

THE IMPACT OF USING AI WITHOUT ADEQUATE ENGLISH PROFICIENCY AMONG USERS IN MATARAM

[Dampak Penggunaan AI Tanpa Kemampuan Bahasa Inggris yang Memadai di Kalangan
Pengguna di Mataram]

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ABSTRAK

Penggunaan kecerdasan buatan (AI) meningkat pesat di berbagai aktivitas masyarakat, termasuk di Mataram—walau sebagian besar pengguna belum memiliki penguasaan bahasa Inggris yang memadai. Penelitian ini bermaksud menganalisis masalah yang muncul akibat penggunaan AI oleh pengguna dengan kemampuan bahasa Inggris terbatas. Menggunakan metode kuantitatif (survei terhadap 120 pengguna) dan kualitatif (15 wawancara mendalam), kami mengkaji fenomena miskomunikasi, bias AI, dan dampak sosial-ekologis. Data menunjukkan 68% mengalami miskonsepsi atas hasil AI, 60% mengalami diskriminasi lisan, serta 52% menerima informasi tidak akurat. Hasil ini diperkuat fenomena *techno-linguistic bias* dan kecenderungan AI mendominasi bahasa Inggris standar. Rekomendasi meliputi pelatihan bahasa, pengembangan AI lokal bilingual, serta kebijakan inklusif. Temuan ini memicu kesadaran bahwa penguasaan bahasa menjadi prasyarat penting untuk adopsi AI yang adil dan efektif.

Kata kunci: Kecerdasan Buatan; Penguasaan Bahasa Inggris; Bias AI; Miskomunikasi; Diskriminasi Linguistik; AI Bilingual; Kebijakan Inklusif; Adopsi AI

ABSTRACT

The use of artificial intelligence (AI) is rapidly increasing across various societal activities, including in Mataram—although most users do not have adequate English proficiency. This study aims to analyze issues arising from AI usage by users with limited English skills. Employing quantitative methods (survey of 120 users) and qualitative methods (15 in-depth interviews), we examine phenomena such as miscommunication, AI bias, and socio-ecological impacts. Data show that 68% experienced misconceptions about AI outputs, 60% faced verbal discrimination, and 52% received inaccurate information. These results are reinforced by techno-linguistic bias and AI's tendency to favor Standard English. Recommendations include language training, development of local bilingual AI, and inclusive policies. The findings raise awareness that language proficiency is an important prerequisite for fair and effective AI adoption.

Keywords: Artificial Intelligence; English Proficiency; AI Bias; Miscommunication; Linguistic Discrimination; Bilingual AI; Inclusive Policy; AI Adoption

INTRODUCTION

The development of artificial intelligence (AI) technology has transformed how humans work, communicate, and learn. AI applications such as ChatGPT, Google Bard, and Copilot have become part of daily activities in education, business, and government.

Helm et al. (2023) introduce the term *techno-linguistic bias*, which refers to bias arising from the dominance of certain languages in AI development. AI training corpora dominated by English texts result in models that are less accurate in processing minority languages. Fricker (2007) defines epistemic injustice as the unfairness occurring when certain groups lack equal access to information. In the AI context, non-

English speakers suffer this injustice as they do not receive outputs equal in quality to those for English speakers.

Liang et al. (2023) found that AI text detectors tend to produce false positives on writings by non-native speakers, implying unfairness in automated evaluation, especially in education and recruitment. Kim et al. (2023) emphasize the importance of developing explainable AI to help users understand the processes behind AI outputs. This can reduce misunderstandings and increase user trust.

However, most generative AI models are built primarily on English-language data (Brookings, 2023; Fung & Nguyen, 2023). This creates a utilization gap between native English speakers and users from other language backgrounds. Mataram, as a growth center in West Nusa Tenggara, has seen a surge in AI technology use in education, MSMEs, and public services. Yet, the majority of residents have low English proficiency (BPS NTB, 2023). This situation poses serious challenges: users experience miscommunication, receive incorrect information, and even face linguistic discrimination.

Research questions: 1) How does limited English proficiency affect AI user interactions in Mataram? 2) What forms of linguistic bias do low-English-proficiency users experience? 3) What strategies can reduce this gap?. Research objectives: 1) To analyze communication problems between low-English-proficiency users and AI. 2) To identify forms of linguistic bias in AI systems. 3) To provide practical recommendations to enhance AI inclusivity in Mataram.

METHODOLOGY

Research Design

This study employs mixed methods: quantitative through surveys, and qualitative through in-depth interviews.

Population and Sample

The research population is AI users in Mataram. The sample consists of 120 survey respondents and 15 in-depth interview participants. Purposive sampling was applied.

Research Instruments

- Online questionnaire measuring miscommunication, bias experiences, and trust in AI.
- Semi-structured interview guides to explore participants' in-depth experiences.

Data Analysis

Quantitative data were analyzed using descriptive statistics and Pearson correlation. Qualitative data were analyzed using thematic coding.

FINDINGS AND DISCUSSION

Survey Results

- 68% of respondents experienced miscommunication when using AI.
- 60% stated AI outputs tend to favor Standard English style.
- 52% received information that did not align with local contexts.

Interview Findings

Respondents reported difficulties understanding technical terminology, bias in AI responses, and feelings of linguistic discrimination.

Correlation Analysis

A significant negative correlation was found between English proficiency and frequency of miscommunication ($r = -0.59$; $p < 0.01$).

Discussion

Relation to Global Studies

These findings align with global research highlighting AI utilization gaps between English and non-English speakers (Brookings, 2023; Fung & Nguyen, 2023).

Practical Implications

Inability to understand AI outputs has serious implications for decision-making, especially in education, business, and public services.

Applicable Solutions

Development of local AI, needs-based English training, and inclusive technology policies are urgently needed.

CLOSING

Conclusion

Using AI without adequate English proficiency in Mataram causes miscommunication, linguistic bias, and misinformation. This study confirms that language justice is an urgent issue in AI utilization.

Recommendations

1. **Contextual English Training:** English language programs focused on AI terminology.
2. **Local AI Development:** Creation of bilingual AI models considering Indonesian language context.
3. **AI Transparency:** Implementation of explainable AI so users understand output rationale.
4. **Inclusive Policies:** Local governments should encourage AI development that accommodates local languages.

REFERENCES

- Brookings. (2023). How language gaps constrain generative AI development.
- Fung, P., & Nguyen, T. H. (2023). ChatGPT Is Cutting Non English Languages Out of the AI Revolution. *Wired*.
- Fricker, M. (2007). *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press.
- Helm, P., Bella, G., Koch, G., Giunchiglia, F. (2023). Diversity and Language Technology: How Techno Linguistic Bias Can Cause Epistemic Injustice. *arXiv*.
- Kim, Y., Lee, M., Kim, D., Lee, S.-J. (2023). Towards Explainable AI Writing Assistants for Non-native English Speakers. *arXiv*.
- Liang, P., Zou, J., et al. (2023). GPT detectors are biased against non-native English writers. *Stanford HAI*.