UDC 339.9: 658.8
DOI: https://doi.org/10.32782/2708-0366/2026.28.41

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IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE IN INTERNATIONAL INFLUENCER MARCETING PROCESSES

ВПРОВАДЖЕННЯ ШТУЧНОГО ІНТЕЛЕКТУ У ПРОЦЕСИ МІЖНАРОДНОГО ІНФЛЮЕНС-МАРКЕТИНГУ

International influencer marketing is challenged by market fragmentation, cultural diversity, and inefficient traditional ROI forecasting for multinational corporation (MNCs). This article proposes a conceptual framework for integrating Artificial Intelligence (AI), including deep learning (DL) and natural language processing (NLP), into international marketing strategies. Predictive analytics using DL models optimizes investments by integrating campaign metrics and macro-indicators. Multimodal content adaptation, utilizing NLP for cultural transcreation and computer vision for visual localization, enables successful 'glocalization'. The integration of AI transforms international influencer marketing into a high-precision, data-driven discipline, granting MNCs the ability to achieve global consistency and local authenticity. Further research must address ethical AI governance and algorithmic bias.

Keywords: *artificial intelligence, influencer marketing, transnational marketing, deep learning, predictive analytics, content localization, algorithmic bias.*

Сучасна парадигма міжнародного маркетингу визначається експоненційним зростанням інфлюенсер-маркетингу, однак глобальна експансія транснаціональних корпорацій стикається із системними обмеженнями, зумовленими високою фрагментацією цільових ринків, культурною різноманітністю та регуляторною нерівномірністю. Традиційні, суб'єктивні методи підбору інфлюенсерів, оцінки автентичності та прогнозування рентабельності інвестицій (ROI) є неефективними для масштабних транскордонних операцій, що створює критичну потребу у впровадженні інтелектуальних систем. В цій статті розглядаються перспективи розробки концептуально-методологічної основи для системної інтеграції штучного інтелекту, включаючи глибоке навчання (deep learning) та обробку природної мови (NLP), у міжнародні маркетингові стратегії. Обґрунтовується використання прогностичної аналітики predictive analytics) для транснаціонального прогнозування ROI. Моделі глибокого навчання (LSTM, attention mechanisms) інтегрують внутрішні метрики кампанії (CTR, engagement rate) та зовнішні макроекономічні й регуляторні індикатори, що дозволяє здійснювати точне сценарне моделювання та багатокритеріальну оптимізацію інвестицій. Детально проаналізовано багатомодальну адаптацію контенту. NLP використовується для транскреації – культурної адаптації повідомлень, що виходить за межі простого перекладу, а машинне зорове сприйняття (Computer Vision) на основі CNN забезпечує візуальну локалізацію, адаптуючи естетичний контекст до місцевих норм. Ця багатомодальна стратегія є необхідною умовою для підтримки стратегії «глокалізації». Результати підтверджують, що інтеграція AI трансформує міжнародний інфлюенсер-маркетинг на високоточну, керовану даними дисципліну, надаючи ТНК критично важливий механізм для досягнення глобальної узгодженості бренду та необхідної локальної автентичності. Подальші дослідження необхідні для вирішення проблем етичного управління AI, мінімізації ризиків алгоритмічної упередженості

через нерепрезентативність міжнародних даних, а також для забезпечення безшовної крос-платформної інтеграції для повної реалізації потенціалу AI в даній сфері.

Ключові слова: *штучний інтелект, маркетинг впливу, транснаціональний маркетинг, глибоке навчання, прогнозна аналітика, локалізація контенту, алгоритмічне упередження.*

Formulation of the problem. The contemporary paradigm of international marketing is defined by the exponential growth of influencer marketing, which has achieved the status of a critical strategic tool for building brand trust and stimulating final sales within the highly competitive digital environment. However, despite its evident effectiveness, the global expansion of MNCs, such as Unilever or Nestlé, faces systemic difficulties in the centralized yet adaptive management of this marketing channel. The core scientific and practical challenge crystallizes around the high fragmentation of target markets, coupled with deep diversity in cultural and social codes, manifold linguistic barriers, and regulatory unevenness across different jurisdictions. These factors create a complex operational conflict, precluding a scalable, yet hyper-personalized, approach to global campaigns. At the transnational level, traditional methods for vetting influencers, assessing their genuine authenticity, and crucially, forecasting the financial ROI, prove to be burdensome, highly subjective, and insufficiently accurate. Given that AI is recognized as a rapidly growing deep technology with the potential for significant economic transformation, there is an urgent need for scientific comprehension and a practical resolution through the implementation of intelligent systems.

Consequently, this research directly addresses two interconnected strategic objectives. The scientific objective necessitates the development of an innovative methodological foundation and a cohesive conceptual model capable of effectively integrating the capabilities of DL and the processing of extraordinary volumes of Big Data. The ultimate goal is the creation of a new generation of analytical tools for strategic decision-making in international influencer marketing. This research directly contributes to the scientific understanding of strategic goals related to the transition to an AI-driven economy, designated as a global priority, as evidenced by official policy documents such as the UK's National AI Strategy. The practical objective is centered on significantly increasing the efficiency and transparency of MNCs' marketing investments. The application of AI solutions enables hyper-personalization of content, minimizes critical risks associated with fraudulent influencers (e.g., through bot detection algorithms), and achieves substantial growth in operational productivity in marketing processes. This aligns perfectly with broader economic goals for the diffusion of AI into the economy, transforming intuitive marketing practices into a scientifically substantiated, data-driven discipline.

Analysis of recent research and publications. An analysis of current scientific literature confirms that the dynamic evolution of international influencer marketing and AI technologies necessitates a fundamental review of traditional strategies. The existing scientific approaches can be rigorously structured around three core themes: the theoretical role of AI in commerce, the micro-level mechanics of influencer influence, and the strategic challenges of global AI governance.

On a macro level, AI is widely acknowledged by academic circles and international organizations as a general purpose technology (GPT). The extensive systematic literature review by Labib E. [4] confirms that AI has fundamentally revolutionized the marketing domain by accelerating growth, enhancing processes, and transforming the business landscape, specifically identifying emerging research clusters such as 'AI for decision-making' and 'AI-enhanced market dynamic strategies' [4]. Similarly, Lee, B. asserts that AI integration allows for unprecedented accuracy in customer segmentation and demand forecasting, which is critical for global scalability [5]. Furthermore, AI's prowess is evident in personalised service supply and predicting customer behavior, enabling data-informed decisions with greater efficiency and accuracy.

A significant portion of academic attention is focused on analyzing the micro-level mechanisms of influencer impact. The central concepts remain 'trust' and the 'authenticity' of content, which Smith A. identifies as the primary psychological drivers of consumer behavior [12]. Strungar, A.V. details that micro-influencers generate higher trust due to closer subscriber connections, making them ideal for localized campaigns, in contrast to macro-influencers, who are more effective for international brand awareness but may lack personalization [13]. Existing practical AI tools that detect fraud (fake followers, engagement fraud) and perform sentiment analysis are widely accepted, yet their deep application is often limited to localized or culturally homogenous data sets, suggesting a lack of cross-cultural robustness.

At the macro-strategic level, the governance of AI has become a global priority. Governmental documents, such as the UK's National AI Strategy [9], underscore the strategic importance of ensuring AI's economic benefits while establishing effective control and regulation. This necessitates focusing on developing principles for Trustworthy AI, which, according to the OECD, is a prerequisite for global technology diffusion [11]. However, despite the advantages of integrating AI, there is a recognized concern regarding its potential to lead to dehumanization and compromise privacy, emphasizing that the absence of universal international standards risks undermining public confidence and creating regulatory barriers [3].

Despite the active research agenda, several critical scientific gaps remain, particularly in applying AI specifically within the international influencer marketing context:

1. Cross-cultural matching: current AI algorithms are typically trained on localized data, resulting in a lack of universal models that effectively integrate complex cultural, linguistic, and socio-behavioral differences across international markets. As Johnson, C., & Kim, D. point out, AI's inability to account for local cultural codes (e.g., perception of humor, communication formality) precludes optimal transnational selection, often resulting in communication failures [2].
2. Transnational ROI forecasting: scientific models often fail to provide reliable ROI predictions for new international markets because they rarely integrate external macroeconomic, socio-political, and regulatory factors of different countries with internal campaign data. As emphasized by Martinez F., this omission makes accurate conversion prediction difficult and renders transnational investments highly risky [7].
3. Bias and ethics: the global scale of AI application amplifies the risk of algorithmic bias in automated selection processes. If the AI training data is unrepresentative, it can lead to systematic underrepresentation of certain regional or ethnic groups. This directly violates responsible AI principles, which mandate the development of transnational standards for transparency and fairness in marketing systems [10].

Formulation of the purpose of the article. The goal of this scientific article is to develop and substantiate a conceptual and methodological foundation for the effective integration of AI systems into international influencer marketing strategies, aimed at ensuring their scalability, analytical accuracy, and comprehensive cultural relevance. To achieve this goal, the following interconnected research tasks are set forth:

1. To define, classify, and substantiate the key AI instruments and architectures utilized for the automated, multi-factor selection of influencers (based on the machine processing of metadata and content analysis) in the multinational market.
2. To justify the feasibility of applying complex predictive models (predictive analytics) to accurately estimate the potential conversion and ROI of international influencer campaigns.
3. To analyze the use of NLP and Computer Vision (MV) technologies for achieving hyper-personalization of content, adapted to the cultural and linguistic specificities of global target audiences.
4. To formulate practical recommendations for ensuring the ethicality, transparency, and mitigation of algorithmic bias in cross-border AI solutions within influencer marketing.

Presentation of the main material. In the context of international marketing operations, the strategic effectiveness of influencer selection can no longer rely exclusively on linear quantitative metrics, such as the total number of followers. This traditional approach is scientifically inadequate for capturing the real quality of the audience and its conversion potential. Leading researchers, notably Johnson, C., & Kim, D., have strongly argued for moving "beyond follower count," demanding a multi-dimensional analysis that accounts for subtle social and cultural nuances [2]. For MNCs seeking both simultaneous scalability and local relevance, AI-Driven Influencer Sourcing becomes a necessary strategic prerequisite. The substantiated research outcome is the development of a conceptual Multi-Factor Ranking Model (MFRM), functioning as a modular AI-architecture that leverages Deep Learning for multi-criteria assessment.

The MFRM is composed of three integrated modules. The first module is dedicated to audience verification and fraud detection. Ensuring audience transparency and authenticity is the primary task for protecting large MNC marketing budgets. To counter engagement fraud, AI employs anomaly detection and time-series analysis algorithms, which analyze engagement patterns, comparing expected activity with statistically normalized metrics to identify suspicious spikes indicative of bot activity. Furthermore, neural networks are utilized for profile analysis, validating metrics like subscription ratios and comment uniformity. For instance, global players like Unilever or Procter & Gamble integrate such AI-platforms to verify influencer audiences in fraud-prone, highly fragmented markets, thereby minimizing financial risks.

The second module focuses on content-fit scoring and semantic analysis. This module resolves the problem of ensuring the semantic and cultural alignment of content with brand values. At the international level, content must be tonally and ethically consistent with global policy. This is achieved through advanced NLP, using transformer architectures (e.g., multilingual BERT) capable of performing cross-lingual semantic analysis. This assesses the entire semantic space of the message to guarantee compliance with brand ethics and local regulatory requirements. Zhao, H. emphasizes NLP's decisive role in content adaptation and cultural localization [16], ensuring, for example, that a global automotive brand like Audi maintains a high level of formality in its German communications while allowing a more emotional tone in South America.

The third module is international demographic and psychographic segmentation. This ensures high-precision geographical and social targeting. AI tools utilize geospatial analytics and psychographic clustering (e.g., DBSCAN – density-based spatial clustering of applications with noise) to identify high-value, niche audiences, including micro- and nano-influencers, whose audience is highly concentrated geographically [13]. Accurate analysis of interaction patterns enables MNCs, such as Starbucks, to execute hyper-localized campaigns. For instance, AI can precisely identify that the most convertible audience for a new product line is concentrated not just in France but specifically in Paris and Lyon, and possesses income above a certain macro-economically integrated threshold. This capability embodies the 'global-to-local' approach, transforming mass marketing into a highly accurate, analytically driven discipline [5].

The inherent investment uncertainty and the inability to accurately forecast ROI prior to campaign launch – especially when entering new international markets – represent a fundamental practical challenge for MNCs. In a globally competitive environment, where AI is driving business process transformations, intuitive forecasting methods are inadequate. Martinez, F., in research on fragmented markets, confirms that only the integration of complex multi-factor predictive models can achieve the necessary accuracy [7]. The research result is an innovative two-component predictive analytics approach, transforming marketing investments into scientifically grounded decisions.

The first component involves deep learning predictive models for multi-factor integration. The model employs sophisticated deep learning architectures – including recurrent neural

networks (RNN), long short-term memory (LSTM) networks, and attention mechanisms – to analyze an extraordinary volume of heterogeneous variables, capable of revealing non-linear, time-dependent, and hidden correlations [5]. The model synthesizes two main groups of factors:

Firstly, the integration of internal campaign and influencer variables covers detailed analysis of parameters such as the influencer's Content-Fit Scoring and authenticity, the influencer type (micro vs. macro), and the optimal content format (e.g., TikTok video versus Instagram static images). The model uses LSTM to predict KPIs – click-through rate (CTR), engagement rate, conversion rate, and direct sales-by modelling the temporal lag between publication and purchase.

Secondly, the model integrates external macroeconomic and socio-cultural indicators, which are essential for transnational forecasting [7]. This includes economic and political factors (GDP per capita, consumer sentiment indices, and geopolitical risks, the importance of which is highlighted by the World Bank [15] in assessing stability) and social factors. For instance, forecasting sales for L'Oréal in Latin America requires integrating local holiday cycles and cultural norms with engagement metrics.

The second component is scenario modelling and multi-criteria investment optimization. This functionality allows MNC marketers to rapidly calculate thousands of hypothetical investment scenarios using optimization algorithms (e.g., genetic algorithms) to find the best budget allocation [5]. Optimization of resources includes conducting an "macro vs. micro" efficiency analysis to compare the financial return of macro-influencers (wide reach) against micro-influencers (higher conversion) across various regions. Furthermore, the system performs inter-regional budget allocation, utilizing forecasted conversion rates and customer lifetime value (CLV) [1] to determine the most cost-effective distribution. For a global brand like Adidas, the AI determines whether to prioritize investment in video content for the Chinese market or photo-reports in Germany, ensuring high ROI on generative AI (Gen AI ROI), as discussed in analytical reports by McKinsey & Company [8].

To achieve high engagement and emotional ‘trust’ in international markets, campaign content must be intellectually culturally adapted (localized), moving beyond mere linguistic translation. This process becomes necessary to overcome cultural barriers and align with consumer expectations. As Zhao, H. asserts, literal translation often ignores pragmatic and sociolinguistic nuances, leading to communication failures (‘global blunders’) and undermining authenticity [16]. This is critical for MNCs that seek to integrate social interactions into commercial processes while maintaining global brand consistency (Kaplan & Haenlein, 2023). The research result is a multi-modal adaptation model integrating two synergistic AI technologies to achieve high-precision cultural compliance.

Firstly, NLP is applied for linguistic and tonal adaptation, operating at the level of transcreation – cultural and emotional sense adaptation. AI systems based on transformer and multilingual neural network architectures conduct complex tonal analysis and emotional valence analysis to determine the optimal lexicon, formality, and emotional intensity suitable for a specific country. For example, the NLP system analyzes how to best adapt a direct call-to-action for cultures with low-context communication versus adapting to the more indirect communication style of high-context cultures [6]. These systems can also detect and replace cultural metaphors and idioms with localized equivalents. This tonal fidelity is crucial for ensuring the message's authenticity, as perceived message value and trust directly influence consumer purchasing decisions [6].

Secondly, CV is integrated for visual localization. Since non-verbal elements – colors, symbols, gestures, and social contexts – carry deep cultural meanings, CV systems are essential for avoiding visual cultural missteps. AI utilizes convolutional neural networks (CNN) for object classification, assessing color schemes, the influencer's attire, and culturally-marked symbols in the background. The system proposes automated or semi-automated changes corresponding to local aesthetic preferences. For instance, a cosmetic

brand in Southeast Asia can use AI to ensure a greater representation of local ethnic groups or integrate visual elements associated with local holidays (e.g., Diwali or Chinese New Year). This approach minimizes the risk of cultural insensitivity, supporting the strategy of glocalization – combining global standardization with local adaptation. This multi-modal integration guarantees harmonic correspondence between textual and visual components, which is paramount for high engagement and maintaining global brand consistency.

Conclusions. The conducted research fundamentally substantiates that the implementation of Artificial Intelligence (AI) systems into international influencer marketing strategies is a critical strategic condition for multinational corporations (MNCs). AI successfully resolves the market paradox by enabling absolute campaign scalability while simultaneously maintaining the cultural relevance and local authenticity of the content. The integration of the developed AI models—including the multi-factor ranking model, predictive ROI analytics, and multi-modal content adaptation systems—transforms international influencer marketing from a subjective, high-risk process into a highly accurate, data-driven discipline. This transformation enhances investment transparency by minimizing the influence of human intuition on critical decisions.

The primary value of AI for global commerce lies in its ability to overcome international market fragmentation. By applying Deep Learning (DL) tools for cross-cultural semantic and visual analysis, AI ensures both global brand consistency and the necessary local authenticity and emotional trust required for conversion. Ultimately, AI serves as an indispensable catalyst for achieving economic growth and productivity across all relevant sectors.

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Дата надходження статті: 26.03.2026
Дата прийняття статті: 16.04.2026
Дата публікації статті: 29.05.2026