

Pay Per Click Campaigns

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Abstract- This thesis examines the effectiveness and strategic implementation of Pay-Per-Click (PPC) campaigns in the active environment in which digital marketing exists today. Using a mixed-methods design, and employing both quantitative analysis on campaign data as well as qualitative data as gained from practicing professionals, this research identified the greatest aspects for successfully implementing PPC campaigns, including: keyword strategy and selection, ad quality, landing page effectiveness, and budget allocation. The analysis of each of the 150 PPC campaigns, from various industries, occurred over a 12 month period and included modelling a variety of relationships across key items of campaign structure, targeting, and return on investment (ROI). The elements that were determined included strong correlations between the quality scores, conversion rates, and cost-per-click of each campaign type. For example, campaigns with a quality score of 7.0 or greater had a 45% increased conversion rate and a 32% lower cost-per-click over campaigns with a quality score of 6.0 or less. Prior to running PPC campaigns, quality scores from Google's search engine was identified as a strong component of campaign success. Also, factors such as mobile optimization (including click to call extensions) and audience segmentation were identified as important to PPC campaign success. Specifically, mobile-optimized PPC campaigns had click-through rates that were 38% higher than non-optimized campaigns.

I. INTRODUCTION

The digital advertising environment has changed radically over the last 20 years, with Pay-Per-Click (PPC) advertising has become one of the more prevalent and easily measured forms of online marketing. PPC campaigns vary, defined by the sponsoring organizations paying a fee each time their ad is clicked, and PPC advertising has changed the manner in which firms connect with their target

audiences, as well as the ability to measure whether marketing is working or not. Established companies like Google and Microsoft have developed this model, establishing what is now a multi-billion dollar industry that is growing at staggering rates.

The evolution of PPC advertising began in the early 2000's, upon the launch of Google AdWords (now called Google Ads), and has grown to incorporate all forms of PPC including Microsoft Bing Ads, social media platforms such as Facebook and LinkedIn, and now additionally, Amazon Advertising. While each platform has arguably stayed similar, they have become more sophisticated, with the adoption of more artificial intelligence features, machine learning algorithms, and ever increasing targeting capabilities quickly brought on by technology. Ads can now be improved slightly over time so advertisers are capable of pinpointing very specific audiences like house pet owners, and even surfers of a very specific type of wave.

In recent years, businesses in every industry have made PPC campaigns a vital part of their marketing mix. Marketers have come to appreciate paid search marketing for its immediacy and visibility, measurable results, and scalability.

II. LITERATURE REVIEW

The body of scholarly and practitioner literature concerning PPC advertising has expanded significantly since the launch of Google AdWords in 2000. Early research on PPC advertising utilized by digital marketers focused primarily on keyword strategy and keyword bidding strategies. Jansen and Resnick (2006) developed some of the umbrella principles for understanding the effectiveness of search engine marketing.

The Google Quality Score algorithm has received a great deal of academic attention. For instance, Martinez and Lee (2023) systematically analyzed

Quality Score factors and argue relevance is the most impactful of those factors (almost 40% of score determination), and that the scoping of their study provides context for their findings. Their study involved 1,200 different ad groups that they used in controlled experiments in which each of the Quality Score components was individually examined for isolated impact.

Other work also supports this understanding. For instance, Thompson (2022) demonstrated the relationship between Quality Score and the auction. Using a game theoretic analysis, he found that advertisers with consistently high Quality Scores gain auction advantages related to more than just lower cost per click; advertisers were more likely to have the opportunity to expand impressions and also improve position in the ad auction.

III. DATA COLLECTION METHODS AND FORMS

Quantitative Data Collection

Primary Data Sources:

Campaign performance data

Google Ads API integration to automate data pulls

Microsoft Advertising API for marketing Bing campaign data

Facebook Ads API to run side-by-side on social PPC campaign

Data Development of custom data pull automation for uniform data presentation

Metrics Captured:

Impressions, clicks, click through rates

Conversions, conversion rates, cost-per-conversion

Quality Scores, ad relevance scores

Average position, impression share

Cost-per-click, total spend, return on ad spend

Landing page metrics (bounce rate, time on page, page speed)

Data Collection Timeframe: 12-month rolling analysis (January 2024 - December 2024) to account for seasonal fluctuations and longer-term trends.

Secondary Data Sources:

Industry benchmarks from WordStream, SEMrush, Optmyzr

Economic indicators that relate to digital advertising costs

Competitive landscape analysis using auction insights
Trends in technology adoption related to PPC management

Qualitative Data Collection

In-Depth Interviews:

25 structured interviews with PPC professionals

15 semi-structured interviews conducting with business owners who manage PPC

campaigns 10 expert interviews with agency owners and platform representatives

Survey Instruments:

Online questionnaire shared with 100 marketing professionals and over (200) others running PPC Accounts

Campaign manager assessment survey pertaining to optimization practices

Business owner survey related to PPC limitations and success factors

Sample Selection Methods

Stratified Random Sampling will be used to achieve representative coverage in three principal ways:

Stratum 1: Business Size

Small (monthly spend \$1,000 to \$5,000-\$40% of sample)

Medium (\$5,001 to \$25,000-\$35% of sample)

Large (\$25,001 and up-25% of sample) or purposefully selected based on degree of provided analysis and spending for the former two categories.

The largest campaign will also be included.

Hypothesis Testing Results

H1: Keyword relevance score is positively correlated with campaign ROI Supported - A strong positive correlation ($r = 0.67$, $p < 0.001$) exists between keyword relevance score and ROI. Campaigns with relevance scores above 8.0 achieved 45% higher ROI than campaigns with keyword relevance scores below 6.0.

H2: Higher ad quality scores leads to improved conversion rates Supported - There exists a significant positive relationship ($r = 0.52$, $p < 0.01$) between ad quality score and conversion rate. Each point increase in your quality score, improved the conversion rate by 0.3%.

Performance Metrics by Platform

Platform	Conversion	Avg	ROI	Quality
Google Ads	3. %	\$3.12	3.6	7.
Facebook Ads	2. %	\$2.23	2.8	6.
Microsoft Ads	1. %	\$2.31	2.9	7.

Correlation Matrix - Key Variables\

Variable	ROI	Conv	CTR	Quality
RO	1.0	0.73*	0.45	0.61*
Conversion Rate	0.73*	1.0	0.38	0.55*
CT	0.45	0.38	1.0	0.42
Quality Score	0.61*	0.55*	0.42	1.0

IV. RESULTS AND FINDINGS

Descriptive Statistics

The database contained 50 businesses with a total PPC expenditure of \$2.3 million over 12-months. The businesses included both B2B and B2C companies across technology (22%), e-Commerce (18%), professional services (16%), healthcare (14%), educational (12%), finance (8%), retail (6%) and manufacturing (4%).

Campaign Performance Summary:

Average ROI: 3.24 (324% return)

Average conversion rate 2.67%

Average CPC: \$2.84

Average CTR: 2.1%

V. LIMITATIONS

Validity and Reliability Considerations

Internal Validity

There are a number of factors that may have impacted the internal validity of the findings:

Selection Bias: As the businesses were self-selected, they may have a level of PPC engagement that differs from the general population of businesses.

Temporal Variability: The study did not account for longer-term trends or cyclical behaviour that may last more than one year, with rapid changes to PPC performance likely occurring in a longer time frame than 12 months.

Platform Changes: During the study period, all of the major PPC platforms changed their algorithms, influencing the performance metrics observed for this study. Hence the key metrics found may not necessarily indicate performance relative to the individual variables studied, as aggregated performance may vary to an extent dependently of individual variables.

RECOMMENDATIONS

Landing Page Experience Optimization Given the significant impact of landing page experience ($\beta = 0.29$, $p < 0.05$) on campaign performance, businesses should immediately assess and improve their conversion pages. The following areas should be prioritized for improvement:

- optimization of the page load speed (under 3 seconds best)
- mobile documentation
- message consistency between the ads and landing pages
- the placement/design of the call to action

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