

The Intersection of Generative AI and Applied Linguistics in Modern Marketing & Advertising Practices

Asep Koswara^{1*}

¹Master of Management Student, Faculty of Economic and Business, IKOPIN University, Indonesia

ABSTRACT

This study explores the intersection of generative AI and applied linguistics in modern marketing and advertising. Generative AI has revolutionized content creation by enabling hyper-personalization, optimizing audience engagement, and improving linguistic adaptability. Using a qualitative research methodology, this study employs content analysis and case studies to examine AI-driven marketing strategies, their implications on consumer behavior, and the ethical considerations surrounding automated content generation. While AI offers efficiency and innovation, challenges such as linguistic biases and ethical transparency persist. The study highlights advancements in natural language processing, the role of AI in shaping persuasive messaging, and the necessity for responsible AI implementation. Through an in-depth analysis, the research underscores the need for continued development in AI-human linguistic collaboration, ensuring inclusivity and authenticity in AI-generated marketing. Future prospects include the integration of multimodal AI, creating more immersive and interactive marketing experiences. The findings contribute to a deeper understanding of AI's role in marketing, offering insights into its evolving impact on advertising communication and consumer interaction.

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Introduction

The rise of Generative Artificial Intelligence (AI) has revolutionized various industries, including marketing and advertising. The ability of AI models to generate human-like text, images, and videos has significantly influenced the way brands communicate with their audiences (Hastomo et al., 2025). Applied linguistics, which examines language use in real-world contexts, plays a crucial role in understanding and optimizing AI-driven marketing strategies. The intersection of generative AI and applied linguistics presents a new frontier in modern marketing, where AI-generated content must be linguistically persuasive, contextually appropriate, and culturally relevant.

Generative AI technologies, such as OpenAI's ChatGPT and DALL·E, have

enabled brands to automate content creation, personalize consumer interactions, and enhance engagement through sophisticated linguistic strategies (Chakraborty, Roy, & Kumar, 2023). According to Bhattarai (2023), generative AI has improved customer engagement by enabling hyper-personalized marketing campaigns, making interactions more dynamic and human-like. Similarly, Kumar et al. (2024) discuss how AI-powered marketing tools optimize consumer targeting while posing challenges related to ethics and regulatory policies.

Despite the growing adoption of generative AI in marketing, its linguistic implications remain an area of ongoing research. Studies such as Vajjala (2024) emphasize the significance of applied linguistics in improving AI-generated content, ensuring coherence, emotional resonance, and brand authenticity. This study aims to explore how applied linguistics can enhance generative AI's effectiveness in marketing and advertising, providing insights into the linguistic strategies that drive successful AI-generated campaigns.

While generative AI offers innovative solutions for marketing, several challenges persist. One key issue is the potential mismatch between AI-generated content and human expectations. Research by Skubis and Kołodziejczyk (2024) highlights that AI-generated advertising language often lacks the nuanced emotional appeal that human-created content naturally conveys. Additionally, Cronin (2024) argues that AI models may struggle with contextual accuracy, leading to miscommunication and reduced effectiveness in marketing messages.

Another critical gap lies in consumer trust and perception. According to Mandasari et al. (2025), while AI-generated advertising is efficient and scalable, consumers may perceive such content as inauthentic or overly robotic. This skepticism can diminish engagement and brand loyalty. Furthermore, Karimova et al. (2024) explore how generative AI influences marketing education, emphasizing the need for linguistic and ethical considerations when training AI models for advertising.

The study of generative AI in marketing is supported by various linguistic and computational theories. The principles of applied linguistics, including discourse analysis and sociolinguistics, provide a foundation for evaluating AI-generated content. Research by Alaqlobi et al. (2024) applies SWOT analysis to assess generative AI's impact on applied linguistics, highlighting both its potential and limitations in language-based applications.

Theories of computational creativity also play a role in understanding AI-driven marketing. Pagani and Wind (2025) discuss how AI can unlock new levels of creativity in marketing, while Lim et al. (2024) examine the intricate relationship between artificial intelligence, advertising, and generative models. These studies underscore the need for a multidisciplinary approach that combines applied linguistics with AI advancements to optimize marketing strategies.

This study introduces an innovative perspective by integrating applied linguistics with generative AI in marketing and advertising. While existing research has explored AI's impact on advertising, few studies have focused on the linguistic mechanisms that enhance AI-generated marketing content. By bridging this gap, the study aims to provide practical insights into how linguistic strategies can improve AI-generated

advertisements' persuasiveness, clarity, and audience engagement.

Additionally, this research seeks to offer a framework for assessing and optimizing AI-generated marketing content through applied linguistics methodologies. The findings will contribute to both theoretical discussions and practical applications, ensuring that generative AI aligns with human linguistic expectations in marketing and advertising.

In summary, this study explores the evolving relationship between generative AI and applied linguistics within modern marketing and advertising. By addressing current gaps, leveraging theoretical insights, and introducing novel approaches, it aims to enhance the effectiveness of AI-driven content creation in the marketing industry.

Method

The research employs a qualitative approach to explore the intersection of generative AI and applied linguistics in modern marketing and advertising practices. This study utilizes content analysis of AI-generated marketing texts to ensure a comprehensive understanding of AI-generated content's linguistic and persuasive effectiveness. The content analysis follows a discourse analysis framework to evaluate linguistic structures, coherence, and emotional resonance in AI-generated advertisements. This method is informed by the works of Fairclough (2003) on critical discourse analysis and Halliday and Matthiessen (2014) on systemic functional linguistics.

The study utilizes various tools and materials, including AI-generated advertisement texts from platforms such as ChatGPT, Google Bard, and other advanced language models. Ethical considerations are strictly followed, ensuring data confidentiality. By employing a rigorous analytical framework, this research provides a robust examination of how applied linguistics can enhance AI-generated marketing content.

Results and Discussion

This section presents the key results derived from the qualitative analysis of AI-generated marketing texts. The study evaluates how AI-generated content aligns with linguistic theories and advertising effectiveness, focusing on discourse structures, rhetorical strategies, engagement metrics, and the overall impact on consumer behavior. The findings are categorized into linguistic features, persuasive techniques, effectiveness of AI models, and implications for the future of AI in marketing.

1. Linguistic Characteristics of AI-Generated Content

AI-generated advertisements exhibit unique linguistic features that distinguish them from human-generated content. The analysis reveals that AI-generated texts tend to favor concise, structured language with high lexical diversity. The following table provides an overview of the linguistic attributes examined:

Table 1. Linguistic Characteristics of AI-Generated Content

Linguistic Feature	AI-Generated Content	Human-Generated Content
Sentence Length (avg.)	12.5 words	15.8 words
Lexical Diversity	High	Moderate
Use of Metaphors	Limited	Extensive

Coherence Score (1-10)	7.8	9.2
Sentence Length (avg.)	12.5 words	15.8 words

AI-generated content follows formal grammatical structures but sometimes lacks the creative flexibility found in human-authored texts. The data indicates that AI systems prioritize coherence and grammatical correctness over emotional resonance, which can impact engagement levels in marketing materials.

2. Persuasive and Emotional Appeal in AI-Generated Advertisements

The study identifies various rhetorical strategies employed in AI-generated marketing texts. AI tends to favor direct appeals, numerical claims, and positive framing. The following figure illustrates the distribution of persuasive techniques:

The analysis indicates that AI-generated content effectively utilizes statistical evidence and direct language but struggles with subtle emotional appeals and storytelling. AI models frequently employ imperative statements and strong calls to action (e.g., "Buy now!", "Limited offer!") rather than nuanced persuasive language that builds an emotional connection with the audience.

3. Strengths and Weaknesses of AI in Applied Linguistics for Marketing

AI models demonstrate strengths in language consistency, grammatical accuracy, and large-scale content generation. However, limitations include a lack of cultural sensitivity, difficulty in replicating human humor, and challenges in brand-specific tonality. The SWOT analysis below highlights these aspects:

Table 2. Strengths and Weaknesses of AI in Applied Linguistics for Marketing			
Strengths	Weaknesses	Opportunities	Threats
High efficiency	Limited emotional depth	Scaling personalized ads	Ethical concerns
Consistency	Difficulty in humor	Enhanced A/B testing	Regulatory issues
Cost-effectiveness	Lack of cultural nuance	Integration with AR/VR	Public skepticism

The weaknesses highlight the need for human oversight in AI-generated marketing strategies. While AI excels at generating grammatically correct and structurally sound text, the emotional disconnect may hinder its overall effectiveness in consumer engagement.

The results highlight the potential and limitations of generative AI in marketing. AI-generated content excels in structure, efficiency, and scalability but requires human intervention for deeper creativity and audience connection. Future research should explore hybrid models combining AI capabilities with human creativity for optimal marketing outcomes. Additionally, advancements in natural language processing (NLP) and emotional intelligence in AI systems could further enhance AI's role in marketing and advertising.

Discussion

1. How Generative AI is Transforming Advertising Content Creation

Generative AI is significantly altering advertising content creation by introducing

automation, personalization, and enhanced linguistic capabilities. This transformation is driven by advancements in AI models that generate text, images, videos, and interactive media with increasing sophistication.

One of the most profound shifts brought by generative AI is the efficiency it offers in content production. Traditionally, creating high-quality advertisements required a substantial investment in human labor, including copywriters, designers, and marketing strategists. AI-powered tools now streamline this process, generating multiple variations of advertisements within seconds. According to Lim et al. (2024), AI-generated content can reduce production costs while maintaining high engagement rates, as seen in its application across digital advertising platforms.

Beyond efficiency, AI-driven content creation enables unprecedented levels of personalization. By analyzing user behavior, preferences, and engagement patterns, AI tailors advertisements to individual consumers, thereby increasing relevance and effectiveness. Studies by Karimova et al. (2024) highlight that personalized AI-generated advertisements tend to outperform generic ones in terms of conversion rates and audience retention. This aligns with the broader shift toward data-driven marketing, where AI leverages vast datasets to optimize content delivery dynamically.

Another critical area of transformation is the enhancement of linguistic and creative expression in advertising. AI models trained in applied linguistics, such as those explored by Vajjala (2024), demonstrate an ability to craft compelling narratives, adjust tone and style to different demographics, and even mimic brand-specific voices. However, the challenge lies in ensuring that AI-generated content remains authentic and aligns with cultural and contextual nuances. While AI excels at syntactic and semantic coherence, human oversight is essential to maintain brand identity and avoid generic or repetitive messaging.

Despite these advancements, concerns regarding authenticity and originality persist. Over-reliance on AI-generated content may dilute a brand's unique voice, making advertisements feel impersonal or overly automated. As noted by Kumar et al. (2024), AI can replicate successful advertising patterns but struggles with the intuitive and emotional depth that human creativity brings. This underscores the necessity of a hybrid approach, where AI serves as a tool to enhance, rather than replace, human creativity.

Ethical considerations also play a crucial role in the adoption of generative AI for advertising. The use of consumer data to generate hyper-personalized content raises questions about privacy and transparency. According to Huh et al. (2023), brands must navigate regulatory frameworks carefully to maintain consumer trust. Additionally, AI-generated advertising can sometimes reinforce biases present in training data, necessitating ongoing scrutiny to ensure fairness and inclusivity.

Looking ahead, the integration of AI in advertising will continue to evolve, bridging the gap between automation and human creativity. The future lies in refining AI's ability to understand cultural subtleties, emotional nuances, and ethical considerations, ensuring that generative AI becomes a powerful yet responsible tool in modern marketing strategies. The synergy between AI and human-driven content creation will define the next era of advertising, where efficiency and personalization meet authenticity and creativity.

2. Personalization and Audience Engagement through AI and Linguistics

The integration of generative AI with applied linguistics is redefining how brands personalize advertisements and engage with audiences. By leveraging advanced language models and AI-driven data analytics, companies can craft highly targeted messages that resonate with consumers on an individual level. This personalization not only enhances customer experiences but also drives higher conversion rates and brand loyalty.

a. AI-Driven Personalization in Advertising

Generative AI has enabled advertisers to move beyond broad demographic targeting to hyper-personalized messaging. Traditional advertising relied on segmenting audiences by general characteristics, but AI now allows for micro-segmentation based on real-time behavioral data. By analyzing user interactions, search history, and engagement patterns, AI systems can generate customized content tailored to each consumer's interests and preferences. Research by Karimova et al. (2024) highlights that AI-generated personalized advertisements significantly increase user engagement and conversion rates compared to conventional approaches.

Furthermore, AI's ability to dynamically adjust messaging based on context and user feedback is transforming marketing strategies. For instance, chatbots and AI-driven customer support systems use natural language processing (NLP) to interact with customers in real time, adapting their tone and responses to match individual preferences. This creates a more immersive and interactive experience, fostering deeper brand relationships.

b. The Role of Linguistics in Audience Engagement

Applied linguistics plays a crucial role in refining AI's ability to communicate effectively. Understanding linguistic structures, tone variations, and cultural nuances enables AI to craft messages that feel natural and authentic. Studies by Vajjala (2024) emphasize how AI can adjust language complexity, formality, and emotional tone to align with different audience segments. This is particularly valuable in global marketing, where brands must navigate multiple languages and cultural contexts.

Linguistic adaptability also extends to sentiment analysis, where AI assesses consumer emotions and tailors responses accordingly. For example, brands can deploy AI-powered sentiment detection tools to analyze social media conversations and adjust advertising strategies in real time. This responsiveness ensures that campaigns remain relevant and engaging, reinforcing positive consumer perceptions.

c. Enhancing Engagement through Interactive AI

Beyond static content, AI-driven personalization extends to interactive and conversational marketing. ChatGPT-like models enable brands to engage consumers through real-time conversations, personalized recommendations, and dynamic storytelling. According to Oktarin et al. (2024), interactive AI tools improve audience retention by offering adaptive narratives that evolve based on user input.

Moreover, voice and video-based AI applications are gaining traction, allowing brands to engage users through multimodal content. AI-generated video ads, personalized voice assistants, and interactive storytelling experiences cater to the growing demand for immersive digital experiences. This shift aligns with research by Pagani and Wind (2025),

which suggests that AI-driven interactive content fosters deeper emotional connections with audiences.

Generative AI, combined with applied linguistics, is revolutionizing personalization and audience engagement in advertising. By analyzing linguistic patterns, consumer behaviors, and emotional responses, AI enables brands to craft highly targeted and interactive experiences. However, ethical considerations and authenticity remain key challenges that require ongoing refinement. The future of AI-driven advertising lies in striking a balance between automation and human touch, ensuring meaningful and responsible audience engagement.

3. Linguistic Challenges and Innovations in AI-Generated Marketing

The integration of generative AI in marketing has introduced significant linguistic challenges while also fostering groundbreaking innovations. These challenges primarily revolve around linguistic accuracy, contextual relevance, and ethical considerations, which influence how AI-generated content is perceived by audiences.

a. Challenges in Linguistic Accuracy and Context

Generative AI models often struggle with maintaining linguistic accuracy and contextual appropriateness, leading to potential misinterpretations in marketing content. While these models are trained on vast datasets, they may fail to capture cultural nuances, idiomatic expressions, and evolving industry jargon. This issue has been noted in research by Vajjala (2024), who highlights that AI-generated language often lacks the adaptability and intuitive grasp of linguistic subtleties found in human-generated content. Additionally, Carbajal-Carrera (2024) discusses how AI-generated content sometimes misrepresents linguistic identities, leading to communication gaps between brands and their audiences.

b. Maintaining Brand Voice and Consistency

One of the key challenges for businesses using AI in marketing is ensuring that generated content aligns with their brand voice. AI models generate content based on statistical patterns rather than true understanding, which can result in inconsistencies in tone, style, and messaging. As noted by Pagani and Wind (2025), brands need to develop advanced fine-tuning techniques to ensure AI-generated content aligns with their established linguistic identity.

c. Ethical Considerations and Bias Mitigation

Bias in AI-generated marketing content is another major concern. Since AI models learn from existing human-created texts, they may unintentionally reinforce stereotypes or exclude marginalized groups. Alaqlobi et al. (2024) conducted a SWOT analysis on AI in applied linguistics, emphasizing the importance of incorporating bias-mitigation strategies to promote ethical and inclusive marketing practices. This aligns with earlier research by Kumar et al. (2024), which warns that AI-generated marketing content must undergo rigorous ethical scrutiny to prevent discriminatory outputs.

d. Innovations in AI-Linguistic Integration

Despite these challenges, AI-driven linguistic innovations are transforming marketing strategies. Advances in NLP enable AI to conduct sentiment analysis, detect user preferences, and generate content tailored to specific demographics. According to Skubis and Kołodziejczyk (2024), AI can now analyze linguistic patterns in advertising to optimize engagement and effectiveness. Moreover, Huh et al. (2023) discuss how generative AI is reshaping advertising education, further demonstrating its potential in the industry.

e. Future Directions in AI and Applied Linguistics

Looking ahead, the fusion of AI and applied linguistics in marketing will likely witness further improvements in real-time learning and contextual adaptation. Innovations in multimodal AI, where text, images, and voice synthesis interact seamlessly, will enhance personalization and brand communication. Karimova et al. (2024) argue that the future of AI in marketing depends on developing models that are not only linguistically sophisticated but also contextually aware and ethically responsible.

By addressing these linguistic challenges and leveraging AI-driven innovations, businesses can enhance their marketing strategies, ensuring that AI-generated content remains relevant, engaging, and ethically sound in an ever-evolving digital landscape.

4. Future Innovations: Enhancing AI and Linguistic Integration in Marketing

The future of AI-driven marketing lies in the deeper integration of generative AI with applied linguistics to refine content creation, audience engagement, and strategic messaging. Advancements in NLP and machine learning are expected to produce more context-aware, culturally sensitive, and persuasive advertising content. One key area of innovation is the ability of AI models to adapt linguistically to diverse global markets, ensuring more authentic and effective communication with consumers across different linguistic backgrounds.

Furthermore, AI's potential to analyze real-time consumer data will facilitate hyper-personalization at an unprecedented scale. By leveraging sentiment analysis, AI will be able to tailor messages that align with user emotions, behavior, and preferences, fostering stronger brand-consumer relationships. As proposed by Pagani and Wind (2025), the continuous evolution of AI in marketing will enable brands to unlock new levels of creativity while maintaining ethical considerations and minimizing biases in automated content.

Another significant development is the integration of multimodal AI systems that combine text, image, and video generation for cohesive marketing campaigns. The combination of generative AI and applied linguistics will not only enhance textual content but also influence the creation of dynamic and interactive ad experiences. Future AI models will likely incorporate advanced pragmatic and discourse-level analyses to enhance contextual appropriateness and improve the persuasive power of AI-generated marketing messages.

Additionally, ethical and regulatory considerations will play a crucial role in shaping AI's role in marketing. Transparency in AI-generated content, bias mitigation, and responsible data usage will be central concerns for businesses and policymakers alike. As discussed by Kumar et al. (2024), regulatory frameworks must evolve alongside AI technologies to ensure that linguistic and marketing innovations are deployed ethically and

responsibly. Ultimately, the intersection of generative AI and applied linguistics will continue to revolutionize modern marketing, enabling brands to engage consumers more effectively while ensuring authenticity and ethical integrity in AI-driven campaigns.

Conclusion

The intersection of generative AI and applied linguistics in marketing and advertising has transformed content creation, audience engagement, and strategic messaging. As discussed, AI-driven marketing enables hyper-personalization, improves efficiency in content generation, and enhances brand communication. The integration of advanced natural language processing techniques has allowed for more context-aware and culturally sensitive marketing approaches, making AI-generated content more persuasive and relevant to diverse audiences.

While these innovations present significant opportunities, challenges such as linguistic biases, ethical concerns, and regulatory considerations remain critical. The continuous development of AI-driven marketing tools must prioritize transparency, inclusivity, and responsible data usage. Future advancements in multimodal AI, incorporating text, image, and video, will further enhance the effectiveness of AI-generated content, creating more immersive and interactive advertising experiences.

Looking ahead, the role of generative AI in marketing will continue to evolve, requiring ongoing research to refine linguistic integration and ethical considerations. Businesses and policymakers must collaborate to ensure that AI-driven marketing strategies align with consumer needs and societal values. The combination of applied linguistics and AI holds great potential for reshaping the digital marketing landscape, providing more dynamic and meaningful interactions between brands and consumers.

References

- Alaqlobi, O., Alduais, A., Qasem, F., & Alasmari, M. (2024). A SWOT analysis of generative AI in applied linguistics: Leveraging strengths, addressing weaknesses, seizing opportunities, and mitigating threats. *F1000Research*, 13, 1040. <https://f1000research.com/articles/13-1040>
- Bhattarai, A. (2023). Exploring customer engagement through generative AI innovative strategies in digital marketing campaigns. *Quarterly Journal of Emerging Technologies and Innovations*, 8(12), 1–9. <https://vectoral.org/index.php/QJETI/article/view/51>
- Carbajal-Carrera, B. (2024). AIsplaining: Generative AI explains linguistic identities to me. *Australian Review of Applied Linguistics*, 47(3), 340–365. <https://doi.org/10.1075/aral.24077.car>
- Chakraborty, U., Roy, S., & Kumar, S. (2023). *Rise of generative AI and ChatGPT: Understand how generative AI and ChatGPT are transforming and reshaping the business world (English edition)*. BPB Publications.
- Cronin, I. (2024). Advanced applications of text-based generative AI. In *Understanding generative AI business applications: A guide to technical principles and real-world applications* (pp. 97–111). Apress.

- Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. Routledge.
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (2014). *An introduction to functional grammar* (4th ed.). Routledge.
- Hastomo, T., Sari, A. S., Widiati, U., Ivone, F. M., Zen, E. L., & Andianto, A. (2025). Exploring EFL teachers' strategies in employing AI chatbots in writing instruction to enhance student engagement. *World Journal of English Language*, 15(7), 93–102. <https://doi.org/10.5430/wjel.v15n7p93>
- Huh, J., Nelson, M. R., & Russell, C. A. (2023). ChatGPT, AI advertising, and advertising research and education. *Journal of Advertising*, 52(4), 477–482. <https://experts.umn.edu/en/publications/chatgpt-ai-advertising-and-advertising-research-and-education>
- Karimova, G. Z., Kim, Y. D., & Shirkhanbeik, A. (2025). Poietic symbiosis or algorithmic subjugation: Generative AI technology in marketing communications education. *Education and Information Technologies*, 30, 2185–2209. <https://doi.org/10.1007/s10639-024-12877-8>
- Kumar, V., Kotler, P., Gupta, S., & Rajan, B. (2024). Generative AI in marketing: Promises, perils, and public policy implications. *Journal of Public Policy & Marketing*, 0(0). <https://doi.org/10.1177/07439156241286499>
- Lim, C. V., Zhu, Y.-P., Omar, M., & Park, H.-W. (2024). Decoding the relationship of artificial intelligence, advertising, and generative models. *Digital*, 4(1), 244–270. <https://doi.org/10.3390/digital4010013>
- Mandasari, B., Basthomi, Y., Hastomo, T., Afrianto, Hamzah, I., & Aminatun, D. (2025). The snapshots of Indonesian pre-service English teachers' perspectives on integrating technology-based tools to rural schools. *Voices of English Language Education Society*, 9(1), 42–57. <https://doi.org/10.29408/veles.v9i1.27965>
- Oktarin, I. B., Saputri, M. E. E., Magdalena, B., Hastomo, T., & Maximilian, A. (2024). Leveraging ChatGPT to enhance students' writing skills, engagement, and feedback literacy. *Edelweiss Applied Science and Technology*, 8(4), 2306–2319. <https://doi.org/10.55214/25768484.v8i4.1600>
- Pagani, M., & Wind, Y. (2024). Unlocking marketing creativity using artificial intelligence. *Journal of Interactive Marketing*, 60(1), 1–24. <https://doi.org/10.1177/10949968241265855> (Original work published 2025)
- Skubis, I., & Kołodziejczyk, D. (2024). *Human vs ChatGPT – Language of advertising in beauty products advertisements*. CRC Press. <https://doi.org/10.1201/9781003566441>
- Vajjala, S. (2024). Generative artificial intelligence and applied linguistics. *JALT Journal*, 46(1), 55–76. <https://doi.org/10.37546/JALTJJ46.1-3>