

Analysis Report on the Effectiveness of Ads for Online Courses

Dataset Overview

The dataset contains 124,716 entries with 40 columns, providing insights into various advertisements related to online courses. Key columns include Clicks, Conversions, Total conv. value, Impressions, and Cost, which are crucial for evaluating ad performance.

Summary Statistics

Here are some descriptive statistics for critical numeric columns:

- **Clicks:**
 - Count: 124716
 - Mean: 0.21
 - Min: 0
 - Max: 1560
- **Conversions:**
 - Count: 124716
 - Mean: 0.0089
 - Min: 0
 - Max: 73.07
- **Total Conversion Value:**
 - Count: 124716
 - Mean: 0.222
 - Min: 0
 - Max: 1826.77
- **Impressions:**
 - Count: 124716
 - Mean: 2.74
 - Min: 0
 - Max: 45185
- **Cost:**
 - Count: 124716
 - Mean: 127224.4

- Min: 0
- Max: 1,043,785,000

Correlation Analysis

A correlation analysis was performed between the numeric columns:

- **Clicks and Conversions:** Strong positive correlation (0.83)
- **Conversions and Total Conversion Value:** Perfect correlation (1.00)
- **Cost and Conversions:** Strong positive correlation (0.90)

Best and Worst Performing Ads

Best Performing Ads

- **Best Ad by Clicks:**
 - Ad ID: 429688949974
 - Clicks: 1560
 - Conversions: 73.07
 - Total Conversion Value: 1826.77
- Cost: 836412289
- **Best Ad by Conversions:**
 - Same as above.

Worst Performing Ads

- **Worst Ad by Clicks:**
 - Ad ID: 18236830137
 - Clicks: 0
 - Conversions: 0
 - Total Conversion Value: 0
- Cost: 0
- **Worst Ad by Conversions:**
 - Same as above.

Cost Analysis

- Average Cost per Click for Best Ad: ($\frac{836412289}{1560}$ \approx 536,000)
- Average Cost per Conversion for Best Ad: ($\frac{836412289}{73.07}$ \approx 11,430,000)

Additional Insights

- **Average Position of Ads:** The average position could not be calculated due to many entries containing '--'. After cleaning the data, the average position was still NaN, indicating potential data quality issues.
- **High Impressions and Low Clicks/Conversions:** Several ads had high impressions but low engagement, indicating ineffective targeting or ad copy:
- Examples include:
 - Ad ID: 619126448103 with 4971 impressions, 8 clicks, and 0 conversions.
 - Ad ID: 623689154631 with 1716 impressions, 4 clicks, and 0 conversions.

Suggested Management Actions

1. **Increase Budget:** For campaigns with high CTR and conversions, consider increasing the budget to maximize reach.
2. **Analyze Low Performers:** Investigate campaigns with high impressions but low clicks or conversions, and adjust targeting or ad creatives.
3. **Optimize Ad Copy:** Test different headlines and descriptions for ads with low performance to improve engagement.
4. **Review Approval Status:** Ensure ads that are disapproved or under review are addressed promptly to avoid lost opportunities.

Conclusion

This analysis provides a detailed overview of ad performance, highlighting both strengths and weaknesses. It offers actionable insights to enhance the effectiveness of advertisements for online courses, guiding strategic marketing decisions. Further investigation into data quality and ad optimization is recommended to improve overall performance.