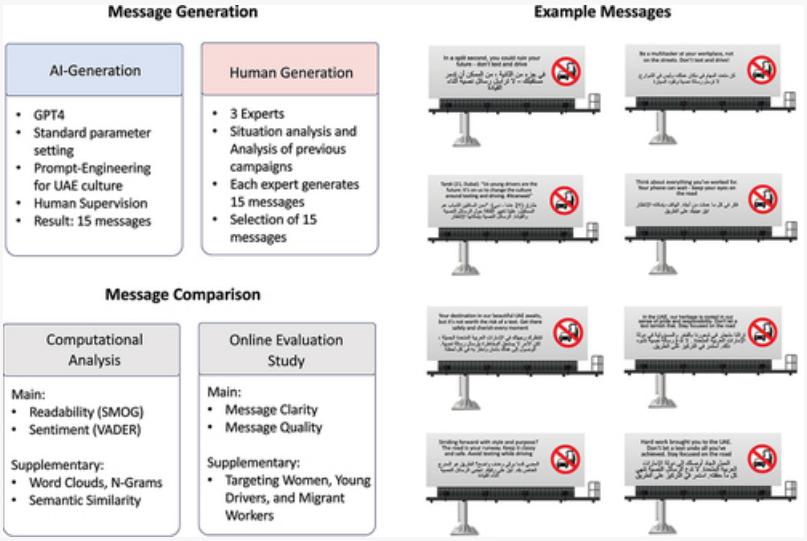
AI Arabic language health messages are more positive but less clear than those generated by humans, scientists find

Arabic language health messages generated by AI lack clarity and cultural nuances, according to scientists.



Message generation with examples. Credit: Global Health Action (2025). DOI: https://doi.org/10.1080/16549716.2025.2464360

SHARJAH, EMIRATE OF SHARJAH, UNITED ARAB EMIRATES, March 19, 2025 /EINPresswire.com/ -- A new study has found that the health messages artificial intelligence generates in the Arabic language are mostly of a positive tone but not as clear as those made by humans.

The study, reported in the journal Global Health Action, includes a computational analysis and an online evaluation with 186 participants from the United Arab Emirates (UAE). It analytically compares messages generated by AI with those created by humans.

“Computational analysis showed that AI-generated messages exhibited a more positive sentiment compared to human-created messages. This suggests that AI, perhaps due to its training on vast datasets, tends to generate more optimistic content,” says lead author Dr. Syed Ali Hussain, a mass communication scholar at the University of Sharjah.

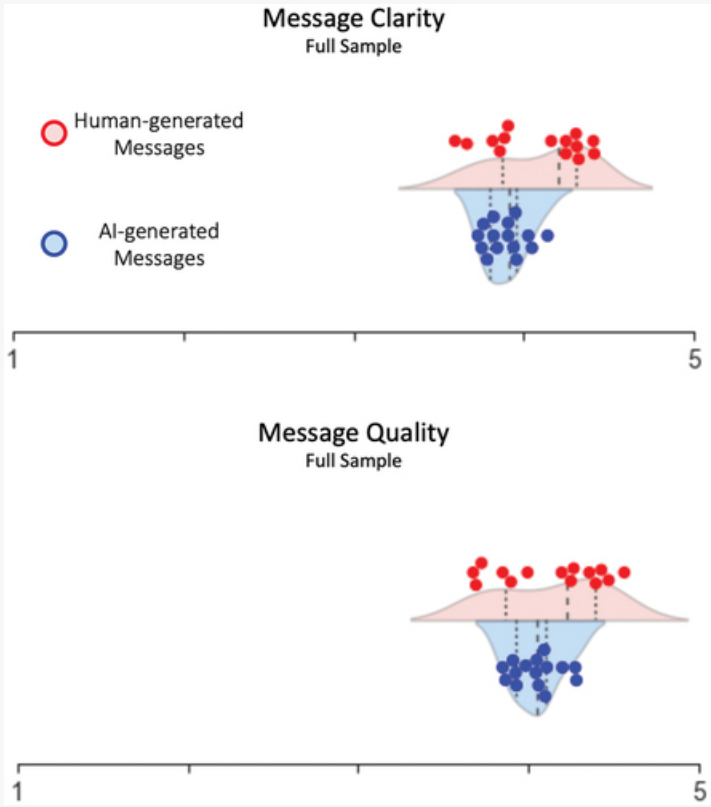
Spoken by approximately half a billion people, the potential for AI-generated messaging in the Arabic language is immense.
However, questions arise whether AI can effectively capture the cultural nuances and the discursive patterns of a language of profound historical and cultural significance like Arabic known for its sophisticated linguistics, eloquence and rhetoric.

It remains to be seen, says Dr. Hussain, if AI will eventually develop Arabic language models with the ability to “maintain clarity, and engage audiences as well as human communicators can.

"This study shows that AI can augment human creativity, but it is not a full replacement. The best approach is a hybrid one where AI speeds up content creation while humans ensure clarity and cultural sensitivity."

The study generates 15 road safety messages using AI and compared them with 15 human-generated messages. The messages are in MSA, or Modern Standard Arabic, the formal elegant variety for the media, artificial intelligence, education, and literature.

MSA has a unique alphabet and pronunciation marks with their special diacritics and accents. It is rarely used in casual conversation, where local dialects dominate, but it is a bridge to the Arab world and the medium of learning, knowledge, and science, connecting the cultures and literature among the 22 Arabic-speaking countries.



Message clarity and message quality. Credit: Global Health Action. DOI: https://doi.org/10.1080/16549716.2025.2464360

The study employs a computational text analysis augmented by186 participants from the United Arab Emirates (UA), a culturally, linguistically, and demographically diversified country. The AI messages are compared with their counterpart human-created messages, with each evaluated and assessed for clarity and overall quality.

The scientists use AI model GPT-4 to examine the data and supplement their computational analysis with an online investigation in which human participants appraise the messages on the basis of clarity and quality.

Of their major findings, the scientists write, “The computational analysis revealed that AI-generated messages exhibited more positive sentiment with no significant differences in terms of readability/text difficulty.

“(Human) participants evaluated both AI- and human-generated messages ... In terms of message quality and clarity, but human-generated messages were rated as slightly and significantly higher in terms of clarity.

“These results add to a rapidly growing body of research demonstrating that AI-generated

messages can augment public communication campaigns and point towards the need to assess how diverse international audiences respond to AI-generated content."

While the study finds no significant difference in how participants rate the overall quality of messages whether they are IA-created or human-generated, the results suggest that the former, when carefully curated, can be viable for public campaigns.

"Our findings show that AI can be a powerful tool in developing health and safety campaigns, particularly in regions with multilingual and multicultural populations," maintains Dr. Hussain. "AI-generated messages offer a cost-effective and scalable solution for public health messaging, allowing organizations to allocate resources more efficiently."

However, the study points to numerous investigation gaps in AI-created content, particularly at the level of clarity. "This shows that AI-generated content needs human oversight to ensure cultural and linguistic appropriateness."

Although the study provides evidence of AI's potential in health messaging, the authors are quick to note that several areas still require to be explored in order to strengthen and improve IA-created Arabic language health communication.

"To improve AI-generated Arabic content, future efforts should focus on developing Arabic-centric AI models trained on high-quality, diverse corpora that include both Modern Standard Arabic (MSA) and regional dialects. Existing models should be further refined to better capture linguistic nuances and cultural context," the authors highlight in their conclusion.

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