The workshop guide provides detailed instructions organized into seven main modules. This workshop guide will both technical Excel skills and practical applications specific to vendor management and contract analysis.

**Module 1: Excel Foundations for Procurement**

* Setting up the data environment
* Formatting tables, dates, and currency values
* Implementing data validation rules
* Creating conditional formatting for performance ratings

**1.1 Setting Up Your Data Environment**

**Step 1: Import and Format the Dataset**

1. Open Excel and create a new workbook
2. Go to the Data tab → From Text/CSV
3. Navigate to the "Vendor Contract Data.xlsx" file and click Import
4. In the preview window, verify data types are correctly identified
5. Click Load

**Step 2: Format the Data as a Table**

1. Select all data (Ctrl+A)
2. Press Ctrl+T or click Insert → Table
3. Check "My table has headers" and click OK
4. Select a professional table style from the Table Design tab (recommended: "Table Style Medium 9")

**Step 3: Format Date and Currency Columns**

1. Select the Contract Value column
2. Press Ctrl+1 to open Format Cells dialog
3. Select Currency with 0 decimal places
4. Select the Contract Start Date and Contract End Date columns
5. Press Ctrl+1 and select Date format: mm/dd/yyyy or create custom (type mm/dd/yyyy) in the box → OK

A screenshot of a computer

AI-generated content may be incorrect.

**Step 4: Set Up Data Validation for Rating Columns**

1. Select the Performance Rating column cells K2:K145
2. Go to Data → Data Validation

A screenshot of a computer

AI-generated content may be incorrect.

1. Set validation criteria:
   * Allow: Whole number
   * Data: between 1 and 5
2. On the Error Alert tab, set a custom message: "Performance Rating must be between 1 and 5"
3. Repeat for Quality Rating column

**Practice Activity:** Apply conditional formatting to the Performance Rating column where:

* 4-5 ratings appear with green background
* 3 ratings appear with yellow background
* 1-2 ratings appear with red background

With your cells still selected, go to the **Home** tab on the ribbon.

* Click on the **Conditional Formatting** button (within the **Styles** group).

**Step 3: Add Formatting Rules (Green for Ratings 4-5)**

* In the dropdown, choose:
  + **Conditional Formatting → Highlight Cells Rules → Between…**
* In the pop-up box:
  + Enter the values: **4** and **5**
  + Select the format from the dropdown as **"Green Fill with Dark Green Text"**
* Click **OK**.

**Step 4: Add Formatting Rules (Yellow for Rating 3)**

* Again, go to:
  + **Conditional Formatting → Highlight Cells Rules → Equal To…**
* Enter the value: **3**
* Choose the format: **"Yellow Fill with Dark Yellow Text"**
* Click **OK**.

**Step 5: Add Formatting Rules (Red for Ratings 1-2)**

* Again, go to:
  + **Conditional Formatting → Highlight Cells Rules → Between…**
* In the pop-up box:
  + Enter the values: **1** and **2**
  + Select format: **"Red Fill with Dark Red Text"**
* Click **OK**.

**Step 6: Verify Formatting**

* Check your selected cells to confirm they display the correct background colors based on the ratings:
  + **Green** for 4–5 ratings
  + **Yellow** for 3 ratings
  + **Red** for 1–2 ratings

**Additional Notes:**

* If you wish to edit or delete any rules:
  + Go to **Conditional Formatting → Manage Rules**.
* Adjust rules or priority order as needed within the "Conditional Formatting Rules Manager."

A screenshot of a computer

AI-generated content may be incorrect.

Step 1: Sort Data by Color (Optional)

Step 2: Filter by Rating or Color

Step 3: Create a Pivot Table for Summarized Analysis

Step 4: Data Visualization  
Step 5: Document Insights and Take Action

To Sort Data by Color

You might want to quickly group all similar performance ratings together by color:

* Select the entire dataset, including headers.
* Go to the Data tab.
* Click on the Sort button.
* In the Sort dialog box:
* Choose Performance Rating for "Column".
* In "Sort On," select Cell Color.
* Under "Order," select the colors one at a time (e.g., Green first, then Yellow, then Red).
* Click OK.

This organizes the data visually by performance category, allowing easy identification of high and low performers.

**Module 2: Essential Functions for Procurement Analysis**

* Calculating contract durations using DATEDIF
* Determining contract status (active/completed/pending)
* Creating a performance index formula
* Using VLOOKUP to categorize performance levels
* Building vendor summary reports with AVERAGEIF functions

**2.1 Contract Analysis Functions**

**Step 1: Calculate Contract Duration**

1. Create a new column called "Contract Duration (Days)"
2. Enter formula: =[@[Contract End Date]]-[@[Contract Start Date]]
3. Format as Number with 0 decimal places

**Step 2: Calculate Contract Duration (Months)**

1. Create another column called "Contract Duration (Months)"
2. Enter formula: =DATEDIF([@[Contract Start Date]],[@[Contract End Date]],"m")
3. Format as Number with 0 decimal places

Note: It calculates the number of complete months, ignoring partial months, which is why 364 days shows as only 11 months instead of 12.

**Step 3: Identify Contract Status**

1. Create a column called "Contract Status"
2. Enter formula: =IF(TODAY()>[@[Contract End Date]],"Completed",IF(TODAY()<[@[Contract Start Date]],"Pending","Active"))

**Step 4: Calculate Days Remaining**

1. Create a column called "Days Remaining"
2. Enter formula: =IF([@[Contract Status]]="Completed",0,IF([@[Contract Status]]="Pending",DATEDIF(TODAY(),[@[Contract End Date]],"d"),DATEDIF(TODAY(),[@[Contract End Date]],"d")))
3. Format with conditional formatting to highlight contracts with fewer than 30 days remaining

* Select all cells in the column that displays **"Days Remaining"** or the calculated duration.

**1. Apply Conditional Formatting:**

* Go to the **Home** tab.
* Click **Conditional Formatting** → **Highlight Cells Rules** → **Greater Than**.

**2. Set Formatting Criteria:**

* In the dialog box, enter: 30.
* Select your desired formatting style, for example: **Red Fill with Dark Red Text** or another clear indicator.
* Click **OK**.

**Practice Activity:** Create a formula that calculates the average daily contract value by dividing the contract value by the contract duration in days.

1. Create a column called "Avg Daily Contract Value”
2. Enter formula: =[@[Contract Value ($)]] / [@[Contract Duration (Days)]]

Additional tasks include:

1. Cost Efficiency Insight: It helps you understand how much the organization is spending **per day** on a contract, offering a more granular view of spending overtime.

* Apply Conditional Formatting to highlight contracts with unusually high daily values.
* Go to Home → Conditional Formatting → Top 10% or Greater Than….
* Outcome: Spot contracts that are expensive on a per-day basis—even if the total amount looks reasonable.

1. Comparison Across Contracts: Two contracts may have similar total values but different durations. Average daily value reveals which is more intensive in cost per time unit.
2. Risk Assessment: High average daily values may indicate high-priority or high-risk contracts that need closer tracking.

* Create a column called “High-Risk”.
* Enter the formula = =IF(AND([@[Avg Daily Contract Value ]]>300, [@[Days Remaining]]>0,[@[Days Remaining]]<60), "High Risk", "")

Which contracts need tracking based on being labeled “High Risk”?

* Vendor Negotiation: This metric can be used in procurement reviews to negotiate better rates or assess vendor value for future contracts. Use daily cost data to justify renegotiation or vendor reviews.

**2.2 Vendor Performance Analysis**

**Step 1: Create Performance Index Column**

1. Add a column called "Performance Index"
2. Enter formula: = =([@[Performance Rating (1-5)]]\*0.4)+([@[On-Time Delivery (%)]]/20)+([@[Quality Rating (1-5)]]\*0.4)
3. Format as Number with 1 decimal place
4. Apply conditional formatting with data bars
5. Go to the **Home** tab on the Excel ribbon.
6. In the **Styles** group, click on **Conditional Formatting**.
7. Hover over **Data Bars** in the dropdown menu.
8. Choose a style:
   1. **Gradient Fill** or **Solid Fill**
   2. Select a color (blue, green, red, etc.)
9. May have to resize the table to include new column in table

* Go To Table Design **→** Resize Table

Why Use Data Bars?

* Provides a quick visual comparison of values within a column.
* Highlights magnitude differences at a glance.
* Great for metrics like contract value, performance index, or number of items.

**Step 2: Create a VLOOKUP Reference Table**

1. On a new sheet named "Lookup\_Tables" (includes an underscore)
2. Create a Performance Category table:
   * Column A (Index Rating): 1, 2, 3, 4, 5
   * Column B (Category): “Needs Improvement”, "Fair", "Good", “Very Good”, "Excellent"

**Step 3: Categorize Performance**

1. Return to your data sheet
2. Add a column called "Performance Category"
3. Enter formula:

=VLOOKUP([@[Performance Rating (1-5)]],Lookup\_Tables!$A$2:$B$6,2,TRUE)

Why Create Categories?

Simplifies Complex Data: Raw performance ratings (e.g., 1–5) are numerical but not always intuitive. Example: Instead of interpreting a vendor score of 3, you see “Satisfactory” — clearer and faster for decision-making.

Enables Group Comparisons: Compare vendors by category rather than by individual score. It supports grouped reporting (e.g., how many vendors are performing at an “Excellent” level vs. “Low”). *Excel Use Case:* Create a **PivotTable** showing the count of vendors by **Performance Category**.

**Step 4: Apply Business Rule Tags**

1. Add a column called “Action Required”

Enter formula: =IF(OR([@[Performance Category]]="Excellent",[@[Performance Category]]="Very Good"),"Preferred Vendor",

IF([@[Performance Category]]="Good","Monitor Quarterly",

IF([@[Performance Category]]="Fair","Monitor Monthly",

"Review Required")))

Action Required Column Amplifies This Power

Your “Action Required” column serves as a call to action:

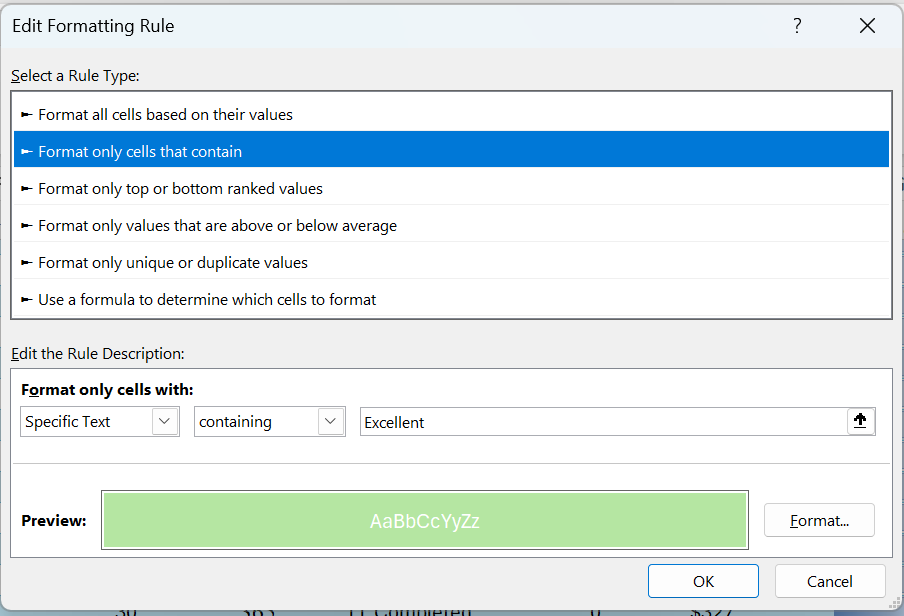
* Combine it with filters or visuals to quickly see:
  + Vendors to review
  + Vendors to reward
  + Vendors to monitor more closely

**Step 5: Apply Conditional Formatting to the “Performance Category” Column**

1. Select all cells in the **“Performance Category”** column.
2. Go to **Home → Conditional Formatting → New Rule**.
3. Choose **Format only cells that contain**.
4. Click the Format button to choose Background Fill and Text Font colors.

Use these settings for each category:

| **Category** | **Fill Color** | **Text Color** |
| --- | --- | --- |
| Excellent | Green | White |
| Very Good | Light Green | Black |
| Good | Yellow | Black |
| Needs Improvement | Red | White |



**STEP 6. Filters and Segments for Deeper Insights**

* Segment vendors by category to analyze:
  + Contract value vs. performance category
  + Delivery times vs. performance category
  + Vendor category vs. compliance risk

This enhances your risk assessment and strategic sourcing decisions.

1. **Compare Contract Value vs. Performance Category**

How it helps:

* Identify vendors with high contract values but low performance.
* Highlight opportunities to renegotiate, review, or switch vendors.

Use a PivotTable:

* 1. Rows: Performance Category
  2. Values: Sum of Contract Amount

Add slicers to filter by department or year.

1. **Analyze Delivery Time vs. Performance Category**

How it helps:

* See whether vendors with higher performance are consistently delivering faster.
* Pinpoint inefficiencies with vendors rated “Fair” or “Needs Improvement”.

Create a box-and-whisker chart:

* 1. X-axis: Performance Category
  2. Y-axis: Average Delivery Time

Use color coding by category.

1. **Explore Vendor Category vs. Compliance Risk**

How it helps:

* Check if specific vendor categories (e.g., IT, Consulting, Hardware) are more prone to compliance issues.
* Prioritize compliance audits or enhanced monitoring.

Add a “Vendor Type” column (if not already present).

Use conditional formatting to flag high-risk combinations (e.g., “Needs Improvement” + Compliance Score < 5).

Filter or Pivot by:

* 1. Rows: Vendor Category
  2. Columns: Performance Category
  3. Values: Average Compliance Score or Count of "Review Required"

**Why This Is Powerful:**

* You move from raw data to action plans.
* Leadership and stakeholders can prioritize vendors for review, reward, or renegotiation.
* You ensure resources (like audits or reviews) are focused where the data shows risk or inefficiency.

**Step 7: Create Vendor Summary with AVERAGEIF**

1. Create a new sheet called "Vendor Summary"
2. Create columns: Vendor ID, Contracts Count, Avg Contract Value, Avg Performance Rating, Avg On-Time %, Avg Quality Rating
3. List unique vendor IDs (use Remove Duplicates on a copy of the Vendor ID column) =UNIQUE('vendor contracts'!A2:A146)
4. For Contracts Count: =COUNTIF(Table1[Vendor ID], 'Vendor Summary'!A2)
5. For Avg Contract Value:

=AVERAGEIFS(Table1[Contract Value ($)], Table1[Vendor ID], 'Vendor Summary'!A2)

1. For Avg Performance Rating:

=AVERAGEIF(Table1[Vendor ID], A2, Table1[Performance Rating (1-5)])

1. Continue with other metrics

* Avg% on time: =AVERAGEIF(Table1[Vendor ID], A2, Table1[On-Time Delivery (%)])
* Avg% quality time =AVERAGEIF(Table1[Vendor ID], A2, Table1[Quality Rating (1-5)])

**Practice Activity:** Use MAXIFS functions to identify the highest value contract for each vendor.

* Create a column called “Maximum Contract Value”
* Enter formula: =MAXIFS(Table1[Contract Value ($)], Table1[Vendor ID], A2)

Use INDEX/MATCH :

* Create a column called “Contract Value for Max Value”
* Enter formula: =INDEX(Table1[Contract Number], MATCH(1, (Table1[Vendor ID]=A2)\*(Table1[Contract Value ($)]=MAXIFS(Table1[Contract Value ($)], Table1[Vendor ID], A2)), 0))

**Module 3: Data Analysis with PivotTables**

* Create basic pivot tables
* Adding calculated fields and items

**3.1 Basic Pivot Table Analysis**

Create a pivot table that shows the average performance metrics (Performance Rating, On-Time Delivery %, Quality Rating) by payment terms. Use this to determine if vendors with shorter payment terms perform better.

# Question

1 Do vendors with shorter payment terms perform better across key metrics?

2 What is the average on-time delivery rate by vendor category?

3 Which vendors deliver the highest performance within specific categories?

4 What is the on-time value by vendor and by payment term?

5 Are larger contracts (by value) associated with higher or lower quality?

Compare average performance metrics across different payment terms. This allows procurement teams to see if vendors with Net 15, Net 30, etc., perform better on average.

* Compare averages across payment terms.
* Look for trends: Do shorter payment terms (e.g., Net 15) correlate with better performance?
* You might find that vendors with faster payment expectations:
  + Deliver on time more consistently
  + Maintain higher quality
  + Have higher performance scores

**Bonus: Add Conditional Formatting**

* Select the data values in the PivotTable (excluding row labels).
* Go to Home → Conditional Formatting:
  + Data Bars or Color Scales help quickly visualize best vs. worst performers.

**Step 4: Format and Polish Your Pivot**

1. Apply a PivotTable Style (Design tab)

2. Format values as currency where appropriate

3. Expand/collapse levels to show/hide detail

4. Right-click on Grand Totals row → Remove Grand Totals

5. Add subtotals for key metrics

**Final Tips for Dashboard**

* Use slicers to compare performance before and after Net 30.
* Use color scales or icons for performance metrics.
* Add a title and summary box with total vendors, average spend, and highest-rated vendor.

**Module 4: Advanced Analysis with Data Analysis ToolPak**

* Running descriptive statistics on performance metrics
* Performing correlation analysis between contract value and performance
* Interpreting statistical results

**4.1 Descriptive Statistics and Correlation**

**Step 1: Enable the Analysis ToolPak**

1. Go to File → Options → Add-ins
2. Select Analysis ToolPak → Go
3. Check "Analysis ToolPak" → OK

**Step 2: Generate Descriptive Statistics**

1. Go to Data tab → Data Analysis
2. Select "Descriptive Statistics"
3. Input Range: Select all numeric columns (Contract Value, Performance Rating, etc.)
4. Check "Labels in first row"
5. Check "Summary statistics"
6. Output Range: Select a cell in a new worksheet
7. Click OK

**Step 3: Run Correlation Analysis**

1. Go to Data tab → Data Analysis
2. Select "Correlation"
3. Input Range: Select Contract Value, Performance Rating, On-Time Delivery %, and Quality Rating columns
4. Check "Labels in first row"
5. Output Range: Select a cell below your descriptive statistics
6. Click OK

**Step 4: Interpret Results**

A group of graphs with different colored text

AI-generated content may be incorrect.

1. Highlight strong correlations (>0.7 or <-0.7)
2. Create a summary of key statistical insights
3. Format the output tables for better readability

**Practice Activity:** Use the regression tool to determine if Contract Value can predict Performance Rating. Create a brief explanation of the results.



**Module 5: Creating Interactive Dashboards**

* Build a vendor performance dashboard

**5.1 Building a Vendor Performance Dashboard**

**Step 1: Set Up Dashboard Framework**

1. Create a new worksheet named "Dashboard"
2. Add a title and subtitles
3. Insert a company logo (if available)
4. Create sections for:
   * Performance Summary
   * Vendor Analysis
   * Contract Timeline
   * Top/Bottom Performers

**Step 2: Create a Vendor Selector**

1. Use Data Validation to create a dropdown list of vendors
2. Formula: Source = unique list of vendor IDs

**Step 3: Create Summary Cards**

1. Create formulas that reference the selected vendor:
   * Total contract value
   * Average performance rating
   * Number of contracts
   * Average on-time delivery %

**Step 4: Add Key Charts**

1. Create a line chart showing performance trends
2. Create a bar chart comparing selected vendor to average
3. Create a doughnut chart showing contract value distribution
4. Add a contract timeline visualization

**Step 5: Add Interactivity**

1. Link all visuals to respond to the vendor selector
2. Add slicers for filtering by:
   * Contract date range
   * Performance category
   * Contract value range

**Step 6: Final Formatting**

1. Apply consistent colors and fonts
2. Resize and align all elements
3. Add instructions for users
4. Add timestamp and data refresh information

**Practice Activity:** Add a "Risk Assessment" section to the dashboard that automatically identifies vendors with declining performance trends.

**Module 6: Exporting and Sharing Analysis**

* Preparing professional reports
* Exporting to PDF
* Setting up distribution processes

**6.1 Creating Professional Reports**

**Step 1: Prepare for Export**

1. Review all worksheets for consistency
2. Check all formulas and calculations
3. Set up print areas and page breaks

**Step 2: Create PDF Reports**

1. Go to File → Export → Create PDF/XPS
2. Select sheets to include
3. Set document properties
4. Review and Save

**Step 3: Email Distribution Setup**

1. Set up a report distribution process
2. Create automated email from Excel (if applicable)
3. Ensure confidential information is properly handled

**Practice Activity:** Create a one-page executive summary that highlights the top 3 insights from your vendor analysis.

A screenshot of a computer

AI-generated content may be incorrect.

**Module 7: Tableau for Procurement Analytics**

**7.1 Getting Started with Tableau**

**Step 1: Connecting to Vendor Contract Data**

1. From Tableau's start page, click "Connect to Data"
2. Select the file type (Excel or CSV)
3. Navigate to your vendor contract dataset and open it
4. Review fields to ensure correct data types:
5. Change date fields to Date format
6. Verify numeric fields are recognized as numbers
7. Confirm text fields are dimensions (blue pills)
8. Click "Sheet 1" tab at the bottom to begin analysis

The two primary categories are dimensions and measures:

**Dimensions**

* **Definition**: Categorical, qualitative data that segment and categorize your information
* **Behavior**: Dimensions create headers in your visualization
* **Examples**: Customer names, product categories, dates, regions, order IDs
* **Visualization role**: Define the structure and grouping of your data
* **Icon in Tableau**: Blue fields

**Measures**

* **Definition**: Numerical, quantitative data that can be measured, aggregated, and analyzed
* **Behavior**: Measures create the actual values being visualized
* **Examples**: Sales amount, profit, quantity, temperature readings, counts
* **Visualization role**: Provide the metrics being analyzed
* **Icon in Tableau**: Green fields

**Step 2: Creating Your First Contract Visualization**

1. Drag "Contract Value ($)" to Rows shelf
2. Drag "Vendor ID" to Columns shelf
3. Sort by Contract Value (click the sort button in toolbar)
4. Add color: Drag "Performance Category" to Color mark
5. Add labels: Click "Label" mark and check "Show mark labels"
6. Title the visualization: "Vendor Contract Values by Performance Category"
7. Save your workbook

**Step 3: Publishing and Sharing Options**

1. Save your workbook
2. Publish to Tableau Server/Online (if available):
   1. Server > "Publish Workbook"
   2. Set permissions and scheduling
3. Export to PDF for stakeholders:
   1. File > "Export as PDF"
4. Set up subscriptions:
   1. Schedule automated email reports
   2. Configure for key stakeholders