="checkbox"/> Yes	No (Orange Dot)
Sales Difference MoM	Table Calc (LOOKUP)	No	<input checked="" type="checkbox"/> ▲▼ in tooltip
Avg Sales	WINDOW_AVG	No	No
Avg Profit	WINDOW_AVG	No	No
Above/Below Avg	IF condition	No	No
Total Customers CY	COUNTD	No	No
PY Customers	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
% Diff Customers	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
Sales Per Customer	Calculated	No	No
PY Sales Per Customer	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
% Diff Sales/Customer	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
Total Orders CY	COUNTD	No	No
PY Orders	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
% Diff Orders	Calculated	Yes (uses PY LOD)	<input checked="" type="checkbox"/> ▲▼
Customer Rank	RANK_UNIQUE	No	No
Profit Margin %	Calculated	No	<input checked="" type="checkbox"/> ▲ (>89%)
Last Order Date	FIXED LOD	<input checked="" type="checkbox"/> Yes	No
Orders per Customer	FIXED LOD	<input checked="" type="checkbox"/> Yes	No

## KEY INTERVIEW TALKING POINTS:

1. **LOD Expressions:** "I used FIXED LOD calculations to ensure Previous Year metrics were calculated independent of dashboard filters, preventing incorrect comparisons when users filtered by region or product"
2. **Arrow Logic:** "I implemented conditional formatting with Unicode symbols and color-coding to instantly communicate trend direction—green up arrows for growth, red down arrows for decline—making it intuitive for executives to identify areas needing attention"
3. **Min/Max Detection:** "Using nested LOD expressions, I dynamically identified the highest and lowest performing months, marking them with colored dots and enriched tooltips showing year-over-year comparison for that specific month"
4. **Dynamic Parameters:** "The Select Year parameter drives all calculations, automatically recalculating Previous Year metrics and percentage differences, enabling multi-year trend analysis without rebuilding the dashboard"

This comprehensive approach shows mastery of **advanced Tableau calculations, LOD expressions, conditional logic, and UX-driven design!**