

Exploring Korean University Students' Perceptions of English-Language Advertising for AI-Based Medical IT

Byungsun Kim¹ and Jei-Young Lee^{2,*}

¹ Catholic Kwandong University, Korea, Professor; bstesol@cku.ac.kr

² Catholic Kwandong University, Korea, Professor; jylee1231@cku.ac.kr

* Correspondence

<https://doi.org/10.5392/IJoC.2025.21.4.081>

Manuscript Received 4 June 2025; Received 23 December 2025; Accepted 26 December 2025

Abstract: *This study examines how Korean university students perceive English-language advertising for AI-based medical IT services. As AI-related medical technologies are increasingly promoted through English advertisements, it is necessary to understand how young consumers in a non-English-speaking context interpret and respond to such messages. This study employed Q-methodology to explore students' subjective viewpoints. Twenty-three university students participated in a Q-sorting task using 16 statements related to English-language AI medical advertising. The analysis revealed three perception types: Informed Optimists, Critical Realists, and Trusting Pragmatists. The Informed Optimists regarded these advertisements as innovative and informative but were not easily influenced by emotional appeals. The Critical Realists showed a cautious and skeptical attitude, questioning the credibility and clarity of the advertising content. In contrast, the Trusting Pragmatists tended to accept the advertisements positively and preferred clear, factual, and professional messages. Across all types, English was generally associated with technological advancement, while concerns about comprehension and accessibility were also evident. These findings suggest the importance of audience-sensitive and trustworthy communication strategies in AI-based medical advertising.*

Keywords: Korean University Students; English Language Advertising; AI-based Medical IT; Consumer Perception; Q-methodology

1. Introduction

The rapid advancement of artificial intelligence (AI) is significantly transforming the healthcare sector, accelerating the development and delivery of new medical IT technologies and services. Many of these AI-driven healthcare innovations are introduced to global consumers through advertisements crafted in English, which serves as the dominant language of science, technology, and international marketing.

Despite the increasing prevalence of English-language advertisements for AI-powered medical services, there remains a dearth of empirical research on how such advertisements are perceived and received by consumers in non-English-speaking countries. This gap is particularly concerning in the context of healthcare, where trust, accuracy, and emotional receptiveness play pivotal roles in shaping consumer attitudes and decision-making. Understanding how non-native English speakers interpret these advertisements is therefore crucial for expanding global market reach and formulating effective, culturally attuned communication strategies.

South Korea represents a compelling case for such inquiry. With a highly digitized society, rapid adoption of cutting-edge technology, and widespread smartphone penetration, South Korea offers fertile ground for the proliferation of AI-based healthcare marketing. In particular, university students—members of the digital native generation—represent a key demographic both as media-savvy consumers and as early adopters of technological services [1]. Their perceptions of English-language AI healthcare advertisements are likely to influence the broader acceptance and diffusion of these services within Korean society.

This study explores how Korean university students subjectively perceive and accept English-language advertisements for AI-based medical IT services. It focuses on their views regarding the utility, credibility, and

appeal of such ads, and investigates how these perceptions cluster into distinct reception types. Prior research on health-related advertising in Korea suggests that young consumers' opinions can vary widely—from enthusiastic interest to critical disbelief [2].

To identify these varied perception types and discuss their implications, this study employs Q-methodology—a unique mixed-methods approach developed by William Stephenson in the mid-20th century that systematically examines human subjectivity [3].

The research is guided by the following questions:

1. What are the distinct subjective reception types among university students regarding English-language advertising of AI-based medical IT, and what characterizes each type?
2. What commonalities or differences exist among these perception types in their view of AI-based medical IT advertising?
3. To fully understand these dynamics, it is essential to consider existing research on AI-driven advertising, healthcare communication, and the symbolic role of English in Korean consumer culture.

2. Theoretical Background

The advent of AI is transforming how advertisements are created and delivered. AI technologies enable marketers to analyze vast amounts of data and personalize advertising content in real-time. For example, AI-driven algorithms can tailor health product ads to individuals' interests or use chatbots to engage customers. These innovations promise more relevant and efficient marketing. However, consumer reception of AI in marketing is not straightforward. While companies embrace AI, consumers' perceptions of AI-based marketing can be mixed. Trust emerges as a critical factor – especially in healthcare, where personal well-being is at stake. Recent research highlights that *trust and acceptance remain a challenge* in deploying AI for health purposes [4]. Consumers may be wary of automated decisions or skeptical of claims made by an AI, affecting how they respond to advertisements for AI-based medical services.

Healthcare and medical marketing, even before AI, have unique challenges. Advertising of medical technologies or treatments must balance information and persuasion, all while maintaining ethical standards and accuracy. Consumers tend to demand credible, sufficient information in health-related ads and can be sensitive to any exaggeration or misuse of medical facts. Studies in Korea have shown that young adults segment into different groups in their reactions to medical information advertising – some focusing on product information, others showing disbelief or concern about misleading content [1]. In the context of AI-based medical IT, these issues of credibility may be amplified. On one hand, AI evokes a sense of cutting-edge innovation which might enhance appeal; on the other hand, the complexity of AI and potential unfamiliarity could raise doubts. Indeed, public perceptions of AI in medical care are still developing, with many people expressing caution about AI's role in sensitive tasks like diagnosis [5]. Thus, an advertisement for an “AI healthcare service” must overcome both general advertising skepticism and specific concerns about AI reliability.

Another important aspect in the Korean context is the use of English language in advertising [6]. It is common in South Korea to see English names, slogans, or content in ads for domestic audiences. English in Korean advertising often serves a symbolic function – it conveys modernity, sophistication, or globalism. Prior research found that Korean consumers generally find English-language content novel or exotic and appealing, even if they do not fully understand it. In technology and medical domains, English terms might signal that a product is state-of-the-art or scientifically advanced. This positive perception can enhance an ad's allure. However, the use of English might also pose comprehension challenges, potentially limiting the informational value for some viewers. Especially for a complex subject like AI-based medical IT, heavy use of English jargon could leave certain audiences behind. The net effect of English in these ads is therefore nuanced: it may attract attention and connote innovation, but it risks being less accessible. This study's focus – English-language ads for AI medical IT – sits at the intersection of these trends. It is a timely topic given that AI-driven hospital marketing is already active in Korea, with medical institutions adopting AI not just in practice but in their promotional strategies. Understanding how young consumers interpret and accept such ads can inform more effective communication strategies in the future.

Rather than functioning as independent dimensions, AI advertising, medical communication, and the symbolic use of English interact dynamically to shape audience perceptions of AI-based medical IT services. AI advertising provides the technological and representational frame through which innovation, automation,

and efficiency are foregrounded. Medical communication, in turn, introduces a distinct set of expectations related to credibility, ethical responsibility, and informational clarity, reflecting the high-stakes nature of health-related decision-making.

Within this intersection, English operates not merely as a communicative medium but as a symbolic resource. In the Korean context, English frequently indexes global expertise, scientific authority, and technological advancement, thereby reinforcing—or in some cases complicating—the perceived trustworthiness of AI-mediated medical messages. While English may enhance perceptions of professionalism and innovation, it can simultaneously limit accessibility and comprehension, especially when complex medical or technical information is involved.

Audience perceptions of English-language AI medical advertising thus emerge from the interplay of these three domains. When AI-driven innovation aligns with clear medical information and symbolically appropriate language use, advertisements are more likely to be received as credible and informative. Conversely, misalignment among these elements—such as technologically sophisticated messages delivered through linguistically opaque or medically vague content—may lead to skepticism or resistance.

This integrated perspective provides a conceptual foundation for interpreting the perception types identified through Q-methodology in the present study. The emergence of Informed Optimists, Critical Realists, and Trusting Pragmatists can be understood as distinct configurations of how individuals negotiate technological promise, medical trust, and linguistic symbolism in evaluating AI-based medical advertising.

3. Methodology

This study employs Q-methodology to effectively explore the subjective perception types of university students toward English advertising utilizing medical IT in the AI era. Unlike traditional R-methodology, which focuses on deduction, Q-methodology allows for inductive insight into subjectivity through statement sorting [7].

A Q-concourse was created using Korean news articles about English advertising in the medical IT field. These articles were collected from January to February 2024 through keyword searches such as “AI medical advertising,” “English-language healthcare ads,” and “university student reactions,” from sources such as Naver News, hospital websites, and online forums. From this material, a total of 24 statements were compiled to reflect a broad range of public discourse, and 16 representative Q-statements were selected for the sorting task.

The Q-statements were designed to represent a broad spectrum of viewpoints regarding English-language advertising for AI-based medical IT services. The statements addressed four major dimensions:

- (1) perceived credibility and trustworthiness of AI medical advertising,
- (2) informational clarity and usefulness,
- (3) emotional versus rational appeal strategies, and
- (4) the symbolic and practical role of English in understanding and evaluating medical information.

This balanced structure ensured that the Q-set captured both positive and negative orientations, as well as neutral and ambivalent perspectives, thereby enhancing the interpretive reliability of the resulting perception types.

Twenty-three university students (P-sample) participated in the Q-sorting process, and their responses were analyzed using the QUANL software to identify perception types. The data collection was conducted in April 2024 at a four-year university located in Gang-won Province, South Korea. The participants were 23 Korean university students (12 females and 11 males) enrolled in a general education course, with majors including nursing, media, education, and engineering. All participants were in their first to third year of study and had prior exposure to English-language media. Participants were selected through convenience sampling, and all voluntarily agreed to participate in the study.

The 16 Q-statements reflected a balanced range of opinions—positive, neutral, and negative. Q-methodology does not require a large P-sample, as it analyzes intra-individual rather than inter-individual differences. Hence, 23 participants were sufficient for this study. During the Q-sorting phase, participants ranked the statements on a 7-point scale from -3 (strongly disagree) to +3 (strongly agree). Rankings were numerically coded and analyzed. The data were then processed using QUANL for factor analysis. Figure 1 illustrates the sample sorting board and record sheet employed during the data collection phase, and Table 1 presents the Q-sort distribution template used to guide participants’ responses.

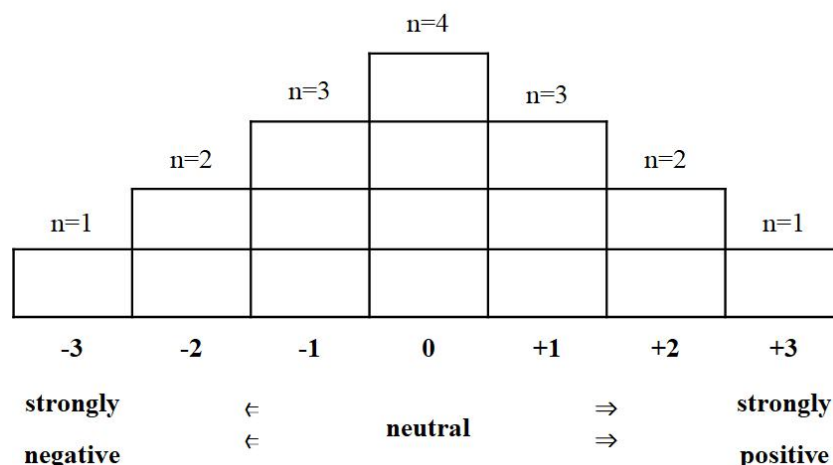


Figure 1. Sample sorting board and record sheet

Table 1. Q-sort distribution

	Most disagree - disagree			Neutral	Agree – Most agree		
Rank	-3	-2	-1	0	1	2	3
Score	1	2	3	4	5	6	7
Number of statement	1	2	3	4	3	2	1

4. Results

To identify the subjective types regarding the perceived utility and acceptance effect of English-language advertising utilizing medical treatment IT in the AI era, a Q-factor analysis was conducted. As shown in Table 2, the eigenvalue for Factor 1 was 3.9969, accounting for 17.38% of the total variance. Factor 2 had an eigenvalue of 3.2557, contributing an additional 14.16%, resulting in a combined explanation of 31.53% of the total variance. These values meet the conventional criteria for factor retention in Q methodology, suggesting that the extracted factors represent meaningful patterns in participants’ Q-sorts. The cumulative variance explained indicates a stable and interpretable factor solution for further qualitative interpretation.

Table 2. Eigenvalues and Variance Explained

CHOSEN EIGEN Values	3.9969	3.2557
PERCEPTAGES OF VARIANCE	.1738	.1416
CUMULATIVE	.1738	.3153

To examine the degree of relationship among the extracted types, correlation coefficients were calculated between each pair of factor scores. The results, summarized in Table 3, show that Type 2 and Type 3 were negatively correlated ($r = -0.637$), suggesting that these two types represent opposing perspectives on English-language AI-based medical IT advertising. In contrast, Type 1 showed negligible correlations with both Type 2 ($r = -0.009$) and Type 3 ($r = 0.109$), indicating a relatively independent perceptual orientation. These correlation values reinforce the distinctiveness of each type and validate the factor structure derived from Q-sorting.

Table 3. The relation between Types

	1 Type	2 Type	3 Type
1 Type	1.000	-	-
2 Type	-.009	1.000	-
3 Type	.109	-.637	1.000

As shown in Table 4, this indicates that Type 1 respondents are not emotionally impulsive buyers. Rather, they are rational and engaged, motivated by the novelty and informational quality of the ads. They are optimistic and analytical, but not easily swayed by promotional emotion.

Table 4. The statements and Z-scores of type 1

	Q Statements	Z-Scores
Positive	11. It feels fresh about English advertising using medical IT in the AI era.	2.03
	10. I think related products will sell better than those that don't about English advertising using medical IT in the AI era.	1.39
	9. The relevant knowledge has been improved through English advertising using medical IT in the AI era.	1.12
Negative	15. English advertising using medical IT in the AI era is insufficient in information for the target customer.	-1.11
	7. I have experienced the urge to buy products after watching English advertising using medical IT in the AI era.	-1.92

As shown in Table 5, This group is doubtful of the credibility of the advertisements and does not actively seek them out. While they acknowledge the potential of the medium, they are critical of how the message is currently delivered, reflecting a skeptical but technologically aware perspective.

Table 5. The statements and Z-scores of type 2

	Q Statements	Z-Scores
Positive	14. It's better to make it into an animation in English advertising using medical IT in the AI era,	2.55
	12. It's sad to produce various contents in English advertising using medical IT in the AI era.	1.37
	3. English advertising using medical IT in the AI era contribute to the opening of the century.	1.09
Negative	9. The relevant knowledge has been improved through English advertising using medical IT in the AI era.	-1.11
	1. English advertising using medical IT in the AI era give someone a sense of trust.	-1.39
	6. I see intentionally English advertising using medical IT in the AI era.	-1.45

This shows that Type 3 participants prefer factual, rational, and direct messaging. They trust the content and value clarity and professionalism over emotional or flashy appeal. This type demonstrates measured, logic-driven acceptance of advertising and rejects unnecessary creative embellishments.

Table 6. The statements and Z-scores of type 3

	Q Statements	Z-Scores
Positive	1. English advertising using medical IT in the AI era give someone a sense of trust.	2.11
Negative	16. We need an emotional appeal strategy in English advertising using medical IT in the AI era.	-1.23
	7. I have experienced the urge to buy products after watching English advertising using medical IT in the AI era.	-1.24
	14. It's better to make it into an animation in English advertising using medical IT in the AI era,	-2.33

Table 7 identifies items with average Z-scores within ± 1.00 , indicating shared perceptions across all three types. These results show that participants mildly agree that choosing an appropriate model or spokesperson matters in such advertisements. And there is moderate disagreement with the notion that the ads are overly exaggerated or that they manipulate consumption needs. This suggests a general trust in the tone and intention

of the ads, alongside balanced expectations regarding influence and accuracy. Overall, these consensus items highlight a shared baseline of credibility and advertising awareness across all participant types.

Table 7. Consensus items and average z-scores

Item Description	Average Z-Scores
13. It's important to select a model for an appearance in English advertising using medical IT in the AI era.	.08
4. English advertising using medical IT in the AI era has a lot of exaggerated parts.	-.43
2. English advertising using medical IT in the AI era adjust one's consumption needs.	-.45

5. Conclusions

This study set out to examine university students' subjective perceptions of English-language advertising that utilizes medical treatment IT in the era of artificial intelligence. Using Q-methodology, the research identified three distinct perception types—Informed Optimists, Critical Realists, and Trusting Pragmatists—each representing a unique viewpoint regarding the credibility, appeal, and effectiveness of such advertisements. From a practical standpoint, the findings offer actionable guidance for practitioners involved in AI-based medical IT advertising. Understanding that audiences differ in their expectations for credibility, information depth, and representational style enables advertisers and healthcare institutions to design more targeted and ethically responsible communication strategies, particularly in English-mediated global contexts.

The results contribute to the expanding literature on AI in consumer communication by offering a typology of reception in a medically sensitive domain. The findings reinforce the value of Q-methodology in uncovering nuanced subjective positions that traditional survey methods might overlook. Moreover, the study demonstrates how technology acceptance, advertising appeal, and trust converge differently among user segments—providing a framework for future research into AI-driven health communication.

Based on the findings of this study, the following recommendations are proposed. Firstly, segmented communication strategies are essential like a prior research [8]. Audiences like Type 1 require detail-oriented, innovation-focused messages, whereas Type 2 may need storytelling, creative formats, and evidence-based claims to overcome skepticism. Type 3 benefits from minimalist, expert-driven presentations. Secondly, trust-building must be a priority. Especially in healthcare, as demonstrated in prior study [9], exaggerated claims or vague promises may alienate potential consumers. Professional tone, factual accuracy, and transparency enhance message acceptance. Thirdly, language considerations also matter. While English in Korean advertising may symbolize sophistication, it should not obstruct understanding. Supplementary Korean explanations or bilingual materials may improve accessibility without losing the global appeal.

Moreover, the identification of perception types among Korean university students offers valuable insights for English-speaking companies seeking to tailor their advertising strategies to non-English-speaking markets.

Although Q-methodology provides deep insights into subjectivity, the study is limited in its generalizability due to the small and localized sample size ($N = 23$). The findings are most applicable to Korean university students and may not represent broader demographics. Future studies are encouraged to conduct quantitative follow-up research to measure the prevalence of each type in the general population and to expand the participant pool to include diverse age groups, health statuses, and language proficiencies.

Acknowledgments: The authors wish to extend sincere gratitude to all the university students who generously participated in this study. Notably, this project also marked the first time the authors collaborated together. The process was both enjoyable and enriching, thanks to the mutual respect, cooperation, and shared commitment to the research goals.

Conflicts of Interest: The authors declare no conflict of interest.

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