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| RESEARCH ARTICLE

Copilot's English Translation of Contrastive Emphatic Negation in Arabic Discourse: An Analytical Study

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| ABSTRACT

This study explores how AI, vis Microsoft Copilot (MC) translates Arabic contrastive emphatic negation (CEN) expressions, types of translation errors and translation strategies used. Analysis of a sample of 436 Arabic CEN expressions using a variety of negative particles showed that MC gave 65% correct translations of CEN expressions in the sample. MC gave more correct translations of expressions with a single negative particle than correlative conjunctions as ولا ... لا neither … nor, when the structure has a transparent rather than an underlying meaning, when negation is literal, and structurally simple (الكبير مش الصغير the big stand, not the small one; الكيف وليس الكم quality, not quantity; عاجلا غير آجل sooner not later). On the contrary, MC made semantic and syntactic errors as failure to understand and convey the meaning of idiomatic expressions and equivalent set idioms/phrases, difficulty with polysemous words, rendering faulty lexical choices, faulty structure and faulty wording, faulty choice of negative particles, faulty use of articles, and equivalents with faulty part of speech and derivatives. MC failed when the negation is idiomatic, culturally loaded, polysemous, or pragmatically marked. Nevertheless, CEN expressions were easier for MC to translate than zero-expressions, Gaza-Israel war terminology, Arabic grammatical terms used metaphorically, expressions of impossibility, Arabic folk medical terms with om and abu, Arabic abu-brand names using different prompts, and metonymic abu and umm animal and plant names. As in prior studies by the author, MC tended to translate word for word, rather than giving the fixed English equivalent or an accurate semantic equivalent (Finally, not lastly for أخيرا وليس آخرا rather than last but not least; دون كلل أو ملل without fatigue or boredom instead of tirelessly. Faulty translations demonstrated that MC's weaknesses are concentrated in expressions that require recognition of multiword expressions with and idiomatic or metaphorical meaning, accurate particle selection, lexical choice, pragmatic interpretation, cultural competence and semantic inference. The study recommends that translators and students should not take MC translations for granted but should verify and post-edit its output.

| KEYWORDS

Artificial Intelligence (AI), Copilot, Arabic-English translation, word-for-word translation, contrastive emphatic negation, Arabic negations particles, Arabic negation devices, Arabic correlative conjunctions, idiomatic expressions, polysemous words.

| ARTICLE INFORMATION

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1. Introduction

Contrastive emphatic negation (CEM) uses intensified negative expressions (like "never ever," "not at all") or specific structures (like "not X, but Y") to strongly deny something and highlight the affirmative alternative, creating a sharper contrast than simple negation. It often uses linguistic tools like intensifiers, stress, or specialized words to emphasize the negated part and clarify a precise difference. It adds a force to a negative, often correcting a mistaken positive assertion as in saying "*I didn't just see it, I really saw it!*" (Silvennoinen, 2019). It is characterized by adding Intensifiers like "at all," "ever," "really," "never," or stressing words to make the negation stronger. It implies contrast by explicitly setting up a "not this, but that" scenario as in saying "not today, but tomorrow". Emphatic contrastive negation structures combine negation with affirmation, often with a corrective intent, such as using "not just" or specific constructions like Italian "NO che...". They use emphasizing the word being negated "*I*

didn't steal it, I bought it" or the contrasting element "*I bought the recommended book, not just any book*". Because emphatic contrastive negation relies on idiomaticity, lexical contrast, and culturally embedded structures, it poses significant challenges for translation systems, particularly when the negation carries rhetorical or corrective force.

With its diverse particles and emphatic devices, Arabic offers a rich field for exploring how negation functions, not only as denial but also as a tool of rhetorical force. Research on negation and emphasis in Arabic and English has been extensive, though fragmented across different domains. One group of studies mainly focused on the structural and grammatical aspects of negation, examining how negative particles and emphatic constructions function in Arabic and English scientific texts (Mohammed & Al-Marsumi, 2022), in the realization of double negatives (Alshargabi, et al. 2022), and in Qur'anic translation (Al-Hilali & Hussein, 2020), and grammatical semantic study Arabic emphatic particles in the Holy Quran (Bakhit, 2022). Other studies explored sociolinguistic variations in Syrian Arabic negators (Habib, 2023), corpus-based approaches to negation in Standard Arabic (Kahlaoui, 2019), and emphatic coordination (Alruwaili & Sadler, 2018). Although these studies are largely descriptive, they provide valuable insights into the mechanics of negation.

A second line of research examined emphatic and rhetorical structures in literary and/or religious contexts such as analyzing emphatic verbal constituents in the Holy Qur'an (Alhamdan, 2023), antithesis as a rhetorical device in the Qur'an (Abbas, 2023), recognition of emphatic features in advertising discourse (Al-Jarf, 2025g), shifts in emphatic expression between Arabic and Italian (Al-Ali, 2009), a contrastive study emphasis in English and corroboration in Arabic (Sabri, 2019). These studies highlight the stylistic and persuasive power of emphasis, yet they do not identify their translation problems.

A third group has investigated translation of negative and emphatic structures in human-mediated contexts, such as the negation system in Arabic and translation (Dendane & Dendane, (2020); Gibran's *The Prophet* (Farghal & Kalakh, 2017); Qur'anic verses (Benkharafa, 2020; Almoghirah, 2024; Masboogh & Mesbahi Hamrah, 2024); and grammatical and rhetorical analyses of impossibility in Qur'anic discourse (Al-Jarf, 2024d). These studies underscore the complexity of conveying emphatic structures across languages but remain focused on literary and religious texts.

With recent advancements in AI and MT translation systems, recent studies, attention has shifted toward machine translation (MT) and computational processing of negation. Such studies analyzed automatic negation detection in Arabic hotel reviews (Abuhammad & Ahmed, 2024), neural MT challenges (Tang et al., 2021; Sennrich, 2016), advances in negation processing (Morante & Blanco, 2020), and negation as a persistent source of error in translation and sentiment analysis (Hossain et al., 2020; Alharbi, 2020; Blanco & Bott, 2014). These studies provide empirical evidence that negation remains a poorly handled challenge for advanced AI models.

Despite this breadth of research, there is a clear gap in what prior studies have focused on. Few studies have examined the translation of CEM in Arabic discourse, particularly in the MT context. Therefore, this study aims to explore Arabic structures used in CEM, their emphatic effects, and how they are translated by Microsoft Copilot (MC). It aims to find out how MC translates a variety of Arabic devices at the phrase level and longer stretches of discourse in a variety of fields. It aims to explore the semantic and syntactic inaccuracies and translation strategies employed by MC.

While previous research has examined negation structurally, rhetorically, or computationally, none has specifically addressed CEM in Arabic–English translation by AI. The present study therefore contributes a new perspective by providing empirical evidence of systematic error patterns in AI translation of CEM, demonstrating the unique challenges posed by لا ... ولا and other correlative structures, highlighting the interaction between idiomaticity, cultural meaning, and translation accuracy, and bridging descriptive linguistics with computational evaluation. In doing so, the study extends the existing literature and identifies a critical area where AI translation systems require further development.

This study fills a gap in the literature because many prior studies have examined negation and emphasis in Arabic linguistics, but few have explored contrastive emphatic ne CEM gation in translation, especially by AI models. By analyzing how Arabic CEM functions rhetorically and grammatically, this study contributes to a deeper understanding of Arabic contrastive structures in Arabic discourse. Since negation is a known challenge for MT, findings of the current study can help improve AI translation models and highlight where they fail. The study bridges linguistic, translation, and AI research, showing how rhetorical devices interact with computational systems. It offers insights that benefit linguists, translators, educators, and AI developers alike.

Moreover, this study is beneficial for linguists, translation professionals, students and educators, AI researchers & developers and cross-cultural communication. Linguists will gain insights into the rhetorical and emphatic functions of negation in Arabic discourse. Translation scholars will learn how contrastive negation is handled across languages and where translation strategies succeed or fail. Educators & students will benefit from examples and analysis that clarify how negation and emphasis shape

meaning, making it easier to teach contrastive structures. AI researchers & developers: Understand why negation remains a persistent error source in machine translation, and use your findings to refine models like Copilot, Gemini, or DeepSeek.: Understand why negation remains a persistent error source in machine translation, and use your findings to refine models like Copilot, Gemini, or DeepSeek. Cross-cultural communicators as translators, writers, and professionals working between Arabic and English can apply your findings to produce more accurate and rhetorically sensitive translations.

Furthermore, this study is significant because it constitutes an addition to a series of studies by the author on the use of AI in translation and education such as: Gaza–Israel war terminology (Al Jarf, 2025b); grammatical terms used metaphorically (Al Jarf, 2025j); zero expressions (Al Jarf, 2025t); Arabic *abu* brand names (Al Jarf, 2025f); denotative and metonymic abu- and umm- animal and plant folk names (Al Jarf, 2025i); folk medical terms with *om* and *abu* (Al Jarf, 2025r); medical terms (Al Jarf, 2024b; Al Jarf, 2024c); technical terms (Al Jarf, 2021; Al Jarf, 2016a); human and AI expressions of impossibility (Al Jarf, 2025q); human vs AI translation of chemical compound names (Al Jarf, 2025l); educational polysemes in AI translation of Arabic research articles (Al Jarf, 2025a); Arabic transliteration of borrowed English nouns with /g/ (Al Jarf, 2025d); pronunciation errors in Arabic YouTube videos (Al Jarf, 2025h; Al Jarf, 2025m; Al Jarf, 2025n); editors' perspectives on the publication of AI-generated research articles (Al Jarf, 2025p); Arab instructors' views on AI-generated student assignments (Al Jarf, 2024a); encrypted Arabic on Facebook and YouTube (Al Jarf, 2025e); "sleep" terms (Al Jarf, 2025s); specific linguistic questions that Artificial Intelligence cannot answer accurately (Al-Jarf, 2025o); translations from five languages into English and Arabic by Google Translate (2012–2025) (Al-Jarf, 2025k); electronic translation between Arabic and European languages (Al-Jarf, 2012). Together, these studies illustrate recurring weaknesses in AI's handling of linguistic, cultural, and scholarly tasks, reinforcing the diagnostic framework adopted in this paper.

2. Theoretical Framework

2.1 *Negation in Arabic*[1]

A negative sentence says that something is false or that it has not happened. Unlike English, Standard Arabic (SA) has a variety of negation particles that are used to negate verbs in the past, present or future. The most commonly used negation particles are: لا ,لم, لا , ما */laa*, *lam*, *lan, maa/*. Verbal sentences are simply negated by just adding a negative particle before the verb. When **لَمْ** (*lam*) is used before a present verb, it makes it a past action (**لَم** تتناول مَها العَشاء *Maha did not have dinner*). Here the meaning changes from present to past even although the verb form is present. The verb gained the past meaning after adding the negative particle **لَمْ** (*lam*).

When لَنْ /lan/ is added before a present verb, it negates an action in the future as in (لن تذهب سارة الى المدرسة, Sara will not go to school). This means that although the verb has a present form, it gains a future meaning as result of adding the negation particle لَنْ /lan/.

When the neg*ative particle* **لا** */la:/ is added before a present verb, it will negate an action in the present tense, or a habitual action.* **لا** احب كرة القدم *(I don't like soccer*). To negate an imperative verb, which is used to give instructions and commands, we use the particle لا (*lā*). Here, the verb form changes from the imperative form to the present form and is conjugated according to the gender and number of the people to whom it is directed (**لا** تَذْهَبْ إلَى المدرسة اليَوْم *Don't go to school today*).

ما */ma:/* is used before a past tense verb to negate a past action. Both the verb form and the meaning are in the past as in (ما زرت صديقتي بالأمس *I did not visit my friend yesterday).*

To negate nominal sentences (اِسْمِيَّة [*ismiyyah*]) that start with a noun/subject, **ليس** (*laysa*) is insert at the beginning of the sentence before the subject as in: **لَيْسَ** الطقس مناسبا للخروج *(the weather is not suitable to go out).*

Further particles that make sentences negative are: لا مَكان */lā maka:n/ nowhere/not anywhere*, لا أَحَد (*lā ʔaHad*) *no one/nobody;* لا شَيء (*la: shayʔ*) *nothing/not anything*, ولا ... لا */la: … wala/ neither…nor*. Other commonly used particles are **قَطُّ** */qaTT/* (ever, at all) as in لَمْ أَفْعَلْ ذٰلِكَ قَطّ *I have never done that*; **أَبَداً** */ʔabadan/* as in **أَبَداً** لَنْ آكله *I will never eat it.* قَطُّ (*qaṭṭ*) and أَبَداً */ʔabadan/* can only be used for negation (Al-Jarf, 2024; Al-Jarf, 1996; Al-Jurf, 2002; Al-Jarf, 1995; Al-Jarf, 1990).

2.2 Emphasis in Arabic

Emphasis[2] refers to the intentional use of linguistic and stylistic techniques to highlight specific words, phrases, or ideas within a sentence or discourse. In Arabic emphasis can be lexical through the following: (i) Emphasis by repetition: i.e., the repetition of

[1] https://www.arabicpod101.com/blog/2021/08/10/arabic-negation/#:~:text=In%20order%20to%20perform%20Arabic,l%C4%81%2C%20lam%2C%20lan).

[2] www.thoughtco.com/emphasis-speech-and-composition-1690646

the same word within a sentence (إِذَا دُكَّتِ الأَرْضُ دَكًّا دَكًّا "*When the earth has been leveled - pounded and crushed*"; وجاء ربك والملك صفا صفا "*And your Lord has come and the angels, rank upon rank*." (ii) Emphasis by fronting التقديم والتأخير which involves transposing a constituent from the middle or end of a string of discourse to the initial position (والرجز فاهجر "*and uncleanliness avoid*"; إِيَّاكَ نَعْبُدُ وَإِيَّاكَ نَسْتَعِينُ ، "*It is You we worship and You we ask for help*"; وعلى الله فليتوكل المتوكلون "*and on Allah let all men of faith put their trust*". (iii) Copulative pronoun of separation' ضمير الفصل used for an emphatic purpose in Arabic. Wright (1981) defines a '*pronoun of separation*' as a type of Arabic pronoun appended to the subject to give it a special prominence and to contrast it with another topic as in وَجَعَلْنَا ذُرِّيَّتَهُ هُمُ الْبَاقِينَ "*and We made his descendants those remaining [on the earth]*". (iv) Copulative Pronoun of Significance ضمير الشأن as in قل هو الله أحد "*Say, "He is Allah, [who is] One.*" (v) By using certain emphatic words such as: كلٌّ, عامة, جَمِيعُ *all*, as in: فَسَجَدَ الْمَلَائِكَةُ كُلُّهُمْ أجمعون "*o the angels prostrated - all of them entirely*"; Reflexive Pronouns نفس /nafs/ & عين /ʔayn/ same;كلا /kilaa/, كلتا /kilta/ both (إما يبلغن عندك الكبر أحدهما أو كلاهما *"Whether one or both of them reach old age [while] with you, say not to them [so much as], uff, and do not repel them but speak to them a noble word";* and as in كل نفس ذائقة الموت "*Every soul will taste death.*"

In addition, Arabic has several emphatic particles[3] that have a variety of functions and meanings as in: إِنَّ /ʔinna/ & أَنَّ /ʔanna/ verily; لامُ الابْتِدَاءِ introductory /laam/; لآمُ القَسَمِ /la:m? of oath; نون التَّوكيد الخفيفة light /nu:n/; نون التَّوكيد الثَّقيلةُ[4] heavy /nu:n/ as "إِنَّ الَّذِينَ يَأْكُلُونَ أَمْوَالَ الْيَتَامَى ظُلْمًا إِنَّمَا يَأْكُلُونَ فِي بُطُونِهِمْ نَارًا وَسَيَصْلَوْنَ سَعِيرًا" "*Indeed, those who devour the property of orphans unjustly are only consuming into their bellies fire. And they will be burned in a Blaze*" (Al-Jarf, 2024d; Mohammed & Al-Marsumi, 2022; Bakhit, 2022; Sabri, 2019; Wright; 1981; Al-Jarf, 1998).

2.2 *Emphatic Negation Devices in Arabic*

Arabic has numerous emphatic negation particles summarized in Table 1 below.

Table 1: Arabic Emphatic Negation Particles With Examples

Emphatic Negation Devices in Arabic			
غير	**مش/ مو**	**وليس**	**لا ... أو**
عاجلا غير آجل مقبل غير مدبر غير باغ ولا عاد من غير عجن ولا تخمير بغير حساب ولا سابق عذاب	بنت مش ولد حجمه كبير مش صغير سائلة مو جامدة سهل مش صعب شباب مو عجوز	التضخم عرض وليس مرض فضلا وليس امرا الكيف وليس الكم لبنان مهتم بالسلام وليس بالحرب اعمل بذكاء وليس بجهد	لا ترو أو هوادة لا حقوق أو امتيازات لا نوافذ أو أبواب لا اصل ولا فصل لا حق ولا باطل
دون .. أو	**لا .. ولا**	**لن ... ولن**	**بلا ... أو**
دون قيد أو شرط دون كلل أو ملل بدون حدود أو نهاية بلا تقيّد أو تضييق بلا خدم ولا حشم	لا أكثر ولا أقل لا أنيس ولا ونيس لا بالسند ولا بالهند لا بميزان ولا بقبان لا تُبقي ولا تذر	إنك لن تخرق الأرض ولن تبلغ الجبال طولا لن أكلّ ولن أملّ من الكتابة في هذا الموضوع لن آكل ولن أشرب	بلا حقائق أو حقوق بلا ا خ أو اخت بلا ثمن أو مقابل بلا افراط أو تفريط بلا تهمة أو محاكمة
لا ولن	**ما**	**ليس ... ولا**	**ولا**
لا ولن نستسلم لا ولن اتراجع	اللي ما يعرفك يجهلك اللي ما يعرف للصقر يشويه	ليس لهم من دونه ولي ولا شفيع ليس لها من دون الله كاشفة	اللهم كن معنا ولا تكن علينا يسروا ولا تعسروا وبشروا ولا تنفروا

2.3 *Purposes of Using Contrastive Emphatic Negative Expressions in Arabic*

Contrastive Emphatic Negation (CEN) in Arabic functions to highlight a clear distinction between two or more alternatives by negating the incorrect, less relevant, or undesired option (أكمل المشروع في الوقت المحدد وليس متأخرا The project was completed on time, not late; طلبت شايا وليس قهوة She ordered tea, not coffee; هو من الرياض وليس جدة He is from Riyadh, not Jeddah). Single-particle negation structures emphasize contrast by rejecting one element in favor of another, thereby clarifying preference or correcting misinformation (الكبير مش الصغير "the big one, not the small one"; الكيف وليس الكم "quality, not quantity"; دون/بلا قيد أو شرط "without restriction or condition"; عاجلًا غير آجل "sooner, not later"). Correlative negation with **لا...ولا**

[3] أدوات التوكيد

[4] https://www.sacredlearning.org/classroom/arabic/lesson_08.pdf

expresses *total negation* of two or more elements, creating balance and parallelism without giving preference to any option. This structure presents all alternatives as equally negated, adding clarity, cohesion, and rhetorical precision (لا حق ولا باطل "neither right nor wrong"; لا يقر ولا ينكر "he neither admits nor denies"). It signals that none of the listed items are included or valid, reinforcing the completeness of the negation.

3. Methodology

3.1 Data Collection

A sample of 436 Arabic CEN expressions using a variety of negative particles (devices) in conjoined and coordinated structures, binomials, and cliches containing antonyms or synonyms was collected by enclosing the particle in quotation marks in Google in addition to the author's own collection and an article about binomials (Al-Jarf, 2016b; Al-Jarf, 2025c). The distribution of the negation particles in the sample is as follows: لا ... ولا (47%), وليس (23% أو ... بلا (22%), and ما, ليس ولا, لا أو, لا ولن, ولا, لن ولن, بلا ولا, غير, مش, دون (8%). 17% of the expressions in the sample consisted of long stretches of discourse as opposed to self-contains expressions. 82% of the expressions contain correlative conjunctions, and 18% contain single particles. The expressions and sentences fall into different domains. Many of these expressions are idioms, proverbs, or Qur'anic phrases that are well-documented in Arabic literature and the media. Most of the items in the sample are in Standard Arabic but few are Colloquial phrases like "لا يودي ولا يجيب useless or ineffective" or "لا كاني ولا ماني neither ghee "kani" nor honey "mani", i.e., no excuses or explanations" are common in spoken dialects, and are used in context enough to understand their pragmatic meaning.

Although the sample predominantly consists of Standard Arabic expressions, a small number of colloquial forms containing the particles مش and مو were included. Despite the existence of the Standard Arabic equivalent وليس, these colloquial particles are widely used, highly frequent, and cannot be naturally replaced in actual discourse. Their inclusion reflects authentic linguistic usage and ensures that the dataset captures the full range of CEN expressions encountered in everyday communication. All other Standard Arabic expressions in the sample are also commonly used in daily oral and written communication, making the dataset representative of real-life linguistic practices.

3.2 Data Analysis

Each CEN expression was translated from Arabic to English by Microsoft Copilot (MC). Each expression and was translated into English using Microsoft Copilot (MC). MC was prompted by just saying translate the following into English, without explaining what the expressions were. Each translation given by MC were entered in a table, with rows representing the expressions and columns to mentioning the particle type in each phrase according to the negation particle it contains. Expressions containing the same particle were grouped together. First, each translation was evaluated in terms of accuracy. Next to each correct response, the category correct was entered in the next column and all correct responses were color coded and with all correct responses grouped together. Faulty responses were classified to semantic and syntactic errors. Semantic errors were classified into failure to understand the underlying meaning, failure to understand and convey idiomatic expressions, difficulty with polysemous words, polysemy and lexical ambiguity, faulty lexical choices, failure to provide an equivalent idiom or phrase. The syntactic and grammatical errors were classified into syntactic errors (faulty structure, incorrect part of speech), difficulties with correlative negation, faulty structure, faulty wording, incorrect part of speech or derivative, faulty choice of negative particles, additional errors in negative particles, faulty use of articles. Percentages of expressions correctly translated and percentages of expression containing each type of semantic and syntactic errors were computed. Some faulty translation contained one, two or 3 type of errors. So each type of error was computed under the category where it belongs. Descriptions of the errors are also reported qualitatively with illustrative examples. The strategies that MC used in translating each negative emphatic expression were classified into literal, partial, and conceptual translation, modulation and calque. Results were reported both quantitatively and qualitatively.

To assess reliability, two colleagues specialized in translation and linguistics independently classified a sample of MC translations. They went through the list of negative emphatic expressions in the sample and their equivalents and made judgments regarding the accuracy and classification of the translation equivalents. Classifications by all three evaluators were compared. Inter-rater agreement was 98%. Disagreements were resolved through discussion ensuring the reliability of the error categories and analysis.

4. Results

1.1 *4.1 Overall Accuracy*

Out of 436 Arabic contrastive, emphatic, negative expressions translated by Microsoft Copilot (MC), 65% of the total items in the sample were correctly translated by MC. The remaining 35% contained semantic and syntactic errors of varying types, including semantic misinterpretation, faulty particle choice, polysemy, idiomatic failures, and structural mismatches. Correct responses show varying percentages depending on the negation particle used: 89% of the expressions containing ما, ليس ولا, لا أو, لا ولن, ولا, لن ولن, بلا ولا, غير, دون, مش, 88% of the expressions containing بلا... أو, 69% of the items containing وليس, 53% of the items

containing ولا ... لا. This means that expressions containing the negation particles (ما, ليس ولا, لا أو, لا ولن, ولا, لن ولن, بلا ولا, دون, غير, مش & أو بلا...) were the easiest for MC to translate whereas show that expressions containing وليس & ولا ... لا expressions are comparatively the most difficult for MC to translate, being the largest category with about half the items of the total sample. Items translated correctly include religious/Quranic expressions as:

- ليس لهم من دونه ولي ولا شفيع They have no protector or intercessor besides Him.
- لن تخرق الارض ولن تبلغ السماء طولا You will Neither pierce the earth nor reach the sky in height
- لا تحاسدوا ولا تناجشوا Don't envy or deceive in trade
- لا رفث ولا فسوق Neither obscenity nor sin.

Short expressions as:

- لا حلو ولا مر Neither sweet nor bitter
- لا تبرر ولا تشرح Don't justify or explain
- لا مال ولا جاه – Neither money nor status
- لا وفيات ولا إصابات – No deaths and no injuries
- لا اكثر ولا اقل – No more and no less instead of no more, no less.
- الكيف وليس الكم Quality, not quantity.
- سهل مش صعب Easy, not difficult.
- بلا ماء أو كهرباء Without water or electricity
- بلا هوية أو انتماء Without identity or affiliation
- بلا يدين أو قدمين Without hands or feet

Long stretches of discourse (sentences) with contrastive negative emphatic expressions as:

- مع البيتكوين المكسب يتحقق عند الشراء وليس البيع With Bitcoin, profit is made at purchase, not sale.
- الناخبين يحسمون سباق الرئاسة وليس الديمقراطيين Voters decide the presidential race, not the Democrats
- اليوم العالمي للامتناع عن التدخين – لنزرع الغذاء، وليس التبغ World No Tobacco Day – Let's plant food, not tobacco

The overall accuracy rate of 65% is consistent with the linguistic complexity of CEMs in Arabic. MC gave more correct translations of structures with a single negative particle than correlative conjunctions, and when the structure has a transparent rather than an underlying meaning. This type of negation is not merely a syntactic structure; it is a semantic, pragmatic, and often cultural device that compresses meaning, conveys stance, and relies heavily on idiomatic usage. Therefore, MC succeeds when the negation is transparent, literal, and structurally simple. But it fails when the negation is idiomatic, culturally loaded, polysemous, or pragmatically marked. MC and other large language models (LLM) excel at surface-level lexical mapping but struggle with deep idiomatic interpretation and culturally embedded expressions.

4.2 Faulty translations

Data analysis revealed that 35% of the CEN expressions in the sample were mistranslated by MC. Some expressions have two or three semantic and/or syntactic errors. The mistranslated items reveal systematic and predictable weaknesses in MC's handling of Arabic CEN expressions. These errors are not random; they focus on specific linguistic phenomena that require semantic depth, idiomatic knowledge, and contextual interpretation. The distribution of errors across semantic, syntactic idiomatic, polysemous and lexical, particle-choice, faulty structure, faulty wording categories and others demonstrates that MC struggles most when negation interacts with cultural meaning, figurative language, or multiword expressions. The types of semantic errors that MC produces in translating CEN are described below.

4.21. Semantic Errors

Semantic errors constitute the largest category of mistranslations (45%), indicating that MC often struggles most when the meaning of the expression depends on contextual inference, figurative interpretation, or pragmatic nuance and when it fails to grasp the underlying meaning of negation structures. Many Arabic emphatic expressions encode implied meaning, evaluative stance, or pragmatic force that cannot be conveyed through literal translation. MC frequently interprets these expressions word for word, producing translations that are technically accurate at the word level but semantically incorrect. This pattern suggests that MC lacks the ability to perform deep semantic inference, especially when negation alters the idiomatic or pragmatic meaning of the phrase. The errors highlight MC's reliance on shallow semantic processing, surface lexical mapping and an inability to access deeper layers of meaning rather than contextual interpretation. This limitation becomes particularly evident in colloquial expressions, proverbs, and culturally specific idioms.

1) ***MC failed to understand and convey the meaning of idiomatic expressions***

Data analysis showed that the highest errors were in the ولا ... لا expressions (36%). These idiomatic expressions function as fixed or semi-fixed units whose meanings cannot be derived from their literal components. Accurate translation requires

three steps: recognizing the expression as a single idiomatic unit, suppressing the literal meaning, and retrieving the culturally appropriate English equivalent. MC fails at all three stages. As a result, it consistently produces word-for-word translations that are semantically incorrect, pragmatically inappropriate, or culturally nonsensical. These errors highlight MC's limited idiomatic competence and its inability to handle culturally embedded negation. The following examples illustrate typical mistranslations of idiomatic expressions by MC.

- بلا خوف أو وجل: Without fear or anxiety, instead of fearlessly
- لا إحم ولا دستور – No warning and no permission (colloquial), instead of come in without permission, or without announcing his arrival
- لا بيشقع ولا بيرقع – Neither tears nor patches (colloquial, useless) instead of He is not my parallel
- لا بيضة ولا غميضة – Neither egg nor hide-and-seek (colloquial, nonsense) instead of no food
- لا بيها ولا عليها – Neither with it nor against it instead of it is neither harmful nor beneficial.
- لا حس ولا خبر – No sound and no news instead of has been silent.
- لا حياء ولا خجل: Neither modesty nor embarrassment instead of shamelessly
- لا خلينا ولا بقينا: Neither stayed nor remained instead of did not spare or leave
- لا سمع ولا طاعة: No listening and no obedience, instead of we will not listen and will not obey.
- لا شغلة ولا مشغلة: No work and no engagement, instead no work and nothing to keep busy with.
- لا صايرة ولا دايرة – Neither happening nor circulating (colloquial) which actually means it never happened.
- لا طبيخ ولا نفيخ – Neither cooking nor puffing (colloquial, nonsense) instead of no food.
- لا فاقدين ولا مفقودين – Neither bereaved nor missing instead of whole and complete
- لا فروج ولا قروج – Neither exits nor entrances (colloquial, possibly nonsense) instead of having no food at all
- لا في العير ولا في النفير – Neither in the caravan nor in the battle (i.e., irrelevant) instead of good for nothing
- لا من تمة ولا من كمة = لا من فمه ولا من كمه – Neither from his mouth nor his sleeve (i.e., no source) instead of did not utter a single word
- لا من شاف ولا من دري – No one saw and no one knew instead of unknowingly
- لا من قريب ولا من بعيد – Neither from near nor far, which actually means "has nothing to do with the issue, neither closely nor from a far angle".
- لا وازع ولا ضمير – No restraint and no conscience instead or no conscience and no remorse.
- لا وراه ولا قدامه – Neither behind him nor in front of him which actually means empty handed
- لا يحل ولا يربط – Neither unties nor ties (i.e., powerless) instead of has no say in the matter
- لا يحللك ولا يبيحك – Neither absolves you nor permits you instead of will not forgive you
- لا يحور ولا يدور – Neither turns nor circles (i.e., static or clueless) which actually means stubborn and cannot be easily convinced.
- لا يزيد ولا ينقص – Neither increases nor decreases, instead of his presence will not add anything and his absence will not feel that something is missing.
- لا يصبحك ولا يربحك – Neither greets you nor benefits you (i.e., useless) instead of may you not have a good morning and
- لا يصد ولا يرد: Neither repels nor responds instead of speechless or is not respond
- لا يفهم ولا يستفهم Neither understands nor asks
- لا يقدم ولا يؤخر – Neither advances nor delays instead of does not make a difference
- لا يكل ولا يمل – Never tires and never gets bored, instead of tirelessly
- لا يمر ولا يحلي – Neither bitter nor sweet / Neither passes nor sweetens (i.e., does nothing) instead of neither harms nor bring benefits. Does nothing. Has no effective role
- لا يمر ولا يحلي Neither bitter nor sweet / Neither passes nor sweetens (أي لا يضر ولا ينفع).
- لا يهش ولا ينش" He Neither waves nor moves, instead of a weak person who does not and has no significance.
- لا يصف ولا يشف Neither describes nor heals

2) ***Failure to provide equivalent set idioms/phrases:***

A significant percentage of translation errors originates when MC encounters Arabic expressions that have well-established English equivalents (9%). Instead of retrieving the appropriate fixed phrase, MC produces literal translations that sound unnatural or distort the intended meaning. This indicates a lack of idiomatic competence and an inability to map Arabic formulaic expressions to their conventional English counterparts. The examples below demonstrate MC's failure to supply the correct set idioms or fixed expressions in English. Examples of Arabic expression with have set of fixed equivalents in English are:

- لا زائد ولا ناقص Neither more nor less instead of (no more, nor less).
- أخيرا وليس آخرا Finally, not lastly instead of (Last but not least).
- عاجلا أم آجلا Immediately, not delayed instead of (sooner or later).
- فضلا وليس أمرا Kindly, not as a command instead of As a favor, not as an order).
- أولاً وليس آخراً First, but not last instead of (first and foremost).
- بلا خوف أو وجل Without fear or anxiety instead of (fearlessly).
- بلا قيد أو شرط Without restriction or condition instead of (unconditionally).
- دون كلل أو ملل /بلا كلل أو ملل Without fatigue or boredom instead of (tirelessly).
- لا ولن – Neither now nor ever instead of never ever.
- لا يكل ولا يمل Never tires and never gets bored. Instead of tirelessly.
- لا يتكلم ولا يشتكي – Neither speaks nor complains (speechless).

3) ***MC had difficulty with polysemous words and lexical ambiguity***

Data analysis showed that in 36% of the errors, MC misinterpreted the intended sense of a word when the negation phrase relies on contextual cues. This issue is most evident in expressions involving polysemy, idiomatic usage, or cases where negation shifts the semantic scope of the phrase. These patterns indicate that MC struggles with sense disambiguation in emphatic and contrastive negation contexts, where structural cues frequently determine the correct interpretation.

- بالأفعال وليس بالأقوال باش يعرفوا حقيقة ميمي Through actions, not words, they'll know Mimi's truth (reality).
- بلا جهة أو مكان Without side (direction) or place.
- بلا حبوب أو بثور - Without grains (acne/spots) or pimples.
- بلا حجة أو دليل - Without excuse (evidence) or evidence (proof).
- بلا حدود أو قيود Without borders (limits) or restrictions.
- بلا دور أو وظيفة - Without role or function (job).
- بلا رادع أو وازع - Without deterrent (conscience) or restraint (remorse).
- بلا شواهد أو علامات - Without signs (evidence) or markers (marks)
- بلا مداورات أو محاورات - Without deliberations or discussions
- بلا منع أو رقابة - Without prohibition or oversight (control/surveillance)
- حملة السوداني هدفها إعمار الأعظمية وليس "تشييعها - The Sudanese (Al-Sudani, Prime Minister of Iraq) campaign aims to rebuild Al-Adhamiyah, not to "Shi'itize" it.
- سبب تسليط الأضواء على رونالدو وليس ميسي بعد ضياعهم لركلة - The reason the spotlight was on Ronaldo, not Messi, after they missed the penalty (kick).
- صفاء تام بلا تسويش ولا وساوس - Complete purity without distortion or whispers (masking noise)
- لا تشرق ولا تغرب - Neither rises (go east) nor sets (go west).
- لا حجة ولا دجة – No argument (pilgrimage) and no (merchant).
- لا حسيب ولا رقيب - Neither overseer nor monitor
- لا حول ولا طول - No power and no ability (means, resources),
- لا نظام لا قيادة - Neither system (order) nor leadership (command).
- لا يتبدل ولا يتغير - Neither changes nor alters (wavers).
- لا يغفل ولا ينام - Neither neglects (slumbers) nor sleeps.
- ليس غافلا ويرى اللحظة - He is not heedless (inattentive) and perceives the moment.
- ما هو الشيء الذي له جلد وليس حيوانا، وله ورق وليس نباتا، وله لسان وليس انسانا؟ وما هو الطائر الذي لا يبيض ويلد؟ What has skin but is not an animal, has papers (leaves) but is not a plant, has a tongue but is not human? And what (which) bird does not lay eggs but gives birth?
- مقبل غير مدبر & مقبلين غير مدبرين - Approaching (going forward), not retreating &(going backwards).

4) ***Rendering faulty lexical choices***

Faulty lexical choices constituted 25% of the total errors in the sample. They reflect errors where MC selects an English equivalent that is grammatically correct but semantically inappropriate. These mistakes often arise when MC fails to capture the contrastive or emphatic force of the Arabic expression. Instead of producing a natural English equivalent, MC generates literal or near-literal translations that weaken or distort the intended meaning. This pattern indicates that MC does not consistently map Arabic emphatic structures to their established English counterparts, especially when the expression carries rhetorical or evaluative weight. Examples of faulty lexical choices are:

- اتحاشيت الجدال ليس خوفا ولكن كي أريح واستريح avoided the argument not out of fear, but to find peace and rest.
- فضلا وليس امرا A favor, not a command (as a favor not as an order).
- قرار حكومي بتغيير العدادات القديمة إجباريا وليس اختياريا A government decision (Directive/mandate) to replace old meters mandatorily, not optionally.
- ممكن بالتعلم والتدرج.كيف تجعل إيمانك وليس صلاتك فقط؛ صفاء تام بلا تشويش ولا وساوس وحصول السكينة . How to make your faith—not just your prayer—a state of pure clarity without confusion or whispers, and attain (achieving) serenity. It's possible through learning and gradual practice.
- ما سبب ألم القلب مع أنه ألم خفيف وليس حاد جدا What causes heart pain even though (even when) it's mild, not very sharp?
- ما يجري في غزة إبادة وليس قتالاً What's happening in Gaza is genocide, not combat (fighting).
- هل فعلاً الشماغ يُغسل يدوياً وليس بالغسالة؟ Is it true that the shemagh (men's headdress) should be washed by hand, not in the washing machine (washer)?
- هناك ترقب لإنتاج ألعاب سعودية تلقى رواجًا عالميًا وليس محلياً فقط There is anticipation for Saudi-made games to gain global popularity, not just local (not only local).

5) ***Final Remarks on Semantic Errors***

MC tended to translate word for word, rather than giving the fixed English equivalent or a semantic equivalent.

4.2.2 Syntactic and Grammatical Weaknesses

Syntactic and grammatical errors demonstrate that MC sometimes mirrors Arabic structure too closely, producing English translations that are unnatural or structurally awkward. These errors suggest that MC relies on syntactic transfer rather than target-language restructuring, a limitation that becomes more pronounced in longer sentences or in expressions where negation interacts with discourse-level meaning. The error data analysis showed the following syntactic and grammatical weaknesses.

I. MC's Difficulties with Correlative negation

A central observation emerging from the data is MC's difficulty with correlative negation, particularly the ولا ...لا construction which constitute about half of the data. This structure frequently functions as a fixed or semi-fixed idiomatic unit whose meaning cannot be derived from its parts. MC consistently interprets it as two independent negations, resulting in literal translations that fail to capture the intended pragmatic or cultural meaning. This pattern suggests that MC lacks robust mechanisms for recognizing multiword expressions and for suppressing literal interpretation when idiomatic meaning is required. The high error rate in this category underscores the importance of idiomatic competence in translation systems, especially for languages like Arabic where negation often carries rhetorical or evaluative force.

II. Examples of Faulty structure

Faulty structure refers to errors in sentence order, sentence construction, syntactic arrangement, and direct transfer of Arabic structure into English. They constituted 26% of the total errors in the sample. Structural errors occur when MC mirrors Arabic sentence structure too closely, producing English sentences that are grammatically awkward or structurally unnatural. These errors reveal that MC often relies on direct syntactic transfer rather than reconstructing the sentence according to English word order, clause hierarchy, or contrastive conventions. Such issues are more pronounced in longer expressions or when negation interacts with discourse-level meaning. The following examples illustrate typical cases of faulty structure.

- ما هو الشيء الذي له جلد وليس حيوانا، وله ورق وليس نباتا، وله لسان وليس انسانا؟ وما هو الطائر الذي لا يبيض ويلد؟ What has skin but is not an animal, has paper (leaves) but is not a plant, has a tongue but is not human? And what (which) bird does not lay eggs but gives birth
- حقوقنا الآن وليس غدا Our rights are for now, not tomorrow (our rights now, not tomorrow).
- في الخَمر معنى ليس في العِنب In wine there is meaning not found in grapes (In wine there is a meaning that is not found in grapes).

- أَنَا مِنَ الْعَرَبِ، وليس الْأَعْرَابُ مِنّي I am of the Arabs, not the Bedouins from me.
- السبب وراء بيعنا إعلانات، وليس نتائج بحث The reason we sell ads is not search results.
- شراكة وليس بيع أصولA partnership, not asset sales (Not selling assets).
- الطبقة الوسطى هي التي شكلت جماعة الإخوان وليس الطبقة العامة من الشعب The middle class formed the Muslim Brotherhood, not the general public (The middle class is the one that formed the Muslim brotherhood not the general public).
- طربال سيارات تفصيل وليس مستورد Car tarpaulin is custom-made, not imported (A custom-made not an imported Car tarpaulin).
- لأول مرة مصر تستهدف التضخم وليس سعر الصرف For the first time, Egypt targets (Is targeting) inflation, not the exchange rate.
- نفخ البالونات بالهواء وليس غاز الهيليوم Balloons are inflated with air, not helium gas 9 Inflating balloons with air, not helium).
- اليونان تسير عكس العالم رفع أيام العمل لـ 6 أيام وليس 4 Greece is going against the world (is opposing is doing opposite of the world) —raising workdays to 6, not 4.
- يتصل بي كل يوم شخص لا أعرفه وليس من البشر Every day someone calls me whom I don't know — and who isn't human (Every day a guy whom I do not know and who is not human calls me).
- اليوم العالمي للامتناع عن التدخين – لنزرع الغذاء، وليس التبغ. World No Tobacco Day (The No-Tobacco Global Day)– Let's grow food, not tobacco.
- لا ترد ولا تستبدل – Don't return or exchange (cannot be returned or exchanged).

III. Example of Faulty wording

Faulty wording refers to errors in **word choice, English phrasing**, **style**, and **rhetorical force**, even when the overall sentence structure is correct. Faulty wording in MC translation constituted 11% of the errors. It arises when MC selects English phrasing that is technically grammatical but semantically weak, unnatural, or stylistically inappropriate. These translations often fail to convey the rhetorical force or emphatic contrast encoded in the Arabic expression. Instead of producing idiomatic English, MC generates literal or near-literal wording that diminishes the intended meaning. The examples below highlight instances where the choice of wording results in inaccurate or awkward translations. Examples of expressions with faulty wording are:

- بلا قيد أو شرط - Without restriction or condition (unconditionally).
- بلا كلل أو ملل - Without fatigue or boredom (Tirelessly)
- لا تنفع ولا تضر - Neither benefits nor harms (does not benefit nor harm)
- لا ضرر ولا ضرار - No harm and no reciprocal harm (no harm to oneself or to others)
- لا أكل ولا شرب - Neither food nor drink (no food or drink)
- لا تسبوا ولا تلعنوا - Neither insult nor curse (do not call names and do not curse)
- لا تفني ولا تستحدث - Neither perishes nor is created anew (Matter is Neither created nor destroyed).
- لا يعد ولا يحصى - Neither counted nor measured (uncountable and unmeasurable)
- لا يباع ولا يشترى - Neither sold nor bought (cannot be sold or purchased)

IV. Faulty choice of negative particles

Data analysis indicated that MC frequently chose the wrong English negative particle (e.g., "neither…nor," "no," "not," "without") in 21% of the error data. MC frequently chooses a particle that does not match the semantic or pragmatic function of the Arabic negation. This indicates that MC does not fully understand the semantic function of the Arabic negation particles, the contrastive function of the expression, or the pragmatic weight of emphatic negation. As a result, the English translation often fails to convey the intended emphaic or rhetorical effect. This category of errors is particularly important because it affects the interpretive accuracy of the translation, not just its form. Accurate negation particle choice is essential for preserving the contrastive and emphatic force of the original expression, and errors in this category often result in weakened or distorted translations. Examples of faulty choice of negation particle are:

- بلا تقدم ولا تأخر (Without advancement or delay) (Neither going forward nor backward).
- بلا خطأ ولا صواب (Without error or correctness) (No right no wrong = Neither right nor wrong).
- بلا صوت ولا صورة - Without sound or image (No audio no video or Neither audio nor video).
- بلا عمل ولا راحة (Without work or rest (No work nor rest = Neither work no rest).
- بلا نهاية ولا بداية (Without end or beginning (No beginning no end).

- لا اتصال ولا ألو - Neither connection nor hello (no contact and no calls).
- لا أكل ولا شرب – Neither food nor drink, (no food or drink or without food or drink).
- لا تراجع ولا استسلام - Neither retreat nor surrender (no going back and no surrender).
- لا ترد ولا تستبدل – Don't return or exchange, (cannot be returned not exchanged).
- لا تسبوا ولا تلعنوا: Neither insult nor curse (do not call names or curse).
- لا تعب ولا نصب: Neither tiredness nor fatigue (no fatigue and no exhaustion).
- لا تفني ولا تستحدث – Neither perishes nor is created anew, (cannot be destroyed or re-created).
- لا حرب ولا سلام (Neither war nor peace) (no war and no peace).
- لا حلول ولا مشاكل (Neither solutions nor problems) (no solutions and no problems).
- لا خلّى ولا بقّى (بالتشديد): Neither spared nor left behind (did not leave or retain).
- لا دراسة ولا تدريس – Neither studying nor teaching (teaching or learning).
- لا يباع ولا يشترى – Neither sold nor bought (cannot be sold or purchased).
- لا يبيض ولا يلد – Neither lays eggs nor gives birth (does not lay eggs nor give birth).
- لا يتكلم ولا يشتكي – Neither speaks nor complains (does not speak nor complain).
- لا يسر ولا يفرح – Neither delights nor rejoices (does not bring delight not happiness)
- لا يسمع ولا يرى – Neither hears nor sees (does not hear or see)
- لا يضر ولا ينفع – Neither harms nor benefits **(** does not do harm nor brings benefits).

V. Examples of Faulty use of Articles

Errors in article usage constituted 4% of the total errors. They reflect MC's difficulty in mapping Arabic definiteness onto English, where articles carry semantic and discourse-level functions that do not exist in Arabic morphology. MC frequently inserts or omits articles in ways that distort meaning, create ambiguity, or produce unnatural phrasing. These mistakes indicate limited sensitivity to English definiteness, generic reference, and contrastive emphasis. The following examples illustrate common patterns of faulty article use.

- وليس الذكر كالأنثى And the male (a male) is not like the female (a female).
- جبران خليل جبران "وليس اليوم سوى ذكرى الأمس، وليس الغد سوى حلم اليوم "Today is but the memory of yesterday (Today is but a memory of yesterday), and tomorrow is the dream of today (and is a dream of tomorrow) - Khalil Gibran,
- أبحث في الكتب عن التجربة الإنسانية وليس عن حدوتة I search in books for the (delete) human experience, not for a tale.
- تحاشيت الجدال ليس خوفا ولكن كي أريح واستريح I avoided the argument (arguing) not out of fear, but to find peace and rest.
- هل فعلاً الشماغ يُغسل يدوياً وليس بالغسالة؟Is it true that the shemagh (a shemagh, men's headdress) should be washed by hand, not in the washing machine (washer)?

VI. Faulty part of speech and derivatives

Faulty part of speech and derivatives constituted 5% of the errors. These errors occur when MC misidentifies the grammatical category of a word or selects an incorrect derivative form. Such mistakes distort the semantic role of the expression and often weaken the emphatic or contrastive function of the negation. Although fewer in number, these errors highlight gaps in MC's morphological and syntactic awareness as in the following examples:

- لا تعد ولا تحصى Neither counted nor measurable, instead of cannot be counted nor measured.
- بلا رادع أو وازع Without deterrent or restraint instead of no conscience or remorse.
- لا أشرا ولا بطرا Neither arrogance nor vanity instead of neither driven by evil intentions nor by noble cause.
- لا عيب ولا حرام Neither shame nor sin instead of neither shameful nor sin.
- لا غالب ولا مغلوب Neither victor nor vanquished, instead of neither victorious or defeated, neither a winner nor a loser.
- لا تنفع ولا تضر Neither benefits nor harms, instead of neither beneficial not harmful**).**
- لا عيب ولا حرام – Neither shame nor sin instead of it is nether shameful or abominated.
- لا غالب ولا مغلوب – Neither victor nor vanquished instead of no victorious nor defeated.
- لا تُبقي ولا تذر - Neither leaving nor sparing instead of does not leave or spare anything.

VII. Final remark on Syntactic, Grammatical Errors

Taken together, these findings highlight the linguistic richness and structural complexity of Arabic CEN, as well as the limitations of current AI translation systems as MC in handling such linguistic structures. The results demonstrate that while (LLM can successfully translate literal and transparent negation, they struggle with idiomatic, culturally embedded, and pragmatically marked expressions. This suggests that future improvements in AI translation will require enhanced modelling of idiomatic language, multiword expressions, and pragmatic inference, particularly for languages with rich negation systems like Arabic.

5. Discussion

5.1 Accurate vs Inaccurate Translations by MC

MC achieved an overall accuracy rate of 65% in translating Arabic CEN expressions, indicating that it performs reasonably well with straightforward, transparent forms of emphatic negation. These cases typically involve literal or single-particle negation (e.g., بلا، دون، لن، ما) or simple contrastive structures such as "X, not Y," which map directly onto English and require minimal semantic inference. However, MC shows consistent difficulty with expressions whose meaning is idiomatic, cultural, or contrastive. Emphatic negation in Arabic is not merely a syntactic device; it is a semantic and pragmatic mechanism that compresses meaning and conveys evaluative stance. Literal translation strategies—commonly used by LLMs—are insufficient for capturing these deeper layers of meaning.

The most prominent source of error appears in correlative negation, particularly constructions containing ولا ... لا. These often function as fixed or semi-fixed expressions whose meaning is not compositional. It seems that MC treated them as two separate negative elements rather than a unified semantic unit, resulting in literal translations that fail to capture their idiomatic or pragmatic force. This pattern reflects a broader limitation in MC's ability to recognize multiword expressions and formulaic sequences, especially when they carry cultural or colloquial significance.

The distribution of correct versus incorrect translations across CEN particle types reinforces this observation: literal, non-idiomatic forms yield high accuracy, whereas idiomatic, contrastive, or culturally embedded expressions show markedly lower performance. This indicates that MC's errors are systematic rather than random, reflecting a reliance on surface-level lexical mapping rather than deeper semantic or pragmatic processing.

Overall, the findings reveal a clear divide between literal negation - which MC handles relatively well - and idiomatic or culturally loaded CEN expressions, which require contextual interpretation and recognition of fixed expressions. These results highlight the need for improved handling of idiomatic negation and multiword units in AI translation systems, particularly for Arabic, where CEN carries significant semantic and pragmatic weight.

5.2 Comparison with prior studies

The results of this study both align with and extend previous research on negation and emphasis in Arabic and English. While earlier studies have examined negation from structural, rhetorical, translational, and computational perspectives, none have addressed the specific challenges posed by CEM expressions in AI-generated translation. The present findings therefore fill a notable gap in the literature.

The results are consistent with structural and grammatical analyses of Arabic negation (Mohammed & Al Marsumi, 2022; Alshargabi et al., 2022; Al Hilali & Hussein, 2020), which emphasize the complexity of negative particles and the syntactic constraints governing their use. Likewise, corpus-based and sociolinguistic studies (Habib, 2023; Kahlaoui, 2019; Alruwaili & Sadler, 2018) have shown that Arabic negation is highly variable, context-dependent, and closely tied to discourse function. The current study reinforces these observations by demonstrating that AI systems struggle most with structurally complex and context-sensitive forms of negation, particularly correlative constructions such as ولا ...لا, which frequently carry emphatic or contrastive meanings. The semantic and idiomatic errors observed here further support the claim that Arabic negation cannot be reliably interpreted through surface-level grammatical cues alone.

The findings also align with research on emphatic and rhetorical structures in Arabic (Alhamdan, 2023; Al Jarf, 2025; Abbas, 2023; Al Ali, 2009), which highlights the evaluative, pragmatic, and discourse-level functions of emphasis. This study shows that AI translation systems consistently fail to capture these rhetorical and pragmatic dimensions, especially when emphatic negation encodes idiomatic meaning, cultural references, or implicit stance.

Additionally, prior work on translation challenges in literary and religious texts (Farghal & Kalakh, 2017; Benkharafa, 2020; Almoghirah, 2024; Masboogh & Mesbahi Hamrah, 2024) has emphasized the need for interpretive depth, cultural knowledge, and rhetorical sensitivity when rendering emphatic meaning across languages. The present study extends these insights to AI

translation, showing that AI systems struggle even more than human translators with idiomatic CEM expressions. Whereas human translators rely on contextual reasoning and cultural competence, MC frequently defaults to literal, word-for-word renderings.

Finally, computational studies on negation in MT and NLP (Abuhammad & Ahmed, 2024; Tang et al., 2021; Sennrich, 2016; Morante & Blanco, 2020; Hossain et al., 2020; Alharbi, 2020; Blanco & Bott, 2014) have identified persistent challenges such as negation scope detection, idiomatic negation, and polarity interaction. The results of this study strongly support these findings. The high rate of semantic, idiomatic, and particle-choice errors demonstrates that even advanced AI models struggle with negation scope, multiword negation, and context-dependent interpretation. MC's difficulty with polysemy and idiomatic expressions further aligns with evidence that neural systems lack robust mechanisms for handling figurative or culturally embedded language.

5.3 Comparison with the Author's Studies on MC translations

This study revealed that MC has rendered correct equivalents to 65% of the contrastive, emphatic, negative expressions in the sample. In previous studies by the author, MC had variant accuracy in translating technical terms and metaphorical expressions. In translating MC rendered 91% correct equivalents to English sleep terms, 79% correct equivalents to English formulaic expressions and 48% of the Arabic terms and formulaic expressions respectively (Al-Jarf, 2025s); 72% of the common names of chemical compounds (Al-Jarf, 2025l); 68.6% of the medical terms (Al-Jarf, 2024b); 52% of the expressions of impossibility (Al-Jarf, 2025q); 46% of the Arabic folk medical terms with om and abu (Al-Jarf, 2025r); 43% of the Arabic grammatical terms used metaphorically (Al-Jarf, 2025j); 29% accurate translations of the Gaza-Israel terminology (Al-Jarf, 2025b); Zero (0%) correct equivalents to Arabic abu-brand names using different prompts (Al Jarf, 2025f). In addition, MC rendered 52% correct equivalents to zero-expressions, 31% faulty definite equivalents, and 5% faulty Arabic equivalents with different derived forms *(*Al-Jarf, 2025t). In translating metonymic abu & umm animal and plant names, MC gave correct equivalents to 46% of the items in the no-domain prompt, 44% in the domain, less than 3% correct responses across the metonymic list; 70% faulty equivalents of the *umm*-names, translated *Abu* as "father" in 46%, transliterated the noun following Abu in 57%, and misread metonymic names as personal names in 55% (Al Jarf, 2025i). In decoding and interpreting encrypted Arabic on Facebook and YouTube, MC yielded 56% correct responses. In the political sample, MC gave 16% partial, and 27% faulty responses. In the COVID-19 sample, MC gave 60% correct, 25% literal, 10% partial, 5% omissions (Al-Jarf, 2025e). In translating educational Arabic articles to English, GT's translation of full texts sounds natural, uses good style and sentence structure, but there were contextual and semantic inaccuracies. GT had difficulty translating polysemes that have general and specialized meanings and two or more English equivalents. GT had difficulty with polysemous words like التحكيم والمحكمون and رسالة and failed to match the Arabic term with an English equivalent used in educational contexts. (Al-Jarf, 2025a).

Across these studies, MC's accuracy fluctuated systematically depending on the linguistic domain, the type of translation unit, and the degree to which the expressions were represented in its training corpus. High accuracy was observed in domains with fixed, standardized terminology, while culturally embedded, idiomatic, or metaphorical expressions produced substantially lower accuracy. These patterns indicate that MC relies heavily on literal lexical matching and struggles with polysemy, figurative meaning, and culturally specific terminology. The variation in performance reflects the distinct linguistic competencies required by each domain. Technical terminology—such as sleep terms, chemical compounds, and medical vocabulary—relies on stable, high-frequency lexical equivalents that appear frequently in training data, enabling MC to retrieve them reliably. In contrast, idiomatic expressions, metaphorical grammatical terms, folk medical names, and metonymic *abu*/*umm* constructions require cultural knowledge, figurative interpretation, and contextual inference—abilities that MC does not consistently demonstrate.

The variation in accuracy across studies is also influenced by the two-year span over which the author conducted these investigations. During this period, MC's performance improved noticeably due to system updates, expanded training data, and iterative refinement. Sustained interaction with the author - through repeated corrections, discussions, and prompting - contributed to more stable and contextually appropriate outputs, functioning as informal user-driven fine-tuning.

5.4 Why MC gives literal word for word translations and mirrors Arabic word order

MC generates translations by identifying each Arabic word or phrase, mapping it to the most frequent English equivalent, and preserving the original structure whenever possible. This strategy works for transparent, literal negation but fails when the expression is idiomatic, compressed, rehetorical, or requires interpretation rather than direct lexical mapping.

A major source of error is MC's difficulty in recognizing multiword idiomatic units. Expressions such as لا يكل ولا, لا حس ولا خبر يمل, and لا فيها ولا عليها are not compositional sequences of " لا+ X + ولا+ Y" but fixed expressions with unified meanings ("no trace," "tirelessly," "it makes no difference"). When MC fails to detect the expression as a single unit, it translates each part

literally and preserves the Arabic structure, producing translations/euequivalents that are grammatical but semantically inaccurate.

MC is also biased toward structural mirroring. Because much of its training data consists of roughly aligned parallel sentences, MC tends to maintain clause order, replicate coordination patterns (e.g., X ولا Y → "neither X nor Y"), and preserve overt negation markers even when English prefers more compact or implicit phrasing. This is why MC often produces literal renderings such as "never tires and never gets bored" instead of the idiomatic "tirelessly."

Pragmatic and rhetorical functions further challenge MC. Arabic emphatic negation frequently conveys stance, evaluation, sarcasm, or intensification. Although MC recognizes the surface form (e.g., لا...ولا, ليس...بل, الكم وليس الكيف), it does not reliably infer the rhetorical purpose or the speaker's evaluative intent. As a result, it preserves the structural skeleton while missing the pragmatic force.

Polysemy under negation intensifies these problems. When a polysemous word (e.g., حول، طول، جهة، حدود، حجة) appears in an emphatic or contrastive structure, MC often selects the globally frequent sense rather than the contextually appropriate one. This leads to errors such as translating بلا حجة أو دليل as "without excuse or evidence" or لا حول ولا طول as "no power and no ability," missing the idiomatic meaning. Because a wrong sense combined with negation reverses or distorts the intended polarity, MC defaults to literal meanings as a "safer" option.

Ultimately, MC processes tokens and surface patterns more reliably than idioms, pragmatics, or discourse-level meaning. It is better at mapping than interpreting, and it lacks an internal mechanism for flagging expressions as idiomatic or rhetorical. This study documents these systematic failure modes, particularly in لا...ولا constructions, polysemy under negation, particle choice, emphatic contrast, and idiomatic or colloquial negation.

6. Recommendations

Based on accurate and inaccurate translations of CEN expressions in the sample, the current study recommends that translation instructors teach emphatic negation as a semantic–pragmatic unit. Students should learn that structures like لا ... ولا often function idiomatically and require interpretation rather than literal rendering. Student and professional translators should be trained to avoid mirroring Arabic syntax in English when the meaning is idiomatic or rhetorical. Since MC tends to produce literal, word-for-word translations, translators should treat MC outputs involving emphatic negation as preliminary drafts requiring human revision, not as final equivalents. Translation students should therefore use AI with caution, post-edit AI translations carefully, and explicitly specify the type of phrases to be translated and the context in which they occur. Students can also develop thematic glossaries of idiomatic negation—lists of common Arabic CEN expressions and their functional English equivalents—to support both human and machine translation. In addition, they should consult monolingual and bilingual general and specialized dictionaries when dealing with binomials, idioms, metaphorical expressions, and fixed expressions containing negation particles (Al-Jarf, 2020; Al-Jarf, 2014a; Al-Jarf, 2014b Al-Jarf, 2011).

Based on the systematic error patterns in the translation of CEN expressions containing a variety of negation particles, this study recommends that developers of Arabic–English MT systems expand training data for colloquial and idiomatic negation. Many errors occurred in culturally embedded or colloquial expressions, indicating the need for curated datasets that include idiomatic negation to help AI models generalize beyond literal forms. The high error rate in لا ... ولا and other emphatic structures highlights the need for models that can recognize idioms, multiword units, and fixed expressions rather than translating them word for word. The inconsistent choice of English negative particles (e.g., *no, not, neither…nor, without*) demonstrates the need for more precise alignment between Arabic negators and their English functional equivalents. Polysemous words embedded in negative structures require context-sensitive interpretation; therefore, AI models such as MC should integrate stronger sense-selection mechanisms and contextual embeddings. The failure to capture implied meaning, rhetorical force, or cultural nuance underscores the need for pragmatic inference and discourse-level modeling. Since emphatic negation often encodes contrast, models would also benefit from training objectives that explicitly capture contrastive relations.

Furthermore, since many errors involved colloquial expressions, future research any examine how different Arabic dialects encode emphatic negation and how AI systems handle them. Testing multiple AI systems as DeepSeek, Gemini, Google Translate, DeepL … etc. would help determine whether the observed weaknesses are model-specific or systemic. Psycholinguistic studies on human processing of emphatic negation could clarify how humans interpret Arabic CEN expressions compared with AI systems. Building a specialized corpus of emphatic negation examples - annotated for idiomaticity, pragmatics, and contrast - would support future MT research. Tracking improvements across model versions would also reveal whether AI systems are learning to handle emphatic negation more effectively over time.

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