

Book Review of Zakaryia Almahasees's *Analysing English-Arabic Machine Translation*

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Ika Mahmudah Fauziah and Riska Wahyu Pratiwi Adnin Putri
Universitas Pendidikan Indonesia

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Abstract: *Analysing English-Arabic Machine Translation* evaluates three prominent MT systems, including Google Translate, Microsoft Translator, and Sakhr, each of which provides translation between English and Arabic in a large corpus and paves the way for further research on such an important topic.

Translation is an important medium that bridges the gap between human communities and ensures the best way to share knowledge and communication between them. In this case, Machine Translation plays a very important role in the occurrence of this global communication. Supported by the development of technology in this era, we can find various kinds of Machine Translation systems, including Google Translate, Microsoft Translate, and Sakhr.

Zakaryia explains that the goal of Machine Translation research should be to create a Machine Translation system that produces results like humans. In developing its system, Machine Translation uses several techniques such as rule-based Machine Translation, corpus-based Machine Translation, hybrid approach, and neural machine translation. In practice, Machine Translation should be continuously evaluated by involving researchers, developers, and users. and Machine Translation Evaluation's main concern is analyzing the output of the translation system to classify Machine Translation's limitations and produce an output that is acceptable to the end user.

Zakaryia discusses the capacity of the three systems using the adequacy and fluency of TAUS (Translation Automation User Society). This chapter shows the scale of adequacy and fluency of 3 machine translations (Google Translate, Microsoft Translator, and Sakhr) in an overall view. In terms of adequacy, Sakhr has increased although it is still the lowest compared to the other two. In terms of fluency, Google Translate and Microsoft Translator almost always share the same average rating, but Google Translate improved sharply, while Microsoft Translator improved substantially. And although the Sakhr shows a gradual increase, it remains the lowest among the three.

Error analysis is the process of determining errors and its causes and effects of such errors on the intelligibility, accuracy, and fluency factors in translation. Error analysis is central in MTE to highlight the capacity of MT systems, Firstly, orthographic errors involve punctuation marks, spelling, and capitalization. Secondly, lexis errors include mistranslated, untranslated, added, and omitted words. Thirdly, grammatical errors cover subject-verbs agreement, word order

errors, prepositions, pronouns, Arabic conjunctions into English, and articles. Lastly, semantic errors comprise word choices and confusion of senses.

Holistically, the results have shown that the three systems under study have considerably improved over the two years. These improvements indicate that the three systems conduct rigorous research to ensure the best translation quality for the end-users. Overall, the study found that Google Translate has achieved the best performance at the adequacy and fluency levels, followed by a tie between Microsoft Translator and Sakhr. The Google Translate has made a significant advancement in English and Arabic translation in comparison to other systems (Kane, 2021). Moreover, that Google Translate achieves better results in English-Arabic translation.

In English into Arabic, the study has found that the three systems have achieved considerable improvements in translating the UN documents into Arabic. This is because the chosen MT systems take advantage of online bilingual corpora, which help them learn from previously translated texts. Regarding Arabic into English, the study found that the three systems have advanced considerably in providing adequate and fluent translation for Arabic League texts into English. And found that the two systems with NMT, Google Translate and Microsoft Translator, achieved better results than a system with hybrid MT, Sakhr.

The holistic analysis and the EA of the English-Arabic MT output of the three systems under study showed that Google Translate has achieved the best performance, followed by Microsoft Translator and then Sakhr over the two years 2016 and 2017. Microsoft Translator and Sakhr have gained interchangeable performance due to the progress in development of the two systems. However, Microsoft Translator with a data-driven approach would be expected to provide more impressive results than Sakhr with hybrid approaches. Therefore, NMT systems, Google Translate and Microsoft Translator, would achieve a breakthrough in the field of MT in the future.

Ika Mahmudah Fauziah – Corresponding Author

Department of Arabic Language Education

Indonesia University of Education

ORCID Number: [0000-0003-3309-7163](https://orcid.org/0000-0003-3309-7163)

Email: ikamahmudah@upi.edu

Riska Wahyu Pratiwi Adnin Putri

Department of Arabic Language Education

Indonesia University of Education

ORCID Number: [0000-0003-4537-3057](https://orcid.org/0000-0003-4537-3057)

Email: riskaputri@upi.edu