Kaunas Faculty

ABSTRACT BOOK

20th Prof Vladas Gronskas International Scientific Conference

8th of May 2026
Kaunas, Lithuania

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2026

Annotation

The “20th Prof. Vladas Gronskas International Scientific Conference” conference is an arena for cooperation and scholarly fellowship with young researchers and bachelor, master, and doctoral students from Lithuania and foreign countries. It is an arena for open discussion where young researchers can present and share their scientific insights. This conference encourages internationalization and closer cooperation between science and business. The conference keynote speakers – business representatives – provide participants with new insights and inspiration for further research. The main goal of this scientific gathering is to contribute to a reliable, safe, effective, and sustainable economy and business development. Encouraging entrepreneurship is a crucial condition for economic growth, and this puts forward a new approach to business, creativity, value creation, and innovation. It is precisely in this context that business and science should interact.

Key words: international conference, entrepreneurship, economy and business development

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MARKETING CAMPAIGN PERFORMANCE SUMMARY

Marketing performance analysis is essential for improving campaign effectiveness. The research aims to analyze and predict marketing campaign performance using machine learning in Google BigQuery. The results are based on a Marketing Campaign Performance dataset containing 10,000 records, sourced from Kaggle. Logistic Regression model enabled to classify successful campaigns based on impressions, clicks, cost and ROI, and has achieved an exceptional accuracy rate of 98%. The K-means clustering model is employed to segment channels into four distinct groups based on their ROI and cost-efficiency. The model identified Cluster 4 as the most significant group, containing biggest number of campaigns and highest return on investment (ROI). The findings reveal that influencers are primary driver of success, while the Search channel demonstrates the highest stability across timeframes. The results validate that combination of clustering and classification algorithms builds a robust framework for identifying high-impact marketing channels and valuating their performance.

Key words: *BigQuery ML, logistic regression, K-means clustering, marketing campaign performance*

Marketing campaign performance

The work was performed by Auksė Šukytė and Vaiva Gumuliauskaitė, VU Knf, Lithuania, Marketing technology III course, Supervisor Prof. dr Dalia Krikščiūnienė

Introduction

Marketing performance analysis is essential for improving campaign effectiveness.
The aim - analyze marketing campaign performance and predict future success using ML algorithms.

Tasks:

- Train a logistic regression model for success campaign prediction.
- Use K-means clustering to segment channels by ROI.
- Identify the top-performing channels and specific campaigns.

Data Description

This dataset contains detailed performance metrics for marketing campaigns executed across multiple channels in 2025. It provides insights into campaign reach, performance, and revenue metrics.

Topic: marketing campaign performance.
Structure: 10,000 campaigns with 12 campaign caracteristics.
Methods: data analysis and machine learning in BigQuery.

Logistic regresion analysis

- Model shows high performance with 98% accuracy.
- Forecasts identify Influencer as top-performing channel.
- Identified the top 10 most successful campaigns based on impressions, clicks, cost and ROI.

accuracy
0.979957485575...

CampaignID	total_predicted_s...
CAMP04192	1

Centroid Id	Count	avg_cost	avg_revenue	avg_roi	total_campaigns
1	1	2,497.1303	4,927.0049	0.9887	1,383.0000
2	4	2,609.7482	5,174.3986	0.9884	561.2500
3	1	2,451.2251	4,866.8817	1.0022	587.0000
4	4	2,552.8720	5,140.0660	1.0101	1,446.2500

	Channel	total_predicted_successes
1	Influencer	84
2	Email	78
3	Display	74
4	Search	74

K-means clustering analysis

- C1: High volume, slightly below C4 financially
- C2: Stable, average volume, balanced costs & revenue
- C3: Low volume, lowest costs & revenue
- C4: Top performer, highest volume & ROI

Row	CENTROID_ID	channel_name	isweekday	avg_revenue	avg_roi	avg_cost
1	2	Search	weekend	5114.3369...	1.015...	2552.5...
2	4	Search	weekday	5155.3707...	1.012...	2556.4...

Model accuracy

Integrated ML analysis confirms 'Search' channel as the top ROI driver (1.015), while our 98% accurate predictive model into a proactive growth strategy.

Conclusions

- 98% accurate success prediction
- Influencer marketing performs best
- K-means identified 4 segments
- CAMP04192 predicted top campaign
- Search marketing: volume on weekdays, ROI on weekends

References

1. Kaggle. Marketing Campaign Performance Dataset.
2. Google Cloud. BigQuery ML Documentation.

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