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RESEARCH PAPER

A Multimodal Analysis of Human-Generated and Machine-Generated Advertisements in Pakistan

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ABSTRACT

This research aims to investigate the multimodal analysis of both Pakistani human-generated and machine-generated advertisements through visual and textual analysis. Advertisements have been defined by many scholars as how they play a huge role in shaping identity and helping people communicate their ideas. Several studies have been conducted comparing human-created ads and AI-created ads separately. However, the study used a qualitative yet comparative research design to explore the matter comprehensively. This research study chose 40 advertisements in total, comprising 20 human-generated advertisements taken from Social Media Platforms and 20 machine-generated advertisements taken from ChatGPT4 and DeepSeek. The study incorporated both English and Urdu-language-based advertisements. Furthermore, the study used Python and its libraries to analyze the linguistic and visual expressions in the advertisements. Conclusively, the findings showed that human-generated advertisements took control over machine-generated advertisements in terms of emotional resonance, cultural and social relevance. In total, the research suggested that AI had still had zero capacity to replace cultural insight and emotional connection ability.

| **KEYWORDS** | Multimodal Analysis, Comparative Analysis, Human-Generated Advertisements, Machine-Generated Advertisements, Visual And Textual Analysis |

Introduction

The Advertising plays a critical role in influencing the behavior of consumers, shaping cultural perspectives, and driving economic growth (Kress & van Leeuwen, 2006). Advertising is a powerful means of communication by brands, agencies, and governments to convey messages, sell products, and leave lasting impressions on their audiences. The advertising sector has evolved significantly over the decades, from television and print advertising to digital and social media advertising. This has introduced new technologies and techniques, such as the application of artificial intelligence in advertising. Previously, experts, such as marketers, graphic designers, and copywriters, produced ads using creativity, cultural sensitivity, and market information to craft interesting and persuasive advertisements. If it is mentioned to someone that a few years ago that AI is going to take over our marketing sector, nobody would believe. However, technology has resulted in an explosion of machine-created ads that employ AI algorithms and data-driven approaches to produce ad content.

Advertisements have been defined by many scholars and linguists that how they play a huge role in shaping identity and helping people in communication. For instance, Rehman et al. (2019) stated that commercials act as a means of information help people

communicate to others and pursue their attention to buy products. AI- generated ads are gaining popularity as they can produce a large amount of content within a short period of time, personalize messages, and optimize ads based on consumer data and insights (Wilson et al., 2024). AI-generated ads can learn consumer behavior, forecast trends, and automatically modify content to receive more engagement. In linguistics, advertisements play a crucial role in terms of language use in multiple modes of communication. For instance, it explores how commercials affect language use starting from word level to a variety of linguistic styles and choices. It also shapes one's identity, reflecting some cultural values and norms through the use of language choices. Besides this, advertisements also explore some interpersonal relationships creating relationships between consumers, brands and products through the use of effective and persuasive linguistic choices and styles.

Several studies have been done comparing human-created ads and AI-created ads separately. For instance, the studies just compared human-generated advertisements neglecting the importance of AI or machine-generated vs. human- generated advertisements comparison. No study has compared the two with each other. That lack of research was the main reason for carrying out this study, to compare and contrast the two ads and see the similarities and differences using different methods. Additionally, the primary reason to conduct this research could be to address the research gaps that existed in previous studies, giving a systematic contrast between both types of advertisements. Using a wide range of methods and tools, i.e. coding of advertisements using modern software and tools, the study would explore the similarities and differences of both ads, analyzing various linguistic strategies.

Literature Review

Ibrahim (2022) conducted a research study employing the three metafunctions of Kress and Van Leeuwen theory. The first metafunction of the theory is the ideational meaning which deals with the representations of the world including the ideas, objects events, etc. As far as the second metafunction is concerned, the scholars introduced interactional/interpersonal meaning which includes three aspects of interaction i.e. contact or gaze, social distance, and attitude. Contact or gaze includes demand or offer, social distance includes further three factors like intimate, social or impersonal, and attitude includes involvement, detachment and viewer power and equality etc. The very last metafunction was compositional/textual meaning which refers to the way the language is structured and organized to convey a message. This element includes several features like information value, salience, and framing.

Khalid et al. (2019) conducted in the vicinity of Lahore, Pakistan which explored a detailed and comprehensive analysis of Billboard commercials. The basic purpose to conduct this study was to investigate and examine the hidden ideologies being used in the Billboard advertisements. As far as the methodology is concerned, the authors used a qualitative approach to explore the matter comprehensively. Besides this, Kress and Van Leeuwen's theoretical framework (1996- 2006) was used to analyze the socio-semiotic approaches used in advertisements. The study used a descriptive yet qualitative approach as a research design to examine both socio and semiotic approaches.

Moreover, the sample included four billboards in the vicinity of Airline Society Lahore, Pakistan while employing the strategically framework suggested by Kress and Van Leeuwen (1996-2006) to analyze the various aspects of advertisements. There were type different kinds of billboard advertisements and jubilee life insurance

advertisements were also the part of multimodal analysis. The billboard advertisements were chosen according to the criteria of multimodality recommended by Zhu (2007). Apart from observing the implied message, the researchers also found out that there are several strategies and semiotic approaches used to convey those hidden and implied meanings and ideologies i.e. linguistics elements and visual approaches. The study also focused on consumer engagement that how advertisements often attract the attention of buyers using attractive language and imagery.

Additionally, the research explored the idea of socio-semiotic approach comprehensively, including all the multimode of advertisements. For instance, the study examined Kress and Van Leewen's idea of multimodality while incorporating different approaches. The study noticed how the use of effective and attractive billboard advertisements often shape and reflect societal attitudes towards social status, consumerism and materialism. Although the study was done comprehensively covering every aspect of socio- semiotic approach, however, it is limited to some extent. For example, the sample size of this paper was quite smaller. The major focus was on mere one type of advertisement i.e. billboard advertisement. Conclusively, the study provided a detailed yet comprehensive observation and analysis of billboard commercials to find out the implied ideologies used by the advertisers to capture the audience's attraction in Lahore.

Irshad et al. (2023) conducted a research study related to multimodality named "Socio-Semiotic Analysis of Billboard Advertisement Through Multimodality Theory". The study provided a detailed analysis of billboard analysis covering each aspect of multimodality theory. The basic aim of the study was to explore a comprehensive analysis employing a multimodal approach specifically a socio- semiotic theory. This study was done in Pakistan to investigate the social, semiotic, and linguistic choices made by the advertisers in billboard advertisements.

The study explored the previous studies extensively determining the role of advertisements i.e. Billboard advertisements. Moreover, the study also explored how advertisements convey a powerful message to the target audience through the use of persuasive language. The main purpose of selecting billboard advertisements was obvious they serve as a powerful means of communication at every level including local and international businesses as well. As far as the methodology of the study is concerned, the study used a qualitative approach to investigate the multiple modes used in the advertisements. The sample was selected conveniently by photographing billboard advertisements. The study collected five advertisements in total for the analysis purpose. So, the sampling technique was quite convenient and the collected data was then examined using Kress and Leeuwen's multimodality theory, analyzing the semiotic and linguistic features of the advertisements. Furthermore, the study used a socio-semiotic theory formulated by Gunther Kress and Van Leeuwen (2006). Apart from this, several multimodal features were analyzed in billboard ads which included some gestural elements, visual, verbal, and spatial features, etc.

The scholars of the study revealed that there is a system in the advertisements that if formed by the interaction and combination of linguistic and semiotic choices plays a huge yet powerful role in the marketing of the billboard advertisements. The study provided a solid base for future research in the area of multimodality in terms of advertising analysis.

Moin Fatima conducted a research study related to multimodality on the topic "An Educational Insight of Media Discourse in Pakistani Print Advertisements: A Semiotics Study" in 2021. The study offered an in- depth yet extensive analysis of advertisements using a multimodal framework. The basic purpose of the study was to reveal the message through the use of connotative and denotative meanings by the advertisers. As far as the methodology of the study is concerned, the researchers used a qualitative approach to explore the semiotic study comprehensively. Besides this, the authors used Roland Barthes (1970) theory of Semiotics to evaluate the media discourse of print advertisements. For the purpose of sampling, the scholars used print advertisements in the form of magazines and then they implemented the semiotic approach to unleash the usage of both surface-level and deep-level meanings from the given content conveyed through the use of commercials. The researchers selected six Pakistani advertisements from the year 2015-2019 having the multiple categories to present an obvious picture in front of the audience.

The study gave a detailed analysis of Najafian and Dabaghi (2011) to find out the hidden language used in advertising in the semiotic approach. Besides this, they found that such meanings are qualitative in nature, as the target audience can interpret those meanings easily through the wide context being offered in the commercials. Since the study dealt with the semiotic analysis of print advertisements to generate meaning, the scholars observed several techniques of semiotic approach which included the usage of taglines, color scheme, and characterization etc. They used Barthes' idea of sign and signifier to analyze the commercials in the cultural context. Moreover, they noted that each sign has its own significance and uniqueness and each sign adds meaningful message to one's cultural context.

Furthermore, the study revealed that the basic agenda of context-specific advertisements is to familiarize people with their own culture so they have a better shared understanding among each other in terms of their culture representation. It is obvious that this study was conducted extensively exploring various aspects of multimodality and semiotics while using references of historical scholars to have an in-depth analysis of print advertisements, but the study has some limitations. Starting off with the first limitation, this paper used a very tiny size of sampling. For instance, the authors used a very small amount of advertisements for evaluation. Also, the researchers used just the one type of advertisement i.e. Pakistani print advertisements. However, this study offered a solid foundation to comprehend the complexities of commercials in the context of Pakistani culture.

Khalid et al. conducted a research study on the topic "A Multimodal Discourse Analysis of Housing Projects Advertisements in Pakistani Print Media" in 2020. The study used the idea of analyzing print advertisements based on housing projects in the context of Pakistan. The basic aim of the study was to construct the meaning of multiple layered print advertisements used by the advertisers. The authors incorporated several factors while conducting this study which included the commodification of youth, class consciousness, and stereotypes related to gender specification. Besides this, this study employed an extensive qualitative approach to explore the multiple modes used in the print advertisements. The scholars used Kress and Van Leeuwen's (1996) socio- semiotic approach to analyze the commercials extensively. As far as the sample of the study is concerned, the scholars selected ten different print commercials related to housing projects from different genres i.e. newspapers, magazines, brochures, and magazines. In addition to this, the study used Critical Discourse Analysis as another methodology to view the language in relation to the cultural context. The study chose well-known

societies like DHA to promote their idea of luxury and exclusivity while neglecting the other sections of the society.

Moreover, the study's result showed that print advertisements like housing projects often reflect elite class consciousness, which is based on exclusion. The study revealed that the advertisers majorly incorporate some visual and linguistic elements including color scheme, taglines, typography, font, imagery and characterization etc. to promote exclusivity and luxury of the elite class people. Besides this, the study's major emphasis was on the gender specification where the roles are predefined by the stereotypical society i.e. the women are supposed to play a domestic role while doing household chores and men are considered as the breadwinners of the family. It was found that the idea presented in the print commercials often reflect the traditional gender roles. Therefore, it was noted that such representations disseminate societal attitudes towards gender specification and mostly target the existing power dynamics.

As far as the limitations of the study are concerned, it has a very small sample size as it just focuses one type of advertisements i.e. housing projects commercials. Although the study was conducted extensively including a detailed analysis of semiotic approach, however, it was just limited to the Pakistani context. Besides this, this study gives a solid foundation to comprehend the complexities encountered during advertisement's analysis.

Rizvi et al. conducted a research paper on the topic: A Multimodal Discourse Analysis of E-Advertisement Visuals" in 2020. The paper's primary focus was to explore the linguistic and visual elements used in E- Advertisements. The researchers primarily noted the attractive and persuasive modes used by the advertisers to note the influence of consumers, including both buyers and viewers. The scholars of the study used Multimodal Discourse Analysis as a theoretical framework which was developed by Kress and Leeuwen (1996). The purpose of employing such a theoretical framework was to analyze the collected data comprehensively. As far as the sampling of the study is concerned, the authors collected data from six different e-advertisement visuals for the data analysis. Besides this, they chose data from various online shopping applications and sites using a random sampling method. Moreover, the study noted several semiotic resources in the commercials focusing on the characters, font size, boldness, symbol, signs and some other visual factors. Resultantly, the study found that there is a range of attractive and persuasive modes used by advertisers to influence their viewers or buyers. However, the paper also revealed that the advertisers use three dominant discourses to attract the audience. Furthermore, the study used Halliday's concept of Meta functions which include all three features like ideational, and interpersonal, and textual. According to him, ideational tells something about the world, interpersonal is the interaction between the participants and textual includes different thematic devices. (Adami, 2015) Apart from this, the scholars of the study also revealed the tactics and techniques employed by the advertisers to promote their products. For instance, the study found that they often emphasize, repeat, compare, and contrast the products to influence or draw the attention of buyers or viewers. Furthermore, a variety of linguistic and visual features revealed by the study which was often used by the advertisers for their product promotion. The study observed that those features include slogans, images, headlines, and taglines to convey their implied meanings and to convince the audience.

Conclusively, the researchers extensively conducted the paper pointing out some most attractive and persuasive modes employed by advertisers to convince their audience. Although the study was conducted comprehensively including all the visual

and linguistic elements, however, it was limited to some extent. For instance, the sample size of the study was quite small as the scholars just took six e-advertisements focusing on just one type of advertisement.

Zubair et al. (2023) ensure that advertisers use persuasive language to convince the audience to buy laundry detergent products. Moreover, it was done to decode the implied meaning conveyed through the use of some linguistic and visual elements. As far as the methodology of the study is concerned, the authors of the paper used a qualitative approach to analyze the detailed study. However, they used multimodal discourse analysis as the theoretical framework to study the multiple modes used in detergent-based commercials. As per sampling, the study selected a corpus of 20 laundry detergent commercials for the purpose of analysis. Furthermore, the advertisements were chosen from Pakistani television channels between the era of 2015 to 2018. Wadhawan (2014) stated that such studies are used to explore the hidden agenda of advertisers who strive to present their products as the best products in the competitive market while incorporating multimodal and persuasive strategies to influence consumer behavior.

Resultantly, the researchers found that the advertisements used a variety of linguistic and visual strategies to negotiate and convey their meaning. Additionally, the scholars highlighted a range of visual strategies including images of modern appliances, happy families and clean clothes to create a sense of cleanliness and modernity among the target audience. Besides this, the study also noted some linguistic features employed in detergent advertisements which include the use of characterization, taglines and slogans etc. which reinforced various discourses. Although the study was conducted comprehensively, focusing on the social, cultural and traditional aspects of advertisements to stay in connection with the target audience, however, it was limited to some extent. For instance, the study comprised a very small sample size as it analyzed and focused on only one kind of advertisement i.e. laundry detergent advertisement.

Mustafa & Ameen conducted a research study titled: "Semiotics and Gender Representation in Pakistani TVCs: Unraveling the Hidden Messages" in 2020. The study highly focused on the gender representation in commercials presented by television. The basic purpose of the study was to explore the role of gender being presented by the advertisers in TVCs. Concerning the methodology of the study, the research used qualitative research design to explore the matter comprehensively. Besides this, the researchers used a semiotic theoretical framework by Gillian Dyer (1982) to observe and study the use of signs and symbols. As per sampling, the study analyzed seven television advertisements taken from some highly prominent channels of Pakistan. The nuanced analysis was done by the researchers of the advertisements taken from different television platforms to align the visual and physical representation to the already existing sociocultural values. The authors further discussed how both men and women are presented in televised context in Pakistani culture offering either same or different kinds of advertisements. They conducted the analysis into two stages with various factors i.e. age, appearance, body structure, eye contact, pose, clothes and props and setting etc.

Concerning the results, the researchers found that the content being used in Pakistani advertisements often reject the patriarchal ideologies and influence the target audience to have gender equal equality. Moreover, the authors of the study observed that advertisements challenge the predefined stereotypes of the society with respect to genders. Apart from this, the study also noted that there is a range of semiotic resources

being employed by the television commercials which include visual metaphors, symbols, icons and other linguistic and visual factors etc.

Conclusively, the researchers focused on the importance of cultural and social context within the vicinity of Pakistan. For instance, the study explored the role of the culture and society that shape perceptions of the people about traditional stereotypes pf gender. As far as the limitations of the study are concerned, the paper just focused on kind of advertisement taken form well-known Pakistani channels to promote gender equality and to challenge gender stereotypes. Furthermore, this study used a very limited sample size i.e. seven advertisements from television. Although the study was conducted extensively and comprehensively covering several aspects of multimodality and semiotic approaches, but it was limited to some extent in terms of the sample size and methodology used.

Soleymani et al. (2017) conducted a research study related to Multimodal sentiment analysis titled as: "A Survey of Multimodal Sentiment Analysis" in Pakistan. The basic purpose of the study was to analyze the emotions of the audience by conducting a detailed survey. The researchers of the study provided a comprehensive outline of the updated multimodal sentiment analysis. The basic aim of the study was to disclose the multi-layered attitude that an entity holds i.e. image. The scholars of the study selected a large text-based corpus that relies on dictionaries and machine learning models for the current text-based sentiment analysis. Moreover, such machine learning models and dictionaries learn sentiments from large text-based corpora. However, with the arrival of social media, it has become easy to analyze the sentiments and emotions of text-based data. Besides this, the study also focused on the transcript and textual content for the sentiment analysis.

Furthermore, the authors of the study reviewed the current changes and developments in multimodal sentiment analysis in a variety of domains. For instance, they reviewed spoken content, images, videos, and blogs, etc. Apart from this, the study also examined the interaction between human-machine and human vs. human. They also highlighted the hindrances that are faced while conducting a multimodal sentiment analysis. Resultantly, the study found that text-based sentiment analysis is quite traditional and provides inaccurate results compared to multimodal analysis. It observed that multimodal sentiment analysis is useful in providing the data and results more accurately and comprehensively. Although the study was conducted comprehensively, however, it was limited to some extent in terms of multimodal sentiment analysis. For instance, the scholars of the study highlighted the fact that there is a need for detailed research on the recent changes and development of multimodal sentiment analysis that integrates multiple modes effectively. Moreover, the study also highlighted that most of the recent approaches rely on manual annotation of data which is quite expensive and a slow process as it takes time.

Qayyum & Ali (2024) conducted a research study on the topic "Notion of the Beauty in the Selected Pakistani Advertisements: A Multimodal Critical Discourse Analysis". The study was conducted to analyze the advertisements using multiple modes of language. The study was interesting as it was conducted in the vicinity of Pakistan where the notion of beauty is considered as a s subject of interest. The study showed how beauty- based advertisements influence customer purchasing behavior. As far as the theoretical framework is concerned, the study employed Multimodal Critical Discourse Analysis (MCDA) to highlight the key elements that play a huge role in the construction of beauty. The data was collected from a social media platform i.e. Instagram. The study

also used the Three-Dimensional Model of discourse analysis of Fairclough (1995) to explore the relationship between language, power and the context used in the advertisements. Apart from this, the scholars used another approach to explore the matter comprehensively and the model was Grammar of Visual Design introduced by Kress and van Leeuwen (2006). This theory was selected to analyze the visual features of beauty advertisements. Additionally, the study employed a qualitative research design for an in-depth analysis of the ads. The study used purposive sampling selecting four advertisements from several distinct Instagram pages. Those advertisements were analyzed on two levels i.e. linguistic and visual. Moreover, the linguistic analysis was done through the use of Furlough's model, while Kress and Van Leeuwen's framework 'Grammar of Visual Design' was chosen for the visual analysis of ads. As per findings, the research showed that a variety of discursive techniques were used by the company advertisers to promote their beauty-based products. For instance, those techniques included self- representation, surreal representation, scientific evidence celebrity endorsement, etc. Conclusively, the study found the crucial role of language and images in Pakistani advertisements in constructing the notion of beauty. For instance, these two factors highly influence customer's purchasing behavior through the use of attractive discursive tactics. Although the study was conducted thoroughly and incorporated several theories, however, it was limited in its sample size which was just four advertisements. Moreover, the advertisements were just taken from a single source i.e. Instagram as it could collect data from other social media platforms too to analyze the ads comprehensively. The study is highly relevant in a way as it offers a visual and linguistic analysis of Pakistani beauty-based advertisements. It also offers linguistic and discursive strategies to analyze the ads extensively.

There is little research comparing the two approaches directly using various tools of analysis, particularly for Pakistani ads. One of the significant research gaps is in understanding how cultural appropriateness and emotional resonance shape ads. Human designed ads, such as Skin White Soap's slogan "Khubsoorti and Sachai" (Beauty and Truth) and Zubaida Appa's Whitening Soap's slogan "اب گورا ہوگا پاکستان" ("Ab gora hoga Pakistan" / "Now Pakistan will be fairer"), have good, amazing response from Pakistani people. These ads use cultural symbols, local terminology, and common narratives to build a strong connection with consumers. Machine-designed ads, however, would focus on data-driven solutions and might lack cultural context awareness and emotional narratives. This gap needs to be researched to figure out whether AI-designed ads can match the cultural sensitivity and emotional resonance of human-designed ads in Pakistan.

Material and Methods

Research Design

The study employed a qualitative research to incorporate several strategies for the interpretation of cultural contexts, persuasive strategies, symbolism, etc. Those strategies and methods include discourse analysis, semiotic analysis, and multimodal analysis. For instance, sometimes there are some specific emotions raised by the choice of language, color scheme and images, they cannot be expressed by numerical representations. Similarly, advertisements comprise of some cultural associations which cannot be identified quantitatively. That was the reason to use qualitative study to decode or comprehend such methods.

Sampling and Population

The study chose 40 advertisements in total comprising 20 human-generated and 20 machine-generated advertisements. This purposive selection technique was ensured to maintain the relevance, prominence, and diversity of advertisements. Additionally, all the advertisements including both human and machine-generated ads belonged primarily to the same category (cosmetics) from well-known brands in Pakistan. The study incorporated both English and Urdu language-based advertisements. As far as human-generated advertisements are concerned, they will be taken probably from several social media platforms like Facebook and google and some other advertising agencies (graphic designers and content creators). However, machine-generated advertisements will be taken from image-generated machine-based tools like AI/ChatGPT4 and Deepseek. The study categorized the population into two main groups; human-generated advertisements and machine-generated advertisements. The advertisements were taken from platforms that were produced in recent years to align with contemporary trends. The population size was quite limited, taken from various social media platforms; however, the sample was quite large comparatively in size i.e. 40 advertisements in total (20 human-generated and 20 machine-generated advertisements) to ensure data manageability and an in-depth analysis.

Research Tools

The study used Python to analyze the linguistic and visual expressions in the advertisements. The Python code will be used to analyze advertisements based on text as well as visual features. Moreover, it will begin by installing the necessary libraries, including OpenCV for image processing (visual analysis), NumPy for numerical calculations, Matplotlib and Seaborn for plotting, TextBlob for text sentiment analysis, Hazm for processing the Urdu language, and NLTK for natural language processing. These libraries hold the necessary functionality to process images, detect faces, detect colors, and read text data from advertisements. These libraries are imported into the script so that they can be used for the whole analysis. Firstly, machine-generated ads were taken followed by human-generated advertsemnets for analysis. For instance, the study analyzed 20 AI adds one by one and stated results in the basis of Social and Cultural effect (by analyzing advertisement colors), Facial engagement (for character engagement analyzation), Sentiment score (for analyzing textual engagement Scale: -1, 0, 1 , low, neutral, high).

Theoretical Framework

This research employed mainlyMultimodal Discourse Theory (MDT) by Gunther Kress and Theo van Leeuwen. As per the framework, the study examined both visual and textual elements of advertisements distinguishing how different and multiple modes of communication i.e. texts, images, font and color scheme function and work together to convey meaning. Similarly, the framework examined primarily the linguistic signs being used in both kind of advertisements within social and cultural contexts to decode the local meaning. This theory was backed by Michael Halliday's Systemic Functional Linguistics who introduced three main metafunctions i.e. representational, interactional and compositional into the language making Halliday's theory of Functional Grammar as its foundation. Metafunctions theory is another name for systemic functional linguistics (SFL). The theory wascomprised of three metafunctions namely ideational/representational meaning, interactive meaning, and compositional meaning. The first metafunction of the theory was the ideational meaning which deals with the

representations of the world i.e. images including the ideas, objects events, etc. As far as the second metafunction is concerned, the scholars introduced interactional/interpersonal meaning which includes three aspects of interaction i.e. contact or gaze, social distance, and attitude. Contact or gaze includes demand or offer, social distance includes further three factors like intimate, social or impersonal, and attitude includes involvement, detachment and viewer power and equality etc. The very last metafunction was compositional/textual meaning which refers to the way the language in images is structured and organized to convey a message. This element includes several features like information value, salience, and framing.

Results and Discussion

The analysis of the ads has been discussed step by step using multimodal analysis and the theory of Kress and van Leeuwen. First, the study has been related through each research question individually and compared the theory with the results that have been gathered from the ads. This has helped to understand how different results of advertisements reflects the multimodal components of an ad. After that, it has concluded the discussion part comprehensively. Next, it has compared the results of AI and Human ads, using the cultural and social impact of the ads based on our results. This is how the study has analyzed all the three results of analysis and eventually concluded them. After that, this study has crated create a table that lists the key differences and similarities between them. The differences has explained the difference between AI and human ads, while the similarities have been introduced what both types of ads have in common.

Once the differences and similarities of the advertisements have been done, it has gone through each one in detail discussing what each point means. Finally, after completing all the discussions, the study has summarized everything in a conclusion. This part has clearly stated that how AI and human advertisements differs from each other.

The first question of this research has asked for the dissemination of meaningful content in advertisements. Advertisements are effective communicative devices, combining textual and visual elements to construct impacting messages. In the case of AI-generated and human-generated ads, how these elements combine can affect audience perception and engagement. Based on Kress and van Leeuwen's multimodal theory, meaning construction in advertisements is not merely a matter of what is said but also how visuals, layout, and semiotic resources combine to construct meaning.

In ads generated by AI, the text is usually focused for engagement through algorithms that choose influential keywords and phrases. The texts are usually centered on high-impact, concise messages, often using adjectives such as "revolutionary," "instant," and "effortless" to generate a sense of urgency. Like in the results section, AI ads have very concise messages but they are persuasive enough to attract people. For example, an AI-generated slogan like "Flawless Beauty Instantly" uses universally appealing language but lacks cultural specificity, whereas human-created slogans incorporate localized expressions, improving relatability to people. AI ads are more of modern and object oriented ads which can grab public attention because of its sharp objects, images and bright color schemes. Visually, AI-created ads tend to favor symmetry, bright color, and idealized looks. These are all consistent with Kress and van Leeuwen's theory— where some visual aspects are emphasized to grab attention.

The human-created ads are more linguistically diverse, usually including cultural references, influential expressions, and emotional storytelling. Human created ads like in this case are more engaging because they reflect some sentiments that are human like and people can relate to them more than AI ones. Ads created by humans tend to be more organically composed, sometimes with less refined images but deeper contextual value. This is a more genuine reflection of brand identity and consumer relationship because people can relate to them more based on their day to day life. Human ads include widely known local celebrities, to whom people relate themselves thus, improving the connection between the ad and the public which AI ads lacks. This makes the distinction that while AI can make language optimal for its effectiveness, human-created text is perhaps more deep in culture and context.

Now the study has discussed Q2 which asks for impact of cultural and social factors on the effectiveness of human-generated and machine- generated advertisements. The cultural and social factors play a significant role in shaping how audiences perceive advertisements. In Pakistan, advertising is deeply influenced by cultural norms, traditions, and religious values. which can significantly impact how messages are received. The analysis of AI and human- generated advertisements highlights key differences in how these cultural and social elements are incorporated by showing engagement of ads to public through human interaction ads which have human interaction tends to be more engaging than normal. In the results section, human adds have scored higher on engagement factor than AI ads, which tells that human generated ads are more attention seeking and that is the ultimate goal of an advertisement.

Human-generated advertisements often include culturally familiar settings, traditional attire, and language that aligns with local customs. Like in our Pakistani ads 'maa banaye jard se mazboot' reflects our culture emphasizing the role of mother in shaping us. These advertisements also incorporate moral or ethical narratives that relate with collective social values. AI-generated advertisements, however, sometimes struggle with cultural reflection. While they may effectively simulate visual appeal and linguistic persuasion, they often lack the deeper socio-cultural resonance found in human-created content. For example, AI- generated ads may fail to fully capture the sense of humor, honor, and religious sensitivity that are crucial in Pakistani advertising. With all these AI ads lacking culture it is very difficult for people to relate to them. Thus it lacks to convince users to buy the product. Now the remaining section has discussed the results in the light of question no 3 which is how do the semiotic features distinguish between machine-generated and human-generated advertisements in Pakistani advertising products? This question has been discussed in further details.

Semiotic Characteristics Differentiating Machine-Generated and Human-Generated Advertisements

The semiotic difference between human-generated and AI-generated advertisements can be explained in terms of varying attributes, i.e., image structure, textual consistency, and symbolic communication.

Image Composition

As seen in the results, AI ads used more red as background colour making it stand out and grab attention whereas human generated ads are more of natural and calm vibes like green and blue colours, to give a realistic touch to the advertisement.

AI-generated advertisements used highly structured and symmetrical composition with smooth motion and proportioned elements. Ads created by humans, in contrast, have a more diverse range of compositions, sometimes even deliberately non-symmetrical, to give a more organic, human-like, and familiar look so that they look like they belong to the Pakistani culture. Also so that they can be aligned with people sentiments.

Text-Image Relationship

Computer-generated ads generally showed a literal, near one-to-one correspondence between images and words. The images and words supported one another in a simple, unambiguous way, optimizing clarity and concentration; their text matched with the visuals to complement each other like in our AI ads text and pictures blend together very well. Whereas, Human-generated ads may contain metaphoric or story images, local celebrities which allow for more relatability and affective involvement like in our Human generated ads there are multiple celebrities in different ads convincing public the benefit of buying that product. Human adds also had Urdu text which was easily understandable by Pakistani people and reflected Pakistani culture more.

Symbolism and Cultural Context

Human-generated ads had culturally appropriate symbols—such as traditional motifs, religious symbols, or local idioms like 'look change tou luck change', 'maa banaye jad se mazboot'—that were interpreted in the social context. AI- generated ads did not properly inherit culturally based references and thus may appear less authentic to the people and not reaching its ultimate goal to sell products.

Result Comparison of Machine Vs Human Generated Ads

The multimodal analysis of advertisements using Kress and van Leeuwen's theory provided three key graphical insights: Color Density Histograms, Engagement Levels (using facial engagement), and Sentiment Analysis. These results highlight how AI-generated and human- generated advertisements differ in visual strategies, audience engagement, and emotional appeal. Below is a detailed comparison of each aspect from our results.

Color Density Histogram

The Color Density Histogram showed how different types of advertising use color to be seen and to communicate meaning.

AI-Based Ads: Dominant Use of Red

The analysis showed that AI-generated advertisements mostly used the color red in the RGB color model. This told that AI prioritized red for its strong visual impact, sense of urgency, and association with excitement and energy. While this increases AI ads visually (high-contrast and aesthetically pleasing), it could also make them look a bit generic or impersonal.

Human-Crafted Ads: Use of Red and Green More

Human-made advertisements used red and green in balance to produce a traditional and more natural color scheme. Green is traditionally linked with progress,

peace, and cultural relevance in Pakistan and thus its use in human ads was noticeable. This is a sign that human designers used colors intentionally that align with local cultural and emotional norms instead of attempting to maximize visibility.

Engagement Levels

Engagement measures how well an advertisement captures audience interest and encourages interaction.

AI-Generated Advertisements

The analysis revealed that AI-generated advertisements had lower engagement levels compared to human-generated ones. These factors often lack emotional depth or cultural relevance, making them less relatable to audiences. AI- generated ad did not have a real celebrity presence, which might reduce its impact on real human emotions and relatability.

Human-Generated Advertisements

On the other hand, human-generated advertisements showed higher engagement. This was because they used a more natural and relatable tone that relates with audience. Use of familiar storytelling techniques, humor, making them memorable and shareable. A presence of real celebrity, to connect to the audience more deeply Overall AI- generated ads capture attention quickly but struggle to maintain deep audience engagement.

Sentiment Analysis

Sentiment analysis helps determine whether an advertisement brings positive, negative, or neutral emotions in its audience through text and slogans. This is important in understanding how effective an ad is in influencing consumer behavior.

The results showed that AI-generated advertisements had lower sentiment scores overall. AI ads were emotionally neutral, focusing on clear and direct messages rather than deep emotional messages. Where AI-generated text was grammatically correct and structured, it often lacked the authenticity that human language naturally conveys. On the other hand, human-generated advertisements had higher sentiment scores, showing that they brought out stronger emotional responses, whether through happiness or excitement. They used storytelling and cultural references to create ads that feel genuine and relatable. Sometimes, they showed negative emotions like fear or guilt strategically in order to relate to the people's current situation.

Difference and Similarities

Table 1
Differences and Similarities between Human-Generated and Machine-Generated Advertisements

Difference	Similarity
Cultural representation	Purpose
Tone	Platform
Sentiments	Attention seeking
Colour Scheme	Target audience
Language	Product placement
Symbols	Adaptability

Visuals	Trend awareness
Message Delivery	Message clarity
AI ads were visually optimized, while human ads adds elements for storytelling.	Targeting Strategy
AI relied on machine learning, while humans consider behavioral psychology.	Branding
AI followed data trends, while humans added cultural and social movements.	Visual appeal
AI-generated ads were scalable easily, while human ads require manual effort.	Visual structure
AI ads optimized for clicks, while human ads focused on emotional appeal.	Multimodal elements

Differences

Each point has been discussed in detail in this section:

Cultural Representation

AI-generated ads were on data-driven algorithms, usually missing deeper cultural meanings. Human ads, on the other hand, reflected societal values, traditions, and emotions.

Tone

Human ads used emotional, persuasive, and engaging tones, while AI ads were generic and optimized for performance.

Sentiments

The sentiment analysis results showed that AI ads had lower sentiment scores, meaning they miss emotional depth. Human ads, on the other hand, had higher sentiment scores, showing their ability to bring out emotions effectively, such as happiness, trust, or nostalgia.

Color Scheme

AI-generated ads used more dominant, high-contrast colors (eg. red), while human ads used a mix of red and green, maintaining vibrancy with natural appeal.

Language

AI-generated ads often use focused and optimized text, Human-created ads used conversational, relatable language(Urdu) that resonated better with the audience, especially in the cultural context.

Symbols

Symbols in AI ads were seen to be general, whereas human-generated ads carefully selected symbols that had deep-rooted cultural or emotional value.

Visuals

Human advertisements focused on creativity, while AI-generated visuals prioritized engagement factors. Message Delivery. AI-generated ads delivered short

easily targeted slogans based on trends, whereas human ads relied on storytelling and emotional engagement, making them more engaging and relatable.

AI Ads Were Visually Optimized, While Human Ads added Elements for Storytelling

AI focused on perfect structure and color balance for engagement, while human advertisers added storytelling elements like facial expressions and cultural references, making the ad more personal.

AI Relied on Machine Learning, While Humans Considered Behavioral Psychology

AI analyzed user behavior based on large datasets, but human advertisers understood psychological behavior, such as subconscious triggers, humor, and empathy, which AI still struggles to copy.

AI Followed Data Trends, While Human Ads Included Cultural and Social Movements

AI-generated ads made their designs on predictions and engagement data, while human advertisers made their content with ongoing cultural and social trends, making their ads more relatable and impactful.

AI-Generated ads were easily scalable, while human ads required much effort

AI made multiple ads in seconds, making it ideal for large productions. Human-generated ads required creativity, revisions, and personal input making them more complex but often more unique.

AI Ads aimed for Clicks, While Human Ads Focused on Emotional Appeal

AI-generated ads are usually designed to get most engagement factors, such as clicks and views. Human ads aimed for emotional connections, which could create long-term brand loyalty rather than immediate reactions.

Similarities

This section has discussed the similarities of both human-generated and machine-generated in detail.

Purpose

Human-generated and AI-generated ads both sought to sell products, build brand equity, and facilitate interaction.

Platform

Both advertisements were displayed on the same platform, like social media, billboards, TV, and newspapers.

Attention Seeking

They were made to engage the attention of the audience through appealing images and strong messages, both AI and human beings.

Target Audience

Both human-made and AI-generated ads segment and target audiences by demographics, behavior, and interests to make them relevant.

Product Placement

Both forms of ads positioned products strategically in terms of images and stories to increase desirability and catch consumer interest.

Adaptability

Both AI-created and human-generated ads were adapted to keep up with trends, seasonal promotions, and customer preferences.

Trend Awareness

Ads, whether human-generated or AI-generated, reflected common trends in appearance and message.

Message Clarity

Both AI-generated and human-generated ads had simplicity and clarity in their messages to make it easy for the public to understand and to buy them.

Targeting Strategy

Both human and AI advertisers used trends from data to enhance campaign performance and used demographic information to specifically target the desired audience

Branding

Both AI and human generated advertising, promoted brand personality, stability, and recognition.

Visual Appeal

Both advertisements had attracting visuals in order to attract buyers as much as possible. AI used sharp colors for that and to some extent human ads also did it. Also it was led by catchy slogans to maximize engagement.

Visual Structure

Human generated and AI-generated ads both had structured formats, including typography, color palettes, visuals, and product placements.

Use of Multimodal Elements

Both AI and human-generated ads included text, images, and sometimes audio-visual components to enhance engagement and to get the attention of users as soon as possible.

Conclusion

Conclusively, the findings showed that human- generated advertisements took control over machine-generated advertisements in terms of emotional resonance, cultural and social relevance. Significant yet distinct changes were noticed in the differences and similarities of both types of advertisements. It was observed that human-generated advertisements could resonate with target audience's emotions and foster connections. In total, the research suggested that while AI had much potential in advertising, it still had zero capacity to replace human imagination, cultural insight, and emotional connection ability. Human-made ads continued to win in moving people, especially where culture was an influential factor like in Pakistan. The findings of this study indicated that AI ads had brighter and more saturated colors, particularly red, while human ads had both red and green. This means that AI-generated ads were trying to catch the attention of the viewer through their visual appeal, while human-generated ads used a different strategy. Human ads, on the other hand, had a higher sentiment score, eg, a higher emotional value. One of the differences that was clearly noticeable between the AI- controlled ads and the ads generated by human beings was that of engagement. Human- generated ads were more engaging since they embodied real emotions, real scenarios, and cultural relatability. These were the main reasons behind human ads being more engaging. AI-controlled ads were more uniform in tone. Though they were beautifully designed and properly formatted, they lacked the human touch that an ad needs in order to remember it. One of the greatest strengths of human-made ads was that they used real national celebrities. In most situations, individuals were highly affected by celebrities, and when a popular celebrity endorsed a product, the consumer was more likely to buy the product. AI-made ads could not use real celebrities in the same manner, which hindered their potential to build a strong emotional connection with the audience.

When comparing human and AI ad sentiment, a clear difference became apparent. Human ads employed more natural and engaging language, whereas AI ads were written more concisely and in a less rich emotional voice. AI writing was also less attuned to the social and cultural sensitivities of the human author. Human-authored ads possessed an emotional richness that caused consumers to feel close to the product. One of the most compelling reasons why human advertisements worked better in most instances was that they could make individuals identify with the message. Human commercials presented stories that individuals can identify with. When individuals viewed an ad that mirrors their experiences, values, or feelings, they identified with the brand. Identification with the brand generated a sense of trust and prompts individuals to purchase the product. AI commercials could not comprehend human feelings at a profound level.

In the future, AI is bound to become much better. As machine learning and natural language processing become better, AI may be able to factor in cultural and emotional elements more effectively in the future. If AI and humans work together, it will make advertisements more effective and humans can align their creative thinking to produce more accurate results. By combining forces in this way, even more effective advertising practices could be developed in the future. Audiovisual features of both kinds of advertisements could also be explored in the future for effective research.

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