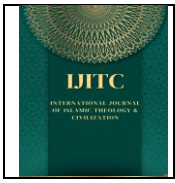

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AUTOMATED TRANSLATION TOOLS FOR MUALAF: ARTIFICIAL INTELLIGENCE SOLUTIONS FOR ACCESSING ISLAMIC TEXTS AND RESOURCES ACROSS LANGUAGES

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ABSTRACT

This paper explores the potential of Automated Translation Tools (ATT) or AI-driven translation tools in enhancing the accessibility of Islamic knowledge for mualaf (new converts to Islam) who may face linguistic barriers. Machine translation (MT) and natural language processing (NLP) technologies let Mualaf access religious texts, educational videos, and learning materials in their native languages, bridging gaps in understanding and enabling more profound engagement with Islamic teachings. The study assesses current AI translation tools' effectiveness in religious contexts, identifies challenges in translating complex theological content, and provides recommendations for improving AI tools to support mualaf communities. The findings demonstrate that while current AI translation technologies show promise, specific cultural and religious sensitivities must be addressed for more accurate and contextually appropriate translations.

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INTRODUCTION

Religious conversion often presents significant linguistic and cultural challenges for mualaf, especially when they must access foundational religious texts and educational materials that are not readily available in their native languages. This is particularly relevant in Islam, where key religious texts such as the Qur'an, Hadith, and scholarly works are traditionally in Arabic. Automated Translation Tools (ATT) for Mualaf can help overcome these barriers, allowing Mualaf to engage with Islamic teachings more effectively. However, translating religious content accurately requires sensitivity to the text's linguistic, cultural, and theological nuances. This paper investigates the role of AI-based automated translation tools in facilitating access to Islamic knowledge for mualaf, identifying both the benefits and limitations of current technologies.

LITERATURE REVIEW

The literature review on AI and machine translation technologies, particularly in the context of translating religious texts, explores the advancements and limitations in this field. AI-driven translation tools, including Automated Translation Tools (ATT) for Mualaf (new Muslim converts), have significantly improved the accuracy and fluency of language translation. However, religious texts pose unique challenges due to their rich symbolism, cultural nuances, and intricate theological meanings. The review delves into the difficulties AI faces in capturing context, idiomatic expressions, and spiritual subtleties, especially in translating Islamic texts for Mualaf. This highlights the importance of human oversight to ensure faithful and sensitive translations. Ethical concerns are also addressed, along with the need for specialized training datasets to handle these sacred materials accurately.

ARTIFICIAL INTELLIGENCE AND MACHINE TRANSLATION TECHNOLOGIES

The advancements in machine translation (MT) over the past few decades have been driven by the rise of AI technologies (Jiang & Lu, 2021), profound learning and natural language processing (NLP) (Sharma et al., 2021; Torfi et al., 2020). Traditional rule-based systems have primarily been replaced by neural machine translation (NMT), which uses artificial neural networks to model translation patterns from large datasets (Islam et al., 2021). NMT systems like Google Translate (Almahasees et al., 2021; Tongpoon-Patanasorn, 2020) and DeepL have achieved impressive fluency and speed, surpassing previous statistical approaches. However, their accuracy varies depending on the complexity of the text and the languages involved, with low-resource languages often producing lower-quality translations (Moghe et al., 2024; Yazar et al., 2023). Research into AI-driven MT has focused primarily on general language applications, such as news articles or everyday communication, where literal translation is often sufficient. However, when applied to specialized domains, such as legal, medical (Rashed Alkatheery, 2023; Vieira et al., 2021), or religious texts (Almahasees, 2021; Al-Samawi, 2014; Dahia & Belbacha, 2024). MT systems encounter significant challenges. For example, religious texts are often rich in metaphors, idiomatic expressions, and culturally specific references that do not have direct translations in other languages (Elhadary, 2023). These challenges highlight the limitations of AI translation in delivering accurate and context-sensitive results, which is particularly important for theological and spiritual content.

CHALLENGES IN TRANSLATING RELIGIOUS TEXTS

Translating religious texts, including Islamic scriptures, presents unique obstacles due to the profound meanings encoded in spiritual language, the significance of cultural context, and the complexities of religious doctrines (Mohamed & Mahmoud, 2014). Islamic texts such as the Qur'an and Hadith contain terms with multifaceted meanings, which require linguistic precision and deep theological understanding(Al-Azzam, 2008). For example, terms like *fitrah* (innate nature) or sharia (Islamic law) carry philosophical connotations that are challenging for machine translation systems to capture fully. Several studies have analyzed the limitations of existing AI translation tools when applied to the Qur'an and other religious content (Atwell & Sawalha, 2011; Ayad Enad Khalaf & Iman A. Abdulrahman, 2024; Taghian, 2024). While AI is proficient at delivering literal translations, it often fails to accurately maintain the subtleties required for conveying spiritual messages. Scholars argue that religious translation requires careful consideration of cultural sensitivity, interpretative choices, and doctrinal integrity, making it a field where human oversight is crucial. This has led

to recommendations for hybrid translation models, combining AI efficiency with human expertise to ensure accuracy and appropriateness in religious contexts.

METHODOLOGY

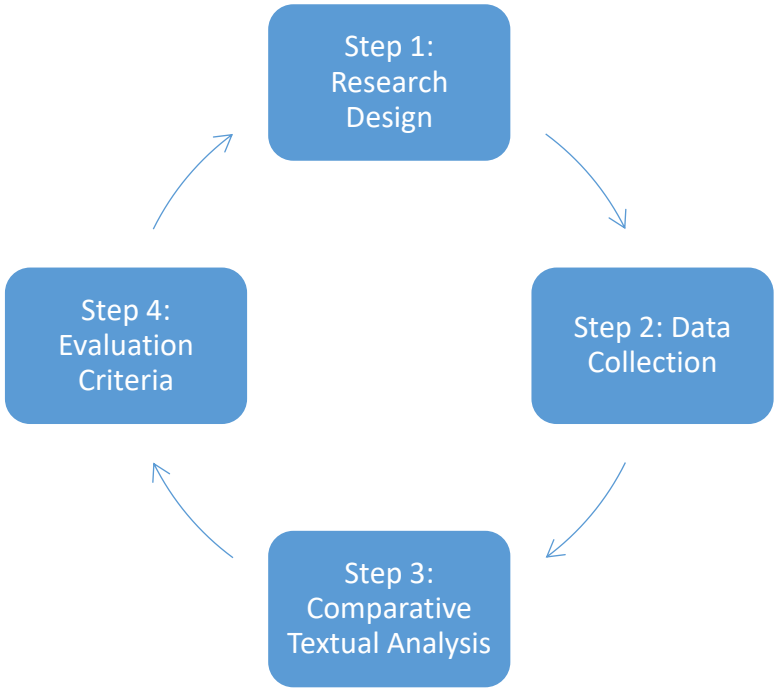

Figure 1: The Methodology Process

This study uses a mixed-method approach that combines quantitative and qualitative methods to thoroughly assess the performance of AI-driven translation tools in delivering accurate and culturally sensitive translations of Islamic texts for mualaf (new converts to Islam). The data collection process involved testing three popular AI translation platforms: Google Translate, DeepL, and Systran. These tools were used to translate various Islamic texts, including selected Qur'an Surahs, Hadith collections, and introductory Islamic educational resources such as books, articles, and videos. A comparative textual analysis was conducted between the AI-generated and traditional human translations, focusing on key areas such as translation accuracy, fluency, and the handling of culturally or theologically sensitive concepts.

To add a user-based perspective, surveys were administered to 30 mualaf from different linguistic backgrounds, including English, French, Indonesian, and Spanish, who had experience using AI translation tools to access Islamic content. This allowed for understanding their personal experiences and challenges in interpreting religious materials through AI translations. Additionally, in-depth interviews were conducted with ten scholars and Islamic educators, who provided insights into the difficulties and nuances of translating Islamic content, such as maintaining the spiritual depth and theological precision inherent in critical religious texts.

The research evaluated the AI tools based on four primary criteria: accuracy (how well the AI preserved the original meaning of the texts), contextual appropriateness (whether the translations maintained the intended spiritual and theological significance), cultural sensitivity (the degree to which translations respected the religious and cultural nuances of Islamic teachings), and user satisfaction, based on mualaf feedback about their experiences with the AI tools. These combined methods offer a comprehensive evaluation of the effectiveness of AI translations in this religious context.

RESEARCH FINDINGS AND DISCUSSIONS

ACCURACY OF AI TRANSLATION TOOLS

The findings revealed that Automated Translation Tools (ATT) such as Google Translate and DeepL performed well in translating basic Islamic educational materials into various languages. However, significant errors were observed when translating more complex religious texts, such as the Qur'an and Hadith. AI systems struggled with maintaining the theological precision and subtle meanings of key Arabic terms, which often hold profound spiritual significance in Islam. For instance, terms like taqwa (God-consciousness) or jihad (striving in the path of God) were often mistranslated in ways that could mislead readers.

CONTEXTUAL AND CULTURAL SENSITIVITY

One of the primary challenges identified was the lack of cultural and contextual sensitivity in AI translations. While AI tools effectively generated literal translations, they frequently failed to grasp the more profound, symbolic meanings embedded in Islamic texts. For example, idiomatic expressions in Arabic that convey moral or spiritual lessons were often translated literally, resulting in confusing or distorted messages for the mualaf users. The interviews with scholars highlighted that such misinterpretations could hinder the spiritual growth of new converts by providing incomplete or incorrect guidance.

CONCLUSION AND RECOMMENDATION

Automated Translation Tools (ATT) hold significant potential for enhancing mualaf access to Islamic knowledge across languages. While these tools are already valuable for general Islamic education, there are notable limitations when translating theologically complex texts. Misinterpretations and cultural insensitivities are common, underscoring the need for hybrid models that combine AI efficiency with human oversight. By refining these tools and training them on religious corpora, the Islamic community can make critical religious knowledge more accessible, ensuring that mualaf receive accurate and meaningful spiritual guidance as they grow in their new faith.

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