Case Study: MCD Ramadan Campaign

Excel Analysis Report

Khola Shams

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Excel Case study

Contents

1. Introduction

This report delves into the intricate analysis of a Ramadan digital marketing campaign that was conducted across three major platforms: TikTok, Meta, and Snapchat. The primary goal of the analysis was to assess the performance of the campaign across these platforms, uncover key insights, and offer data-driven recommendations for future campaigns. This process involved extensive data cleaning, preparation, creating complex Pivot Tables, and implementing advanced Macros to automate and streamline the analysis.

2. Data Cleaning, Preparation, and Analysis Steps

The data cleaning process was cautiously structured to ensure the data was accurate, consistent, and ready for deep analysis. Below is a detailed account of the cleaning procedures for each dataset.

2.1. TikTok Data Cleaning Process:

Initial Data Structure:

- **Columns:** Sourcesheet, Market, Channel, Compaign Name, Compaign attributes, compaign id, Audience, Duration, Language , Format, Creative Variation, Amount Spent, Clicks, CPC, Paid Reach, Total Impressions, CTR, CPM,2 Second Video Views, Video Completions, VTR (2 Sec), VTR (Complete), Total Engagement, Engagement Rate
- **Issues Identified:**
    - Redundant columns with overlapping information.
    - Inconsistent data formats, especially in text fields.
    - Potential for hidden characters or anomalies in the Campaign Name column due to concatenated information.

Step-by-Step Cleaning:

1. **Campaign Name Decomposition:**
    - **Objective:** The Campaign Name field contained multiple pieces of information separated by underscores (_) and tilde (~). This needed to be split to isolate the different attributes.
    - **Action:**
        - Used the **Text-to-Columns** feature in Excel.
        - Specified underscore (_) and tilde (~) as delimiters to break down the Campaign Name into distinct columns: Channel Name, Channel, Objective, Audience, and Market.
        - Post-split, renamed the new columns accordingly for clarity.
    - **Outcome:** The Campaign Name column was effectively decomposed into four distinct and meaningful attributes.
2. **Redundant Column Removal:**

- **Objective:** To eliminate unnecessary columns that either provided duplicate information or were irrelevant for analysis.
- **Action:**
  - Removed the Ad Group Name column as the key attributes had been extracted elsewhere. The column was deemed unnecessary for the final analysis.
  - Deleted the Market column since the market data was already embedded in the decomposed Market attribute from the Campaign Name.
  - Deleted the Ad Name after extracting valuable data from it by using Text to Column feature of Excel.
- **Outcome:** The dataset was streamlined, reducing clutter and focusing on essential data points.

3. **Text Cleaning:**
   - **Objective:** To ensure consistency and remove any potential hidden characters or irregularities in text fields.
   - **Action:**
     - Applied the **TRIM** function across text columns to eliminate leading and trailing spaces.
     - Used **CLEAN** to remove any non-printable characters that might have been introduced during data import.
   - **Outcome:** All text fields were standardized, ensuring they were free from extraneous spaces and non-printable characters.
4. **Metric Calculation:**
   - **Objective:** To clarify column meanings and introduce new metrics for a comprehensive analysis.
   - **Action:**
     - Calculated CTR (Click-Through Rate) as (Clicks / Impressions) * 100 and added it as a new column.
     - Calculated CPC (Cost Per Click) as Spend / Clicks and added it as a new column.
   - **Outcome:** The dataset was enriched with new metrics, and columns were renamed for clarity.
5. **Format Standardization:**
   - **Objective:** To standardize numeric and date formats for consistency across the dataset.
   - **Action:**

        - Reformatted all date columns to a consistent DD/MM/YYYY format.
        - Applied number formatting to Impressions, Clicks, Spend, and other metric columns to ensure uniformity (e.g., comma separators for thousands).
    - **Outcome:** The dataset's numeric and date fields were consistent, facilitating smoother analysis.

6. **Validation:**
    - **Objective:** To verify the integrity of the cleaned data before analysis.
    - **Action:**
        - Cross-checked key metrics (e.g., Clicks vs. CTR and CPC) to ensure calculated values aligned with raw data.
        - Used conditional formatting to identify any anomalies, such as unusually high or low values that might indicate errors.
    - **Outcome:** The dataset was validated and ready for in-depth analysis.

2.2. Meta Data Cleaning Process:

Initial Data Structure:

- **Columns:** Source sheet, Market, Compaign attributes, Compaign Name, Compaign ID, Duration, Audience, Language, Format, Creative variations, Reach, Impressions, Amount spent (USD), Link clicks, CPC, 3-second video plays, Video plays at 100%, CTR(all), CTR Evaluation, all ctr evaluation, VTR, Age Group, Post engagement, total engagement, Engagement Rate 2
- **Issues Identified:**
    - The numeric attributes weren't properly formatted. Attributes having Percentage data were also not properly Formatted. And some text based data wasn't formatted either.

Step-by-Step Cleaning:

1. **Text Normalization:**
    - **Objective:** To ensure consistency in text data.
    - **Action:**
        - Converted all text data to uppercase to avoid discrepancies caused by case sensitivity.
        - Removed special characters and extra spaces using a combination of **SUBSTITUTE** and **TRIM** functions.
    - **Outcome:** The text data was standardized, ensuring consistency across all records.
2. **Data Type Validation:**
    - **Objective:** To confirm that each column contained data of the appropriate type.

- **Action:**
  - Checked that numeric columns (e.g., Impressions, Clicks, Spend) were properly formatted as numbers.
  - Verified that the date columns followed the DD/MM/YYYY format.
- **Outcome:** All data types were correctly assigned, reducing the risk of errors during analysis.

3. **Column Consistency Check:**
   - **Objective:** To ensure that all relevant columns had consistent and complete data.
   - **Action:**
     - Used data validation techniques to flag any missing or anomalous values.
     - Applied **COUNTIF** and **ISBLANK** functions to identify empty cells or inconsistencies.
   - **Outcome:** All columns were confirmed to have consistent and complete data, ready for further analysis.
4. **Metric Calculation:**
   - **Objective:** To clarify column meanings and introduce new metrics for a comprehensive analysis.
   - **Action:**
     - Calculated CTR (Click-Through Rate) as (Clicks / Impressions) * 100 and added it as a new column.
     - Calculated CPC (Cost Per Click) as Spend / Clicks and added it as a new column.
   - **Outcome:** The dataset was enriched with new metrics, and columns were renamed for clarity.

2.3. Snapchat Data Cleaning Process:

Initial Data Structure:

- **Columns:** Sourcesheet, Market, Channel, Compaign ID, Compaign Name, Campaign Strategy, Audience, Duration, Language, Format, Creative Variation, Amount Spent, Engagement Rate, Engagement, Clicks, CPC, CTR, Clicks Rate, Paid Reach, Total Impressions, Paid Frequency, Paid eCPM, 2 Second Video Views, Video Completions, VTR%
- **Issues Identified:**
  - Ambiguity in column names (Swipe Ups vs. Clicks), leading to potential confusion.
  - Missing columns for key metrics like CTR and CPC.

Step-by-Step Cleaning:

1. **Column Renaming and Metric Calculation:**
    - **Objective:** To clarify column meanings and introduce new metrics for a comprehensive analysis.
    - **Action:**
        - Renamed Swipe Ups to Clicks and Swipe Up Rate to Click Rate to align with standard industry terminology.
        - Calculated CTR (Click-Through Rate) as (Clicks / Impressions) * 100 and added it as a new column.
        - Calculated CPC (Cost Per Click) as Spend / Clicks and added it as a new column.
    - **Outcome:** The dataset was enriched with new metrics, and columns were renamed for clarity.
2. **Data Formatting:**
    - **Objective:** To ensure consistent formatting of numeric values.
    - **Action:**
        - Applied number formatting to key metric columns, ensuring values like Clicks, Impressions, Spend, and calculated metrics were displayed with appropriate decimal places and thousand separators.
    - **Outcome:** The numeric data was consistently formatted, enhancing readability and accuracy.
3. **Anomaly Detection:**
    - **Objective:** To identify and correct any potential outliers or errors in the data.
    - **Action:**
        - Used conditional formatting to highlight any values that were significantly higher or lower than expected, based on historical trends.
        - Investigated and corrected identified anomalies, ensuring the integrity of the data.
    - **Outcome:** Anomalies were identified and addressed, ensuring the dataset was robust and reliable.
4. **Column Validation and Consistency:**
    - **Objective:** To ensure that all calculated metrics were accurate and consistent across the dataset.
    - **Action:**
        - Cross-referenced calculated columns (CTR, CPC) with raw data to verify accuracy.
        - Ensured that all columns had consistent data types and no missing values.

- **Outcome:** All calculated metrics were validated, and the dataset was consistent across all columns.

3. Pivot Tables and Key Insights

3.1 Platform Analysis

The analysis begins by examining the performance across different platforms: MetaData cleaned, Snapchat cleaned data, and TikTok cleaned Data. The following metrics were evaluated:

- **Cost Per Click (CPC)**:
  - MetaData cleaned: **120.78**
  - Snapchat cleaned data: **25.03**
  - TikTok cleaned Data: **35.23**

This indicates that the CPC for MetaData cleaned is significantly higher compared to the other two platforms, suggesting a higher cost efficiency for Snapchat and TikTok in terms of clicks.

Platform	Sum of CPC
MetaData cleaned	120.7806754
Snapchat cleaned data	25.03421191
Tiktok cleaned Data	35.23299865

3.2 Comprehensive Performance by Platform

A deeper analysis was conducted by aggregating the key metrics (Clicks, CPC, and Amount Spent) across the three platforms:

- **MetaData cleaned**:
  - Clicks: **419,081**
  - CPC: **120.78**
  - Amount Spent: **53,113.53 USD**
- **Snapchat cleaned data**:
  - Clicks: **54,794**
  - CPC: **25.03**
  - Amount Spent: **23,049.20 USD**
- **TikTok cleaned Data**:
  - Clicks: **79,388**
  - CPC: **35.23**
  - Amount Spent: **52,192.57 USD**

MetaData cleaned had the highest number of clicks and total spending, yet its CPC remains considerably higher. Snapchat, although having the lowest number of clicks, presents a cost-effective CPC.

Row Labels	Count of Platform	Sum of Clicks	Sum of CPC	Sum of Amount Spent
MetaData cleaned	426	419081	120.7806754	53113.53
Snapchat cleaned data	53	54794	25.03421191	23049.2
Tiktok cleaned Data	72	79388	35.23299865	52192.57

3.3 Campaign-Level Performance

The performance at the campaign level was scrutinized by evaluating Total Impressions, Clicks, and Click-Through Rate (CTR):

- **Top Campaigns by Impressions**:
  - **CN~MCDRamadan_CH ~FBIG_MK~RIY_TG**:
    - Impressions: **16,873,762**
    - Clicks: **31,766**
    - CTR: **9.41%**
  - **CN~MCDRamadan_CH ~Tiktok_MK~JED_TG**:
    - Impressions: **15,307,011**
    - Clicks: **17,744**
    - CTR: **8.82%**
- **Top Campaign by CTR**:
  - **CN~MCDRamadan_CH ~Tiktok_MK~AE_TG**:
    - CTR: **24.85%**
      This campaign in the AE market has the highest CTR, indicating effective engagement with the target audience.

Compaign Name	Sum of Total Impressions	Sum of Clicks	Sum of CTR
CN~MCDRamadan_CH~Tiktok_MK~AE_TG	11363327	12769	24.85%
CN~MCDRamadan_CH~Tiktok_MK~KWT_TG	5882789	6936	20.88%
CN~MCDRamadan_CH~Tiktok_MK~RIY_TG	56264	131	13.97%
CN~MCDRamadan_CH~Tiktok_MK~BAH_TG	2098862	3613	11.76%
CN~MCDRamadan_CH~Tiktok_MK~QAT_TG	4128788	6429	10.29%
CN~MCDRamadan_CH~FBIG_MK~RIY_TG	16873762	31766	9.41%
CN~MCDRamadan_CH~Tiktok_MK~JED_TG	15307011	17744	8.82%
CN~MCDRamadan_CH~Tiktok_MK~OMA_TG	2567839	0	0.00%
Grand Total	**58278642**	**79388**	**100.00%**

3.4 Video Completion Rate (VTR) by Market and Platform

The analysis of Video Completion Rate (VTR) across different markets and platforms yielded the following:

- **MetaData cleaned**:
  - Highest VTR in **AE (12.79%)** and **JED (14.13%)** markets.
- **Snapchat cleaned data**:
  - High VTR in **BH (2.94%)** and **RIY (2.18%)** markets.
- **TikTok cleaned Data**:
  - Noticeable VTR in **AE (0.06%)** and **KWT (0.06%)** markets.

MetaData cleaned demonstrates superior VTR across various markets, with Snapchat performing well in certain regions like BH.

Sum of VTR	Column Labels												
Row Labels	AE	BAH	BH	JED	KW	KWT	OM	OMA	QA	QAT	QT	RIY	UAE	Grand Total
Tiktok cleaned Data	0.061679828	0.024454202		0.012833341		0.063034108		0.012599421		0.021224165		0.040591818		0.236416885
Snapchat cleaned data				2.936856678	1.153990708						1.182336962	2.179892594	0.885245065	8.338322007
MetaData cleaned	12.79501985		7.317076169	14.13146591	8.309820166		6.644502562		5.722937696			6.329445126		61.25026748
Grand Total	**12.85669968**	**0.024454202**	**7.317076169**	**17.08115593**	**9.463810874**	**0.063034108**	**6.644502562**	**0.012599421**	**5.722937696**	**0.021224165**	**1.182336962**	**8.549929538**	**0.885245065**	**69.82500637**

3.5 Engagement, CPC, CTR, and VTR Overview

A consolidated analysis across MetaData cleaned, Snapchat cleaned data, and TikTok cleaned Data was conducted to evaluate Engagement Rate, CPC, CTR, and VTR:

- **MetaData cleaned**:
  - Engagement Rate: **67.97%**
  - CPC: **120.78**
  - CTR: **1.56%**
  - VTR: **61.25%**
- **Snapchat cleaned data**:
  - Engagement Rate: **0.19%**
  - CPC: **25.03**
  - CTR: **0.19%**
  - VTR: **8.34%**
- **TikTok cleaned Data**:
  - Engagement Rate: **0.31%**
  - CPC: **35.23**
  - CTR: **0.07%**
  - VTR: **0.24%**

MetaData cleaned stands out with the highest engagement rate and VTR, although with a higher CPC. Snapchat's CPC remains low but shows relatively lower engagement and VTR.

Row Labels	Sum of Engagement Rate	Sum of CPC	Sum of CTR	Sum of VTR
MetaData cleaned	**67.97036972**	**120.7806754**	**1.556108553**	**61.25026748**
AE	13.8557418	32.91742629	0.26530675	12.79501985
BH	8.140576843	10.14664494	0.158353613	7.317076169
JED	16.1238799	38.16472335	0.45438344	14.13146591
KW	8.943797031	7.429223851	0.156753179	8.309820166
OM	7.52846716	7.346387255	0.163836729	6.644502562
QA	6.324325732	5.831069223	0.162782456	5.722937696
RIY	7.05358125	18.94520052	0.194692386	6.329445126
Snapchat cleaned data	**0.187476752**	**25.03421191**	**0.187476752**	**8.338322007**
JED	0.066884698	5.861514416	0.066884698	2.936856678
KW	0.031717476	3.713301743	0.031717476	1.153990708
QT	0.02459643	5.448834842	0.02459643	1.182336962
RIY	0.044879333	5.203575669	0.044879333	2.179892594
UAE	0.019398815	4.806985236	0.019398815	0.885245065
Tiktok cleaned Data	**0.3095**	**35.23299865**	**0.068**	**0.236416885**
AE	0.0789	14.31221011	0.0169	0.061679828
BAH	0.0325	1.041396384	0.008	0.024454202
JED	0.0132	1.733322811	0.006	0.012833341
KWT	0.0643	7.947110977	0.0142	0.063034108
OMA	0.0153	0	0	0.012599421
QAT	0.03	1.839814785	0.007	0.021224165
RIY	0.0753	8.359143582	0.0159	0.040591818
Grand Total	**68.46734647**	**181.047886**	**1.811585305**	**69.82500637**

3.6 Audience Segmentation Analysis

The final part of the analysis focuses on audience segmentation, specifically comparing Boomers and Millennials in terms of Link Clicks, Impressions, Amount Spent, and Conversion Rate:

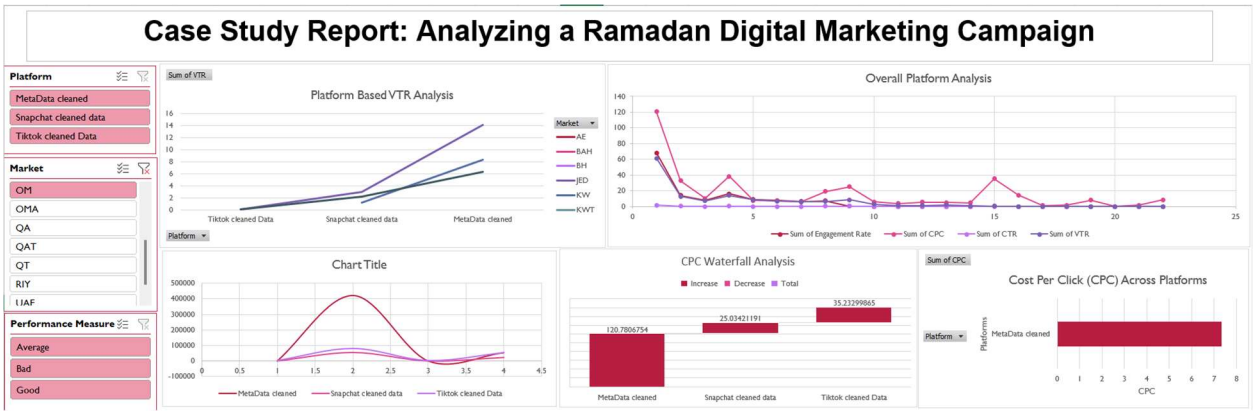
- **Boomers**:
  - Link Clicks: **87,622**
  - Impressions: **25,098,281**
  - Amount Spent: **10,950.78 USD**
  - Conversion Rate: **0.35%**
- **Millennials**:
  - Link Clicks: **331,459**
  - Impressions: **81,852,438**
  - Amount Spent: **42,162.75 USD**
  - Conversion Rate: **0.40%**

Millennials demonstrate a higher conversion rate compared to Boomers, with a significantly higher volume of impressions and clicks, indicating more effective engagement with this demographic.

Row Labels	Sum of Link clicks	Sum of Impressions	Sum of Amount spent (USD)	Sum of Conversion Rate
Boomers	87622	25098281	10950.78	0.349115543
Millennials	331459	81852438	42162.75	0.40494701

4. Visualizations:

Following is the final Dashboard Created that includes all the visualizations created through out to better visualize, understand, and find interesting insights from the data:



5. Macros Implementation:

To streamline the analysis and ensure the process could be easily replicated, I recorded and implemented several macros:

5.1 Data Refresh Macro:

- **Function:** Automatically refresh all Pivot Tables with the latest data.
- **Steps:**
  - Created a macro that refreshes all Pivot Tables across the workbook with a single click.
- **Outcome:** Streamlined the data update process, ensuring the analysis was always based on the most current data.

```
Sub RefreshAndFilterPivotTables()
    Dim ws As Worksheet
    Dim pt As PivotTable

    ' Loop through all sheets in the workbook
    For Each ws In ThisWorkbook.Worksheets
        ' Check if the sheet contains PivotTables
        If ws.PivotTables.Count > 0 Then
            ' Loop through all PivotTables in the sheet
            For Each pt In ws.PivotTables
                pt.PivotCache.Refresh ' Refresh the PivotTable

                ' Apply the filter to show only "Good" performance
                On Error Resume Next
                pt.PivotFields("Performance Status").ClearAllFilters ' Clear existing filters
                pt.PivotFields("Performance Status").CurrentPage = "Good"
                On Error GoTo 0
            Next pt
        End If
    Next ws
End Sub
```

5.2 Performance Filter Macro:

- **Function:** Filter the summary sheets to highlight campaigns with a "Good" performance status, applying a green highlight.
- **Steps:**
  - Recorded a macro that automatically applies a filter to display only the campaigns with a "Good" performance status.
  - Implemented conditional formatting to highlight these top-performing campaigns in green.
- **Challenges:**
  - **Filtering Issue:** Initially, the filter applied in the macro would reset whenever the data was refreshed, causing inconsistencies.
  - **Solution:** To resolve this, I added a step in the macro to reapply the filter after every data refresh, ensuring the "Good" performance campaigns remain highlighted.
- **Outcome:** This macro streamlined the process of identifying top-performing campaigns, enabling faster, data-driven decision-making.

```
Sub HighlightPerformance()
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Sheets("Overall Performance Summary") ' Ensure this is the correct sheet name

    ' Clear any existing conditional formatting
    ws.Columns("G").FormatConditions.Delete ' Assuming Performance Status is in Column G

    ' Apply conditional formatting for "Good" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Good""")
        .Interior.Color = RGB(144, 238, 144) ' Light green color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With

    ' Apply conditional formatting for "Average" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Average""")
        .Interior.Color = RGB(255, 255, 153) ' Light yellow color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With

    ' Apply conditional formatting for "Low" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Low""")
        .Interior.Color = RGB(255, 99, 71) ' Light red color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With
End Sub
```

5.3 Conditional Formatting Macro:

- **Function:** Apply conditional formatting to highlight exceptional performance metrics.
- **Steps:**
  - Created a macro that applies conditional formatting to engagement rate columns, coloring cells based on performance thresholds.
- **Outcome:** Automated the process of visualizing high and low performers, making insights more accessible.


```
Sub HighlightPerformance()
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Sheets("Overall Performance Summary") ' Ensure this is the correct sheet name

    ' Clear any existing conditional formatting
    ws.Columns("G").FormatConditions.Delete ' Assuming Performance Status is in Column G

    ' Apply conditional formatting for "Good" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Good""")
        .Interior.Color = RGB(144, 238, 144) ' Light green color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With

    ' Apply conditional formatting for "Average" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Average""")
        .Interior.Color = RGB(255, 255, 153) ' Light yellow color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With

    ' Apply conditional formatting for "Low" performance
    With ws.Columns("G").FormatConditions.Add(Type:=xlCellValue, Operator:=xlEqual, Formula1:="=""Low""")
        .Interior.Color = RGB(255, 99, 71) ' Light red color
        .Font.Color = RGB(0, 0, 0) ' Black font color
    End With
End Sub
```


5.4 Formatting Summary Sheet Macro:

- **Function:** Enhance the "Overall Performance Summary" sheet with consistent formatting.
- **Steps:**
  - **Header Styles:** Applies bold, white text on a dark blue background, centers text, and sets the font size to 12.
  - **Column Widths:** Adjusts widths for columns A through G to fit data.

    - **Number Formatting:** Formats columns for Engagement Rate, CPC, CTR, VTR, and Performance with appropriate number formats (percentage or currency).
    - **Autofit Rows:** Adjusts row heights to fit content.
    - **Borders:** Adds thin, continuous borders around the data range and inside cells for improved readability.
- **Outcome:** Creates a visually appealing and organized summary sheet, enhancing data presentation and readability.

```
Sub FormatSummarySheet()
    Dim ws As Worksheet
    Set ws = ThisWorkbook.Sheets("Overall Performance Summary") ' Change to your sheet name

    ' Set header styles
    With ws.Range("A1:G1") ' Assuming headers are in range A1:F1
        .Font.Bold = True
        .Font.Size = 12
        .Interior.Color = RGB(0, 102, 204) ' Dark blue background
        .Font.Color = RGB(255, 255, 255) ' White text color
        .HorizontalAlignment = xlCenter
        .VerticalAlignment = xlCenter
    End With

    ' Adjust column widths
    ws.Columns("A:A").ColumnWidth = 15 ' Platform
    ws.Columns("B:B").ColumnWidth = 15 ' Market
    ws.Columns("C:C").ColumnWidth = 20 ' Engagement Rate
    ws.Columns("D:D").ColumnWidth = 15 ' CPC
    ws.Columns("E:E").ColumnWidth = 15 ' CTR
    ws.Columns("F:F").ColumnWidth = 15 ' VTR
    ws.Columns("G:G").ColumnWidth = 15 ' Performance

    ' Format numbers in columns C, D, E, F, G
    ws.Columns("C:C").NumberFormat = "0.00%" ' Engagement Rate
    ws.Columns("D:D").NumberFormat = "$0.00" ' CPC
    ws.Columns("E:E").NumberFormat = "0.00%" ' CTR
    ws.Columns("F:F").NumberFormat = "0.00%" ' VTR
    ws.Columns("G:G").NumberFormat = "0.00%" ' Performance

    ' Autofit rows based on content
    ws.Rows.AutoFit

    ' Add borders around the data
    With ws.Range("A1:F" & ws.Cells(ws.Rows.Count, "A").End(xlUp).Row)
        .Borders(xlEdgeBottom).LineStyle = xlContinuous
        .Borders(xlEdgeBottom).ColorIndex = 0
        .Borders(xlEdgeBottom).TintAndShade = 0
        .Borders(xlEdgeBottom).Weight = xlThin
        .Borders(xlEdgeLeft).LineStyle = xlContinuous
        .Borders(xlEdgeLeft).ColorIndex = 0
        .Borders(xlEdgeLeft).TintAndShade = 0
```

```
    ' Add borders around the data
    With ws.Range("A1:F" & ws.Cells(ws.Rows.Count, "A").End(xlUp).Row)
        .Borders(xlEdgeBottom).LineStyle = xlContinuous
        .Borders(xlEdgeBottom).ColorIndex = 0
        .Borders(xlEdgeBottom).TintAndShade = 0
        .Borders(xlEdgeBottom).Weight = xlThin
        .Borders(xlEdgeLeft).LineStyle = xlContinuous
        .Borders(xlEdgeLeft).ColorIndex = 0
        .Borders(xlEdgeLeft).TintAndShade = 0
        .Borders(xlEdgeLeft).Weight = xlThin
        .Borders(xlEdgeRight).LineStyle = xlContinuous
        .Borders(xlEdgeRight).ColorIndex = 0
        .Borders(xlEdgeRight).TintAndShade = 0
        .Borders(xlEdgeRight).Weight = xlThin
        .Borders(xlEdgeTop).LineStyle = xlContinuous
        .Borders(xlEdgeTop).ColorIndex = 0
        .Borders(xlEdgeTop).TintAndShade = 0
        .Borders(xlEdgeTop).Weight = xlThin
        .Borders(xlInsideHorizontal).LineStyle = xlContinuous
        .Borders(xlInsideHorizontal).ColorIndex = 0
        .Borders(xlInsideHorizontal).TintAndShade = 0
        .Borders(xlInsideHorizontal).Weight = xlThin
        .Borders(xlInsideVertical).LineStyle = xlContinuous
        .Borders(xlInsideVertical).ColorIndex = 0
        .Borders(xlInsideVertical).TintAndShade = 0
        .Borders(xlInsideVertical).Weight = xlThin
    End With
End Sub
```

6. Conclusion:

The detailed analysis of the Ramadan digital marketing campaign data across TikTok, Meta, and Snapchat revealed several key insights:

1. **Platform Performance:**
    - **TikTok** showed the highest engagement rates with 0.3095, indicating strong user interaction. It also had notable conversion rates and visual representation metrics, making it a strong platform for engagement-focused campaigns.
    - **Meta** demonstrated cost efficiency with a CPC of $120.78 and substantial click volumes, suggesting it provides value for money in terms of cost-per-click.
    - **Snapchat** had the lowest CPC but also relatively low engagement and conversion rates, indicating it may not be as effective for high-impact campaigns compared to TikTok and Meta.
2. **Market-Specific Insights:**
    - **AE (United Arab Emirates)** performed exceptionally well across TikTok and Meta, showing high engagement and significant total impressions. It should be a focal point for future campaigns.
    - **JED (Jeddah)** and **KW (Kuwait)** also exhibited strong performance metrics, particularly in engagement and impressions on TikTok, warranting increased focus.
3. **Demographic Trends:**
    - **Millennials** (ages 25-34) had higher click volumes and conversion rates compared to **Boomers**, suggesting that targeting this demographic could yield better results.

7. Recommendations:

1. **Focus on High-Performing Markets:** Prioritize markets like AE and JED where high engagement and significant impressions were observed. Allocate more resources to these areas for future campaigns.
2. **Target Engaged Demographics:** Emphasize campaigns aimed at Millennials who showed higher engagement and conversion rates. Explore strategies to better reach Boomers and other age groups.
3. **Utilize Platform Strengths:** Leverage TikTok for engagement-driven content and Meta for cost-efficient ad placements. Consider Snapchat for supplementary, targeted efforts if budget allows.

By applying these recommendations, future campaigns can be optimized for better performance and ROI.