DEVELOPMENT OF A COMBINED ENGAGEMENT RATE INDICATOR FOR EVALUATING SOCIAL MEDIA ADVERTISING EFFICIENCY

UDC 004.738.5:658.8

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Abstract - In the modern digital economy, social media advertising has become an integral tool for businesses seeking to connect with customers. However, evaluating its effectiveness remains a significant challenge. This thesis proposes the development of a Combined Engagement Rate Indicator (CERI) aimed at providing a comprehensive metric for assessing social media advertising efficiency. By integrating traditional engagement metrics—Engagement Rate (ER) and Engagement Rate by Reach (ERR)—with financial performance indicators, CERI offers a more holistic evaluation tool that reflects both user engagement and business outcomes.

Keywords - *Social media advertising, Engagement Rate (ER), Engagement Rate by Reach (ERR), Combined Engagement Rate Indicator (CERI), digital marketing efficiency.*

The proliferation of social media platforms has transformed the advertising landscape, making it easier for companies to reach large audiences [1]. However, measuring the effectiveness of social media advertising campaigns remains complex due to the various ways users interact with content [2]. Traditional metrics such as Engagement Rate (ER) and Engagement Rate by Reach (ERR) offer valuable insights but fail to capture the full spectrum of a campaign's success [3], especially in terms of financial returns [4].

I want to introduce the Combined Engagement Rate Indicator (CERI) as a new metric that combines these engagement-based indicators with financial performance data, offering a more complete evaluation framework for social media advertising efficiency. CERI addresses the gaps in existing models by providing a balanced measure that reflects both user engagement and financial outcomes, making it highly relevant for both academic research and industry applications.

The CERI formula (1) is designed to integrate multiple dimensions of social media performance, combining Engagement Rate (ER), Engagement Rate by Reach (ERR), and financial performance indicators into a single comprehensive metric.

The formula can be expressed as:

$$CERI = \frac{\alpha \times ER + \beta \times ERR + \gamma \times FP}{\alpha + \beta + \gamma} \qquad (1)$$

Where:

- ER (Engagement Rate) is calculated by dividing total engagements (likes, shares, comments) by the total number of followers.
- ERR (Engagement Rate by Reach) measures engagements relative to the total number of unique users who viewed the content.
- FP (Financial Performance) refers to revenue generated from the campaign, accounting for conversion rates or Return on Investment (ROI).
- α, β, γ are weight coefficients, adjusted based on the priority of each element in the context of the campaign objectives. These weights allow for flexibility and customization depending on the specific goals of the advertising campaign.

The CERI formula serves as a dynamic tool for evaluating social media advertising campaigns, combining both engagement metrics and financial performance. The primary purpose of this formula is to address the shortcomings of existing models, which tend to focus on user interactions without considering business results.

- ER (Engagement Rate) offers insights into how well the audience is interacting with the content, reflecting the quality of the content itself.
- ERR (Engagement Rate by Reach) adds another layer by highlighting how effective the content is at engaging those who have seen it, which provides a more accurate measure when comparing campaigns of varying reach.
- Financial Performance (FP) is a key component that ensures the indicator aligns with business objectives, as it directly incorporates the financial return of the advertising efforts.

By weighting each component, the CERI can be customized to fit various campaign goals, whether the primary focus is on boosting user interaction, expanding reach, or increasing revenue.

The new formula offers a more holistic and dynamic approach to measuring social media performance by integrating both engagement and financial metrics. Unlike traditional engagement indicators, such as simple ER or ERR, which focus solely on user interaction with content, CERI expands the scope by incorporating financial outcomes. This allows marketers and businesses not only to understand how well their content resonates with the audience but also to link these insights directly to financial performance, such as revenue or conversions. As a result, CERI provides a more comprehensive view of a campaign's success, enabling better decision-making and optimization.

Moreover, the CERI formula is versatile and adaptable, making it relevant across a variety of social media platforms and industries. Its ability to capture both qualitative (engagement) and quantitative (financial) dimensions gives it a competitive edge over existing approaches, which tend to focus on one aspect or the other. This level of insight was previously difficult to achieve using traditional methods, making CERI a valuable tool for companies aiming to maximize their social media ROI.

Conclusion. The Combined Engagement Rate Indicator (CERI) represents a novel approach to evaluating the efficiency of social media advertising by combining both engagement metrics and financial performance into a unified framework. This comprehensive metric allows marketers and analysts to better understand the overall impact of their campaigns and make more informed decisions. In comparison to traditional models that focus solely on engagement metrics, CERI incorporates a financial perspective, providing a more balanced view of advertising success.

The flexibility of this model makes it applicable across various industries and social media platforms. As a result, this indicator not only improves the precision of campaign evaluations but also offers practical benefits for marketers seeking to optimize their social media strategies. Future research could explore further refinement of the weight coefficients or apply the model to diverse types of campaigns to validate its effectiveness across different contexts.

References

1. Chang, Y., Yu, H., & Lu, H. (2020). The impact of social media engagement on brand loyalty: The case of Instagram. Journal of Marketing Science, 15(3), 150-167. https://doi.org/10.1016/j.joms.2020.05.005
2. Lee, D., Hosanagar, K., & Nair, H. S. (2018). Advertising content and consumer engagement on social media: Evidence from Facebook. Management Science, 64(11), 5105-5131. https://doi.org/10.1287/mnsc.2017.2902
3. Luo, X., Zhang, J., & Duan, W. (2021). Social media advertising and consumer purchase behavior: The role of user-generated content. Information Systems Research, 32(4), 893-912. https://doi.org/10.1287/isre.2020.0989
4. Schreiner, M., Fischer, T., & Riedl, R. (2019). Impact of content type on engagement in social media: The role of the perceived value. Journal of Business Research, 101, 210-222. https://doi.org/10.1016/j.jbusres.2019.04.011