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# Professional translators' use of CAT tools in Saudi Arabia: usability perceptions, realities and difficulties

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Though computer-assisted translation (CAT) has gained increasing popularity, profiling the realities of its uses is still under-explored in some contexts. This study investigated professional translators' perceptions and actual uses of CAT tools in Saudi Arabia, the translation text types they commonly use these applications with, their purposes for using them, and the challenges they encounter. The study also looked at the role of gender and work status (i.e., being an employee vs. a freelancer translator) in translators' CAT use. We collected quantitative and qualitative questionnaire data from 44 professional translators working in Saudi Arabia. The results showed the translators' high degree of dependence on CAT and frequent uses of multi-purpose or integrated CAT applications, simple machine translation programmes, and online dictionaries and specialized terminology databases. They reported that such uses vary depending on text types. Translators' work status rather than gender was found to influence some dimensions of their dependence on CAT; employee translators reported higher uses of CAT than freelancers. A number of purposes for using CAT were reported, including: translating specialized texts, verifying human translation accuracy, finding term meanings, ensuring terminological consistency, managing collaborative translation projects, and building glossaries. The translators also referred to some text-related challenges and gaps encountered when using CAT applications, and to their cautious use of AI programmes. The paper discusses these results and their implications to translator training.

### KEYWORDS

AI-assisted translation, CAT tools, translation applications, translation automation, workplace digitalization

## 1 Introduction

Research on the professional translator experiences and roles is an area of utmost importance to their training. "Workplace research" is another name that could be used to describe this research area which could be of very important implications to translator training (Abdel Latif, 2020). Providing translation trainees with effective training requires understanding the different professional translators' practices (Sakamoto et al., 2017). According to Ehrensberger-Dow (2014), "workplace studies can be motivated by a pedagogical interest in knowing what professional translators do, in order to better prepare students for their future profession" (p. 380).

Technological applications are gaining popularity in translation work environments. There have been turning historical points in using and integrating technology into translators' work. The initial development occurred in the 1950s through the advent of the early rule-based machine translation systems, but these were of poor output quality (Gaspari, 2024; Hutchins, 2003). Machine translation systems continued to develop gradually over the decades following the 1950s. The turn of the century witnessed the rise of statistical systems drawing upon large corpora of bilingual texts in generating translations, and further attempts in improving output quality have eventually led to the emergence of neural machine translation systems (Gaspari, 2024). These developments have contributed to an increasing use of translation technologies.

A main research strand concerns translators' use of computer-assisted translation (CAT) tools in professional tasks. CAT is a term commonly used to refer to the translation tasks in which human translation is assisted by computer software (Bowker and Fisher, 2012). Various classifications of CAT tools have been proposed (e.g., Alotaibi, 2020; Bowker and Fisher, 2012; Hutchins, 2003; Kornacki, 2018; Tarasenko et al., 2020). Bowker and Fisher's (2012) well-known taxonomy includes the following CAT types: concordancers, machine translation, translation memory and translation management software. Besides, Alotaibi (2020) categorized CAT applications into the following four types: (a) translation memory software storing the translations of text parts in segments, and suggesting similar text segments from previous translations; (b) terminology management software proposing translations related to terms, and allowing translators to create a retrievable term database relevant to a particular field; (c) project management software with collaboration functions supporting translation team work in real-time tasks; and (d) supporting tools such as optical recognition software converting text image into an editable text and a machine translation engine.

Despite the vast growth in translation industry in Saudi Arabia (Fatani, 2009), there has not been much research on the use of CAT tools by professional translators working in it. The previous few relevant studies (e.g., Althabaity, 2024; Aluthman, 2024; Al Qahtani, 2023) had limited research scopes. Attempting to address some of the unexplored research gaps, the present study investigated some dimensions related to the status quo of using CAT applications by professional translators in Saudi Arabia.

## 2 Factors influencing technology use

Some well-established models have been proposed to interpret individuals' use of technology and the factors accounting for it. One of these frameworks is the technology acceptance model (TAM) which was introduced by Davis (1989). This model explains the relationship among attitudes, intentions and behaviors, and it has received support for its robust description of technology acceptance and use (Osman et al., 2013). The TAM conceptualizes people's technology acceptance as a construct with two main belief dimensions: perceived usefulness of the target technology and the ease of its use. According to the model, these two belief dimensions impact other related dispositional and behavioral variables such as the attitude toward using technologies and the behavioral

intentions to use them, which lead to their use at the end (i.e., actual use of the target system or technology).

In addition to the attitude-intention-behavior relationship explained in the TAM, some other potential correlates of technology use are to be considered (Al-Marroof et al., 2020). Such correlates or predictors are explained in the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. (2003). The UTAUT theory offers a more comprehensive framework for understanding individuals' intentions to use technology. It indicates that technology use is associated with four main factors which are performance expectancy, effort expectancy, social influence, and facilitating conditions such as the availability of organizational or technical support. According to the UTAUT, these factors are moderated by some demographic and contextual variables such as age, gender, experience, and voluntariness of use.

In the translation field, the role of some factors in translators' use of technologies remains unclear. For example, the demographic and contextual variables potentially predicting translators' use of CAT were not addressed in the previous CAT studies depending on the TAM or UTAUT (e.g., Dianati et al., 2022; Salloum et al., 2024). Guided by both the TAM and UTAUT, the present study explored how translators' perceptions and use of CAT are influenced by their gender and work status (i.e., being an employee vs. being a freelancer).

## 3 Previous studies

Professional translators' use of CAT has been researched in various international contexts. For example, the questionnaire data in Alonso's (2015) study revealed that professional translators in Spain extensively use all types of technologies in their translation tasks, particularly translation memory and machine translation software. The two studies reported by Christensen and Schjoldager (2017) and Bundgaard and Christensen (2019) were concerned with the Danish context. In Christensen and Schjoldager's (2017) study, most professional translators in Denmark reported using translation-memory applications combined with terminology management ones, and making little use of machine translation software due to low quality outputs. On the other hand, Bundgaard and Christensen's (2019) observational data showed the translators' use of consultation resources while editing machine translated technical texts. More recently, Sycz-Opoń (2024) found that 83 % of Polish translators depend on online dictionaries, and their purpose for that is to verify word and phrase meaning.

Some other studies reported cross-cultural findings about translators' use of CAT. Surveying machine translation use and perceptions with 89 respondents from 15 language departments at the European Commission and interviewing 10 of them, Rossi and Chevrot (2019) found that some translators are not enthusiastic about using machine translation due to factors such as low-perceptions of task performance autonomy and social influences limiting technology acceptance. In a large-scale study, O'Brien et al. (2017) surveyed professional translators' experiences with CAT tools, focusing on whether these tools had annoying or missing features. In this study, many translators reported their

frustrating experiences in using CAT tools due to complex user interface features such as the lack of intuitive navigation, poor user-friendliness, excessive mouse clicks needed carrying out simple commands, and segmentation with their insufficient merging and splitting options.

In two studies, Farrell (2022, 2024) surveyed the use of Artificial Intelligence (AI) by professional translators from multiple countries. His two studies indicate that the respondent translators gave greater preference for depending on traditional machine translation software over AI. In the latter study, for instance, only 29.4% of the respondent professional translators reported incorporating AI into their workflow. Their main purpose for using AI was fostering translation quality rather than boosting its productivity. In their review of 46 empirical studies on using CAT, Shadiev et al. (2024) identified 22 distinct CAT applications with Google Translate being the most commonly used one.

Research has also addressed Arab translators' use of CAT applications. For example, in her study about the use of CAT by translators in Egypt, Mahfouz (2018) found that the main applications they use were e SDL Trados, Wordfast, Omega T and MemoQ. She also found that translators depend more on these applications for translating technical texts, and they generally view them more suitable for Arabic–English than English–Arabic translation. In Mohammed et al.'s (2020) study, the Yemeni professional translators showed a positive attitude toward CAT applications, and were generally capable of using them easily. Similarly, Bounaas's (2023) study revealed the Algerian translators' positive attitude toward CAT applications and awareness of them. A few relevant studies have adopted a cross-Arab approach to collecting data. For example, Alotaibi (2020) looked at Arab translators' evaluation of the usability of CAT applications. While her participant translators reported general satisfaction with the global usability of these tools, they had the lowest scores were on their learnability scale. Besides, Awadh (2023) investigated the challenges faced by Arab translators in using CAT tools. A mixed-methods approach was adopted, consisting of a 67-item questionnaire administered to 104 translators from various Arab countries, along with interviews conducted with 20 translators to explore potential solutions to the identified challenges. The findings revealed that only a limited range of CAT tools was in use, with just 19.03% of the participants reporting that they used such tools. This relatively low percentage may be attributed to several challenges, including issues related to CAT tools themselves, personal skills, translation memory, and technical difficulties.

Regarding the Saudi context where the present study was conducted, a few studies have been conducted on professional translators' use of CAT applications. This does not match the rapid growth in translation industry in Saudi Arabia. Fatani (2009), for instance, noted such growth in translation industry in the Kingdom and ascribed it to the expansion of employment sectors and communication needs in work sectors, and to the establishment of translation institutions. Of the few relevant empirical published about the Saudi context are those reported by Al Qahtani (2023), Althbaity (2024), and Aluthman (2024). Al Qahtani's (2023) study on utilizing CAT tools in 11 Saudi translation agencies showed that SDL Trados, Wordfast, and MemeQ were their most frequently used applications. It also revealed the translators' inadequate

awareness of translation technology features. Althbaity (2024) collected survey data from a group of freelance translators working in Saudi Arabia about their attitudes toward and evaluation of CAT use. While the translators in this study had a positive attitude toward using CAT, they were found to use a few special-purpose translation applications. As for Aluthman's (2024) study, it addressed Saudi professional translators' use and feasibility perceptions of translation memory, textual corpora, terminology management, and quality assurance applications. This study revealed translation management software is the most frequently used CAT application, with 93.3 % of the translators indicating the use of SDL Trados. As may be inferred, these three studies are limited in their research scopes as they mainly focused on translators' perceptions of and attitudes toward using CAT. Thus, key relevant issues remain unexplored, including translators' dependence on CAT in translating different genres, their use purposes, and the potential predictors of CAT use. Accordingly, the present study addressed the following research questions:

1. Which particular CAT tool types and applications do professional translators in Saudi Arabia use more or less?
2. To what extent do professional translators in Saudi Arabia depend on CAT applications and perceive their usability?
3. Which text types do professional translators in Saudi Arabia use CAT more or less with?
4. How far do translators' gender and work status (i.e., being an employee vs. being a freelancer) influence their CAT usability perceptions and actual use?
5. Which purposes do professional translators in Saudi Arabia use CAT for?
6. What difficulties and cautions do professional translators in Saudi Arabia have when using CAT tools?

Empirical findings on these issues will be of important implications to improving professional translators' technology use skills in Saudi Arabia. Researching such issues could also provide insights into the integration of technology-based training into pre-service and in-service translator education programmes in Saudi Arabia.

## 4 Method

### 4.1 Participants

The convenience sample approach was used in the present study. Forty-four professional translators working in Saudi Arabia took part in the study. Table 1 summarizes the demographic characteristics of the participants. Of the 44 translators, 14 were females, and 30 were males. They had different academic degrees: 22 completed BA degrees only, 12 had the MA as their highest degrees, and 10 were PhD holders. The participants had varied professional experiences and work statuses: 11 were freelance translators, and 33 were of an employee job status (17 were working in the private sectors, and 16 were employed in governmental offices and ministries). All the 44 participants were working in Arabic–English–Arabic translation as their language

TABLE 1 The demographic characteristics of the participant translators ( $n = 44$ ).

Gender		Work status		Work experience		Language pair		Academic degree		University major
Females	14	Freelancers	11	Less than 5 years	6	Arabic–English	44	BA	22	Various
Males	30	Employees	31	Six to 10 years	31	Arabic–French	3	MA	12	
				More than 10 years	7	Arabic–Spanish	2	PhD	10	

pair specialization. In addition to this main language pair major, three of them were also working in Arabic–French–Arabic, whereas two were doing Arabic–Spanish–Arabic translation.

The 44 participants also reported doing more than one translation genre. Overall, their reported translation specializations are as follows: scientific-technical translation ( $n = 19$ ), media-journalism translation ( $n = 19$ ), legal translation ( $n = 19$ ), religious translation ( $n = 11$ ), literary translation ( $n = 8$ ), military translation ( $n = 5$ ), and medical translation ( $n = 3$ ). As for their nationalities, the participants were Saudi ( $n = 25$ ), Egyptian ( $n = 12$ ), Jordanian, Sudanese ( $n = 2$  each), Lebanese, Moroccan and Syrian ( $n = 1$  each). All the participants took part in the study based on informed consent of the purpose of the study, use of the data collected, and the confidentiality of their personal data. The questionnaire introduction provided the respondents with information about the study and its purpose, and the confidentiality of their personal data, and indicated that submitting their responses means their voluntary participation in the study.

## 4.2 The questionnaire

Due to its surveying nature, the present study used a questionnaire to access the largest possible number of professional translators. The questionnaire was developed in light of the research purpose and questions. It was written in Arabic to facilitate the respondents' communication of their answers. Guided by the research questions, we worked together in developing the parts and questions of the questionnaire, and exchanged views on its early draft. An expert translation researcher read this early questionnaire draft and agreed on the content validity of its questions and parts after comparing them to the research questions. She provided a few editing suggestions which were used for improving the phrasing of some items. To explore the clarity of its items and questions, the questionnaire was also piloted with two translators who reported having no difficulty in understanding them.

In its final draft (see [Appendix 1](#)), the questionnaire includes four main parts in addition to an introductory demographic section with questions about respondents' gender, academic degrees, job statuses or work workplace types, professional experiences, the translation major and the genre(s) they were doing, and their nationalities. The first questionnaire part has a checkbox or multi-select question about the types of the CAT tools translators use, and an open-ended question about the names of the CAT applications they depend on. The second questionnaire part includes 10 Likert-scale statements about the degree of the respondents' dependence

on CAT, the text types the translators use CAT for processing. A 5-point response set (always, often, sometimes, rarely, and never) was used for these Likert-scale statements. This part has also an open-ended question which asks respondents to give further details about the text types they use with CAT applications. The third part includes a checkbox multi-select question and an open-ended one about the translators' purposes for using CAT applications in completing their workplace tasks. Both the second and third parts reflect the degree of translators' use of CAT applications in light of their ease of use and perceived usefulness, i.e., the two main dimensions in the TAM (Davis, 1989). As for the fourth part, it is composed of three open-ended questions about the degree of translators' use of AI in workplace tasks, the difficulties they encounter in using CAT, and their CAT learning processes. Statistical analyses revealed the Likert-scale items in the questionnaire have an average Cronbach's Alpha reliability coefficient of 0.70.

## 4.3 Data collection and analysis

The questionnaire responses were collected over a period of 13 weeks between April and July 2025. A longer time than expected was taken in collecting the data as a result of the few positive responses to our invitation to complete the questionnaire during the 13 weeks. Prior to collecting the data, institutional consent was obtained. The questionnaire was electronically written using Google Forms, and its URL was sent through emails and WhatsApp messages to different groups of translators working at Saudi Arabia. We kept reminding professional translator groups of our invitation to take part in the study via completing the questionnaire. After sending several invitation reminders, we ended up collecting 44 responses over the 13-week period. Following this, we analyzed the data through several steps. First, we analyzed the participants' responses to the Likert-scale items descriptively and inferentially. The independent-sample  $t$ -test was used to identify any potential significant differences between the comparison groups (i.e., females vs. males, and employees vs. freelancers). Second, we calculated the raw frequencies and percentages of the responses to the multi-select questions. Finally, the respondents' qualitative answers to the six open-ended questions were analyzed thematically through our independent readings at the beginning and collaborative online discussions at a later stage. The themes identified include: the specific CAT applications used, the text types translated by CAT, purposes for using CAT, CAT use difficulties, AI use in translation, and CAT learning experiences. Some of these themes

TABLE 2 The types of CAT tools the translators reported using ( $n = 44$ ).

Type of the CAT tools used	Raw frequencies	Percentage of the participants indicating using the CAT tool type
1. Translation memories	35	79.5
2. Terminology bases	24	53.3
3. Subtitling software	13	29.5
4. Translation revision tools	11	25
5. Machine translation applications	10	22.7
6. Online dictionaries and glossaries	10	22.7
7. Translation management tools	7	15.9
8. Speech-to-text recognition software	5	11.4
9. AI applications	2	4.5

required counting to supplement the responses to the close-ended questionnaire parts. As will be explained in the following section, the outcome of the data analysis was finally organized into four main parts.

## 5 Results of the study

In the following subsections, we present the results of the data analysis guided by its research questions.

### 5.1 CAT tool types and applications translators use

The translators' responses to the first questionnaire part revealed the CAT tool types and applications they use. Table 2 gives the raw frequencies of the CAT tool types the participant translators reported using, along with the percentage of the participants indicating employing each type (compared to the total number).

Translation memories represent the translators' most frequently used CAT tool type ( $n = 35$ ; percentage = 79.5 %). They are followed by terminology bases ( $n = 24$ ; percentage = 53.3 %). Besides, subtitling software, translation revision tools, machine translation, and online dictionaries and glossaries have lower but rather similar frequencies ranging from 13 to 10. The CAT tool type with the lowest frequency is AI applications ( $n = 2$ ); however, it is worth noting that most of the other CAT tool types are AI-empowered ones drawing upon neural machine translation along with large language models.

On the other hand, the 44 participants also named the specific CAT applications they use. The list of the applications

they mentioned include: SDL Trados ( $n = 21$ ), MemoQ ( $n = 12$ ), Google Translate ( $n = 7$ ), ChatGPT, DeepL Translate, Wordfast, MedDRA, Reverso ( $n = 2$  each), Centre National de Ressources Textuelles et Lexicales (CNRTL), Linguee, Manus, Matecat, Microsoft Translator, Smartcat, and Trello ( $n = 1$  each). The frequencies of the specific CAT applications are generally consistent with the participants' reported uses of translation tool types. Noted also is the use of specific-translation applications such as CNRTL (for Arabic–French translation) and MedDRA (for medical terminology and translation).

Some participants mentioned their reasons for using particular applications. For example, they use SDL Trados and Trello for managing translation projects, and DeepL for having initial translation drafts, and ChatGPT for verifying terminology. The following questionnaire answers show some reported reasons for using multiple technologies in completing their work tasks:

- *I use Google Translate in translating short and simple texts, and I use Microsoft Translator in translating technical texts, and SDL Trados Studio for managing translation projects.* (Questionnaire respondent 6)
- *I use Manos because it processes a large database of terms but it is very expensive. I depend on ChatGPT for explaining difficult terms, and Microsoft Copilot in technical translation.* (Questionnaire respondent 37)

Accordingly, the reported uses of CAT applications and other multi-purpose technologies can be ascribed to translation technology affordances, and sometimes to technology affordability. The applications the participants mentioned are broadly of three main categories: integrated translation applications used for multiple purposes (such as Matecat, MemoQ, Trados Studio, and Trello), simple machine translation ones (such as DeepL Translate, Google Translate, and Reverso), and online dictionaries and specialized terminology databases (such as MedDRA).

### 5.2 Degree of the translators' dependence on CAT

The descriptive statistical analyses indicate the translators' varied responses to the statements about the degree of their dependence on CAT tools. The responses to the first statement indicate the translators' complete rather than partial dependence on using CAT in completing work tasks (total mean = 4.1). This result is fostered by their perceptions of the usefulness of CAT tools (total mean of the second statement = 4.2). Additionally, the translators' answers also indicate that their perceived effectiveness of CAT depends on text types (total mean = 4.3), and that they depend more on CAT when translating texts from Arabic into English than when translating texts from English into Arabic (total means = 4.2 vs. 3.9), which can be attributed to the more difficulties encountered in Arabic–English translation. On the other hand, Table 3 gives the results of the independent-sample *t*-test analyses of the gender- and work status-related differences in the responses to these statements.

As noted, the means of the females' and males' responses to all the statements are very close or almost the same; and thus no gender-related significant differences can be detected. Contrarily,

TABLE 3 Comparison of the translators' responses to the statements tapping the degree of their dependence on CAT (n = 14 females and 30 males; 33 employees and 11 freelancers).

Statement	Variable	M	SD	95 % CI of the difference		t (42)	p	Cohen's d
				Lower	Upper			
I totally depend on using CAT in completing my work tasks	Females	4.1	0.9	-0.689	0.832	0.190	0.425	0.061
	Males	4	1.2					
	Employees	4.3	0.9	0.52	1.96	3.477	0.001	1.21
	Freelancers	3.4	1.1					
CAT tools help a lot in completing my work tasks	Females	4.1	1.1	-0.75	0.55	-0.306	0.380	-0.099
	Males	4.2	0.9					
	Employees	4.4	0.9	0.022	1.372	2.083	0.022	0.725
	Freelancers	3.6	0.9					
Benefiting from CAT tools depends on the text type	Females	4.1	1.1	-0.882	0.435	-0.686	0.248	-0.222
	Males	4.4	0.9					
	Employees	4.4	1.1	-0.308	1.096	1.133	0.132	0.395
	Freelancers	4.1	0.9					
I depend on CAT when translating texts from Arabic into English	Females	4.2	0.9	-0.789	0.589	-0.293	0.385	-0.095
	Males	4.4	1.2					
	Employees	4.4	1	0.351	-0.012	1.983	0.027	0.691
	Freelancers	3.7	0.9					
I depend on CAT when translating texts from English into Arabic	Females	3.7	1	-0.970	0.474	-0.692	0.246	-0.224
	Males	4.1	1.1					
	Employees	4.3	1.1	0.046	1.529	2.144	0.019	0.746
	Freelancers	3.5	0.8					

the employee translators' mean responses to the statements are clearly higher than those of the freelancers. Significant differences are noted between the responses of the two translator groups to the four statements about their complete dependence on CAT in completing work tasks [ $t(42) = 3.477, p = 0.001$ , 2-tailed], perceptions of the usefulness of CAT [ $t(42) = 2.083, p = 0.022$ , 2-tailed], and using CAT in translating texts from Arabic into English [ $t(42) = 1.983, p = 0.027$ , 2-tailed] and from English into Arabic [ $t(42) = 2.144, p = 0.019$ , 2-tailed]. This generally implies that employee translators make more use of CAT applications in their work dimensions as compared to freelancers. Such greater use may be related to the perceptions both groups have about CAT usefulness (see the responses to the second statement), and to the various and larger number of translation tasks employee translators seem to have. Three employee translators referred specifically to meeting deadlines as a main reason for using CAT; for example:

- *Translation technologies assist me mainly in completing text translation in a very quick time. This helps me in accomplishing my too many work tasks and meeting multiple deadlines.* (Questionnaire respondent 40)

Unlike freelancers, the professional nature of employee translators' work could necessitate spending more time working in translation, completing more tasks, engaging in more translation

projects and meeting more translation users' requirements. Thus, they find in CAT applications great assistance. Meanwhile, the employee translators' higher use of CAT could have also stemmed from accessibility to its multiple tools in workplaces. In contrast, their freelancer peers may not have adequate accessibility to or affordability of particular CAT tools due to the lack of institutional work.

### 5.3 Translation text types and purposes for using CAT

We identified the text types the translators use CAT for processing through their answers to the last five Likert-scale items and the open-ended question in the second questionnaire part. The descriptive statistics of the responses to the Likert-scale statements indicate the translators' higher use of CAT for processing scientific-technical, legal and mass communication texts ( $M = 3.9, 3.7$  and  $2.9$ , respectively) whereas religious and literary texts have the lowest means ( $M = 2.7$  and  $2.4$ , respectively). Table 4 gives the results of the independent-sample  $t$ -test analyses of the gender- and work status-related differences in using CAT for translating different text types. While there are no significant

TABLE 4 Comparison of the translators' responses to the statements about their use of CAT in translating different text types ( $n = 14$  females and 30 males; 33 employees and 11 freelancers).

Statement	Variable	M	SD	95 % CI of the difference		t (DF = 42)	p	Cohen's d
				Lower	Upper			
I depend on CAT when translating scientific-technical texts ( $M = 3.9$ )	Females	3.9	1.1	-0.689	0.832	0.190	0.425	0.024
	Males	3.9	1.2					
	Employees	4.2	1.3	-0.064	1.519	1.855	0.035	0.646
	Freelancers	3.5	1					
I depend on CAT when translating legal texts ( $M = 3.7$ )	Females	4	0.9	-0.557	0.633	0.129	0.449	0.232
	Males	3.6	1.3					
	Employees	4.1	1.1	0.030	1.607	2.094	0.021	0.729
	Freelancers	3.3	1.2					
I depend on CAT when translating mass communication texts ( $M = 2.9$ )	Females	3	0.9	-0.494	0.837	0.520	0.303	0.168
	Males	2.9	1.1					
	Employees	3	1.1	-0.658	0.779	0.170	0.433	0.059
	Freelancers	2.9	0.8					
I depend on CAT when translating religious texts ( $M = 2.7$ )	Females	2.6	1.1	-0.797	0.549	-0.371	0.356	-0.120
	Males	2.8	1					
	Employees	2.7	1.1	-0.725	0.725	0.000	0.500	0.000
	Freelancers	2.7	0.8					
I depend on CAT when translating literary texts ( $M = 2.4$ )	Females	2.7	1.2	-0.314	1.019	1.067	0.146	0.345
	Males	2.3	0.9					
	Employees	2.6	1	-0.354	1.081	1.023	0.156	0.356
	Freelancers	2.3	1					

differences between the females and males, work status accounts for differences in the responses to the two statements about using CAT in translating scientific-technical texts ( $t(42) = 1.855$ ,  $p = 0.035$ , 2-tailed) and legal ones [ $t(42) = 2.094$ ,  $p = 0.021$ , 2-tailed]. The means of the responses to the other statements are non-significant. Overall, these inferential results give further support to the above results about the employee translators' greater dependence on CAT.

While other translation genres were not included in this Likert-scale part, the open-ended question allowed us to collect data about using CAT in translating them. A summary of these responses is provided in Table 5, where they are arranged according to their means. The participants reported using CAT for translating scientific-technical texts (covering fields such as engineering, aviation, software, oil and petroleum, and business) more than other text types (raw frequency = 28; percentage = 63.6). This is followed by journalistic/mass communication texts ( $n = 23$ )—a general genre which includes newspaper articles, reports, minutes and brochures—, legal documents ( $n = 16$ ), and medical texts ( $n = 14$ ) such as pharmaceutical reports and medicine prescription. As for military, literary, academic and religious translation text types, their low frequencies indicate the translators do not commonly use CAT for processing them.

Meanwhile, some open-ended answers give interpretations for the translators' lower dependence on CAT in translating

TABLE 5 The translators' reported uses of CAT for processing different text types ( $n = 44$ ).

Text type	Raw frequencies	Percentage of the translators indicating using the text type with CAT tools
Scientific-technical texts	28	63.6
Journalistic/mass communication texts	23	52.2
Legal texts	16	33.3
Medical texts	14	31.8
Military texts	8	18.2
Literary texts	7	15.9
Academic texts	3	6.8
Religious texts	3	6.8

particular genres. For some participants, the characteristics of academic, literary and religious genres poses challenges in their translatability using CAT. The following three answers summarize some participants' views in this regard:

- *Literary texts include rhetorical images and metaphors, and therefore their human translation cannot be replaced by machine translation.* (Questionnaire respondent 19)
- *Translating academic texts require in-depth processing CAT applications cannot offer. For example, these applications are still unable to recognize complicated in-text citations.* (Questionnaire respondent 32)
- *CAT applications cannot work with meanings of Quranic verses and Prophetic Hadith, and they can deviate their meanings.* (Questionnaire respondent 24)

Overall, the translators' responses to the Likert-scale statements are generally consistent with their answers to the open-ended question; both data types show that the translators use CAT much more frequently when translating scientific, mass communication, legal and medical genres as compared to other translation genres.

Regarding the translators' purposes for using CAT, they were assessed through the checkbox multi-select question given in the third questionnaire part, and the open-ended question asks respondent about other purposes for using CAT. The answers to the two questions were combined to give a complete picture about all reported purposes and their frequencies. Table 6 gives a summary of the respondents' answers to the multi-select and open-ended questions. As noted, 31 participants use CAT applications for translating technical and specialized texts as compared to 14 using them for translating general texts. This is further evidence supporting the above data about depending more on CAT tools for translating specialized genres such as science, engineering, medicine, law and military English. Meanwhile, verifying the accuracy of human translation is the purpose with the second highest frequency ( $n = 17$ ). Thus, many translators depend on CAT to make sure their linguistic and terminological choices are correct. Another group of translators use CAT for finding the meanings of terms they do not know ( $n = 10$ ). The participants' answers to the relevant open-ended question also revealed three other purposes: ensuring terminological consistency and accuracy throughout translated files ( $n = 9$ ), managing collaborative translation projects or tasks ( $n = 6$ ), and building glossaries ( $n = 2$ ). The following are questionnaire answers representing some of these purposes:

- *I depend on translation applications in translating news reports. I use them for accomplishing my work tasks in a short time.* (Questionnaire respondent 3)
- *Translation applications are important in making terms consistent within the same document.* (Questionnaire respondent 10)
- *I found translation technologies very useful in finding the meanings of terms, and in building glossaries for use in our translation projects.* (Questionnaire respondent 17)
- *Translation applications, particularly when combined with translation memories, are essential in big projects. They save time and efforts.* (Questionnaire respondent 36)
- *After completing my own translation, I compare it to one or two machine translations.* (Questionnaire respondent 43)

It can be inferred that these multiple purposes concern three main issues: converting specialized texts into the target language, dealing with terminological equivalents, and ensuring translation consistency and accuracy. Apart from these technical purposes, the

TABLE 6 The translators' purposes for using CAT ( $n = 44$ ).

Purposes for using CAT tools	Raw frequencies	Percentage of the translators indicating this purpose
Translating specialized texts	31	70.5
Verifying the accuracy of human translation	17	38.6
Translating general texts	14	31.8
Finding the meanings of terms	10	22.7
Ensuring terminological consistency and accuracy	9	20.5
Managing collaborative translation projects	6	13.6
Building glossaries	2	4.5

general or broad reason for using CAT applications is saving time and efforts.

## 5.4 CAT use difficulties and cautions

The final questionnaire part includes three open-ended questions about the difficulties involved in the translators' use of CAT applications, the degree of using AI in workplace tasks, and their learning and training. Regarding the difficulties encountered in using the CAT, the translators' answers revealed some challenges related to different areas. Specifically, they referred to the lack of CAT affordances in translating particular textual features in some genres. For example, four other participants talked about some gaps associated with using CAT applications with medical texts. These gaps include: the lack of up-to-date medical terms, conflating close medical terms, and the dangers of making errors in machine translated medical texts and transcriptions:

- *Translation applications are not updated with newly used medical terms.* (Questionnaire respondent 1)
- *They are useful in translating basic terms only, but not in providing accurate medical translations.* (Questionnaire respondent 20)
- *There are risks in using these applications in translating medical prescriptions, pharma brochures and medical research. I avoid using them in these cases.* (Questionnaire respondent 23)

Other participants mentioned they only depend on CAT in translating simple legal documents rather detailed contracts with complicated terminology. Their reason is the potential risk in getting erroneous machine translated legal texts which are expected to be of high accuracy. One participant referred to this point as follows:

- *Only simple contracts and general law documents can be machine translated. I avoid using CAT applications in translating commercial contracts and official legal documents. These*

*applications don't recognize terminology used in different legal contexts.* (Questionnaire respondent 15)

With regard to the participants' use of AI in completing translation tasks, their answers to the relevant open-ended question indicate important related points. The translators generally reported making little use of AI applications. A group of them ( $n = 9$ ) mentioned that using AI applications is not allowed in their workplaces due to the sensitivity of the texts being translated. Three other participants reported avoiding using AI in legal and religious translations as a result of the high accuracy needed; for example:

- *I don't use AI in legal translation because of the high accuracy needed in it and potential legal risks that may result from errors.* (Questionnaire respondent 8)
- *I never use AI in religious translation due to potential deviations in meanings.* (Questionnaire respondent 27)

The other participants said their use of AI applications depends on the text type. However, eight of them mentioned using these applications for purposes such as locating term equivalents and getting a reference translation draft to compare it to a human translation version. Therefore, they use CAT tools in this case only for translation verification and lexical resourcing.

The participants' responses to the last open-ended question also revealed their varied approaches to CAT literacy. In this regard, three different approaches were noted. The first group of translators ( $n = 21$ ) reported depending on self-learning in developing their CAT literacy. They do this drawing upon available online tutorials and videos related to the target application. The second group of translators ( $n = 13$ ) mentioned receiving training support in their CAT learning from their workplace colleagues who helped them be familiar with applications. However, four of them also said their workplace training support is combined with self-CAT learning practices. Finally, the third group reported ( $n = 10$ ) attending training workshops and short-term courses offered by translation associations. According to them, most of these workshops and courses are normally held online. Overall, the respondents' answers do not indicate they receive regular CAT training in or outside their workplaces.

## 6 Discussion

The present study has revealed key findings about the realities of using CAT in the translation industry in Saudi Arabia. Translation memories and terminology bases were found to be the two CAT tool types with the highest use frequencies. Generally, the main CAT tool types frequently used in the Saudi context at present are of three main types: integrated multi-purpose translation applications, simple machine translation programmes, and online dictionaries and specialized terminology databases. Commonly used applications include SDL Trados, MemoQ, Google Translate. These results generally concur with some previous research findings in the Arab and non-Arab contexts (Alonso, 2015; Alotaibi, 2020; Aluthman, 2024; Al Qahtani, 2023; Christensen and Schjoldager, 2017; Mahfouz, 2018). The relative contradiction between the present results and those of previous research indicating translators'

little use of machine translation tools could be attributed to the recent improvements added to them since publishing these works (e.g., Christensen and Schjoldager, 2017; Rossi and Chevrot, 2019). Meanwhile, the open-ended answers indicate that the reported uses of specific CAT applications or other multi-purpose technologies relate to translation technology affordances and affordability.

The participant translators reported highly positive perceptions of CAT and a high degree of dependence on its tools in completing their tasks. In line with some previous research findings (e.g., Mahfouz, 2018), the translators indicated depending more on CAT when translating texts from Arabic into English than when translating texts from English into Arabic. Another important issue relates to the text types more or less commonly used with CAT applications. The translators' qualitative and quantitative answers show that they depend more on CAT when translating scientific-technical, journalistic, legal, and medical texts. This Saudi case is similar to the Egyptian and Polish translators (Mahfouz, 2018; Sycz-Opoń, 2024, respectively). Meanwhile, the translators use CAT application in a limited way for translating literary, academic and religious translation text types. The responses to the Likert-scale statement emphasize that using technological applications is associated with perceptions of their usefulness; therefore, these results are consistent with the TAM (Davis, 1989).

A main contribution of the present study lies in addressing the potential role of gender and work status in translators' use of CAT. Though the results showed no significant role for translators' use of CAT, their work status was influential. In this study, the employee translators were generally found to depend more on CAT than the freelancers. This can be interpreted by the professional nature of employee translators' work. They seem to have more regular work tasks and deadlines to meet, and spend more time working than freelancers. Thus, they find CAT helpful in completing their multiple tasks. Additionally, employee translators seem also to have accessibility to CAT tools in their workplaces, unlike freelancers who may not have adequate accessibility to or affordability. These results concur with the UTAUT (Venkatesh et al., 2003) in that some contextual factors, such as work environment, have an important role in technology use. Another main contribution of the present study is revealing a wider range of the purposes for using CAT as compared to previous findings (e.g., Sycz-Opoń, 2024). The study found that the translators in Saudi Arabia use CAT for multiple purposes, including: translating specialized texts, verifying the accuracy of human translation, translating general texts, finding the meanings of terms, ensuring terminological consistency in translated files, managing collaborative translation tasks, and building glossaries. These multiple purposes concern text conversion, terminology use, and translation accuracy verification.

As for the difficulties and cautions the translators have in using CAT, these draw attention to a number of issues. First, the characteristics of academic, literary and religious genres poses challenges in their technology-assisted translatability. Second, translators may avoid using CAT when translating particular genres requiring a high accuracy level. Third, CAT applications are not regularly updated with newly used terms in some genres such as the medical one. These difficulties add to the CAT learnability and technical skill ones revealed by previous studies (e.g., Alotaibi, 2020; Awadh, 2023). Moreover, some translators use AI applications

cautiously and sparsely due to privacy and confidentiality reasons. These results support Farrell's (2022, 2024) research indicating that translators make limited use of AI applications. Taken together, accumulated research findings suggest that AI is still far from being fully integrated into translators' professional practices. Finally, many translators in Saudi Arabia adopt a self-learning approach in their use of CAT. Overall, these results align with O'Brien et al.'s (2017) conclusion that the use of CAT tools could continue to be a source of frustration for translators, even after long-term use.

## 7 Conclusion

The present study indicates the increasingly important role technology play in translators' work in Saudi Arabia. Translators in this context use multiple CAT tools for various purposes. Their dependence on CAT varies from one genre to another, and is also associated with their work environments. Meanwhile, translators' use of assisting technologies is not without its challenges. There are some important implications for making more effective use of CAT tools in the Saudi translation industry and similar contexts. First, many translators in this context are yet to understand the complete potentials of CAT applications. Since the largest group of the translators who participated in this study adopt a self-learning approach to understanding the use of CAT, their self-learning initiatives should be supported by institutional and workplace training. More importantly, attention should be paid to effectively integrating CAT training into translator education programmes at Saudi universities, given that students in these programmes are prospective translators. Second, the study suggests that institutional work environments play a supportive role in using CAT as a result of either work pressures or application accessibility. While employee translators are supposed to have workplace-based accessibility to different CAT tools, freelancers should also be enabled to access and afford them. When needed, translation communities and organizations could help freelancer translators have free or reduced-price accessibility to CAT tools. Finally, CAT applications are yet to offer translators better solutions for some genres such as the legal, medical, religious and literary ones. We expect much work from CAT programme designers toward that end.

The present study is not without limitations. Future research can explore the issues addressed here with a larger number of translators in other contexts. Some studies may also investigate these issues at a cross-Arab level. Thus, we will be able to understand the potential variance in CAT utilization in different Arab countries or regions. Potential predictors of translators' CAT use also deserve research attention; these include length work experiences, educational qualifications, translation language pairs. Besides, CAT accessibility and affordability should not be ignored in future research. Methodologically, combining questionnaire data with interviews is also recommended in future relevant research. Future researchers interested in the area may also make use of observational data collected from keystroke logging and eye-tracking to explore translators' read-time interactions with CAT applications (see Abdel Latif, 2019, 2024). Finally, needed also is the longitudinal research examining the potential collaboration lexical programme designers and professional translators. These different

research approaches will likely assist in promoting the usability of lexical applications regionally and internationally.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving humans were approved by the Arab Observatory for Translation. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

MA: Writing – review & editing, Conceptualization, Methodology, Validation, Formal analysis, Writing – original draft. SA: Funding acquisition, Methodology, Investigation, Validation, Writing – review & editing, Formal analysis, Writing – original draft, Data curation.

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## Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

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## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/flang.2026.1746588/full#supplementary-material>

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