Translation Technology and CAT Tools: Addressing Gaps between Pedagogy and the Translation Industry in Saudi Arabia

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Dedication

This thesis is dedicated to my wife and children and to the memory of my mother and father.

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My deepest thanks go to Allah for providing me with the direction and tenacity to pursue and complete this work.

I would like to extend my sincere gratitude to my supervisor, Professor James Dickins, for his endless assistance, knowledge, professionalism, thoughtful criticism, and interest in ensuring that I remained on the correct path.

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Abstract

The purpose of this empirical study was to determine the degree to which the translator training and instruction offered at universities in Saudi Arabia prepared translators to make use of computer-assisted translation (CAT) tools that were available in the local market. It also sought to identify ways to increase the use of these tools in Saudi Arabian university programmes and by extension the Saudi Arabian translation market. The study likewise examined how electronic aids could help meet international standards. To this end, a mixed-methods model was employed. Data were collected through a questionnaire, training session, follow-up questionnaire, and observation cards involving Saudi Arabian BA, MA, and PhD students. The researcher also interviewed the students' instructors and freelance Saudi Arabian translators. The results showed a lack of applied translation courses and training in both the public and private sectors. The majority of the translation instructors did not have a background in using translation software at the university level. Instead, they were mostly academics who had been trained in other fields and intended to subsequently train with CAT tools to be able to meet market needs. Most students perceived there to be a dearth of translation labs and software at Saudi Arabian universities. The findings thus revealed a gap between university programmes and market needs. Based on these findings and the limitations of the study limitations, the study provides recommendations for future research as well as implications for teaching practices in the Saudi Arabian public sector and translation practices in the private sector.

Keywords: CAT tools, machine translation, Saudi Arabia, translation competencies, translation industry, translation memory, translation technology, translation terminology, translation training, translator

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List of Abbreviations

ATT: Attitude

BI: Behavioural intention

CAT: Computer-assisted translation

EE: Effort expectancy

FC: Facilitating condition

ISO: International Organization for Standardization

PACTE: Process in the Acquisition of Translation Competence and Evaluation

PE: Performance expectancy

SE: Self-efficacy

SI: Social influence

UTAUT: Unified Theory of Acceptance and Use of Technology

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Chapter 1
Introduction

1.1 Introduction

Translation serves as a bridge between different languages, cultures, economies, traditions, and literatures. Due in part to increasing globalization, the last decade has witnessed unparalleled worldwide growth in the demand for skilled translators, interpreters, project managers, proofreaders, and other professionals in the language services industry. It has also seen considerable growth in the number of individuals across the globe seeking a degree in translation studies or training in a translation programme. Saudi Arabia is no exception to these trends. The language services industry is likewise growing rapidly, opening up new local employment opportunities across the board (Venuti, 2016). The Saudi Arabian translation market is also expanding globally as communication with many institutions—including government agencies, banks, the courts, hospitals, and international organizations—depends on the use of recent practical and technical innovations in translation. In this environment, being bilingual is not enough anymore to work as a professional translator in Saudi Arabia.

The Saudi Arabian language services industry would benefit from translators using specialized technology during their training as a standard work requirement. Nevertheless, translation service providers that are not suitably qualified continue to work in the industry, as the Saudi Ministry of Commerce does not have regulations to prevent them from doing so, although most government-run institutions have guidelines for translation terminology. Furthermore, private industry could step up to address this problem by only hiring translators with sufficient proven ability.

Globalization is driving the demand for translation services to bridge the communication gap between Saudi Arabian translators and markets locally and around the world. The U.S. Bureau of Statistics projected a 42% growth in the translation industry from 2010 to 2020, with advancing technology expected to improve services over time (Pangeanic, n.d.).

In keeping with this trend, students in Western translation programmes normally practise with computer-assisted translation (CAT) tools, such as translation editors, term-bases, translation memories, and corpora, improving their output and marketability. A translation memory is essentially an aligned bilingual database containing texts that have been previously translated (Bowker, 2005, p. 13). In

contrast, Saudi Arabian universities do not offer modern translation pedagogy methods and practices that incorporate this technology or take into account other major aspects of the industry, such as proper documentation, desktop publishing, marketing, and problem-solving skills. This has resulted in a lack of Saudi Arabian professionals with knowledge of modern translation technology and best practices (Smith and Abouammoh, 2013).

Theoretical translation training is available at several public universities in Saudi Arabia, including the College of Languages and Translation at King Saud University, the College of Language and Translation at King Khalid University, and the College of Languages and Translation at Imam Mohamad University (Fatani, 2007). Several Saudi Arabian universities also have translation courses as part of their English programme, including Um Al-Qura University and King Faisal University (Fatani, 2009). The learning facilities offered at these organizations differ greatly, with King Saud University having the most advanced CAT tools (Al-Jarf, 2017).

In early 2020, the Saudi Ministry of Culture (n.d.-a) established the Literature, Publishing, and Translation Commission, among 11 new commissions in Saudi Arbia. This is the first official Saudi Arabian translation association and aims to create opportunities for Saudi Arabian translators, arrange translation activities, shed light on Saudi Arabian literature and culture, and transfer knowledge to Saudi Arabia. Additionally in 2020, the Ministry of Labor and Social Development established the Association of Saudi Translators and Interpreters to increase local competitiveness and promote the ability to employ translation technology among language service providers and the translation industry in general. However, this development requires more work to promote CAT tools in the public and private sectors.

University programmes play a vital role in producing qualified translators who can compete in a global marketplace. Given the importance of these institutions, there is a pressing need to assess the weaknesses in the training they offer. Such an assessment could be used to develop programmes that better serve the language services industry and lead to more professional translation outcomes in Saudi Arabia. In this context, the present study analyses the gaps between the translation pedagogy offered by Saudi Arabian universities and the professional needs of the language services industry.

1.2 Problem Statement

To understand the problem addressed by the current study, it is necessary to understand the wider context of the Saudi Arabian translation market and the national economy as a whole. From almost the founding of the country, the Saudi Arabian economy has been highly dependent on oil as its chief export and source of income

(Saudi Vision 2030, 2017). The petrochemical industry is also a major source of jobs for Saudi Arabian citizens, and transportation in the country is likewise dependent on fossil fuel; i.e., the country not only sells enormous amounts of oil but also consumes enormous amounts of it as well. However, it has been projected that this situation cannot last indefinitely; the fluctuating price of oil is a hindrance to the Saudi Arabian economy as a consumer and producer of oil, while at the same time, the world economy is moving more and more toward more sustainable, environmentally friendly sources of fuel. As a result, Saudi Arabia needs to reduce its dependence on oil as quickly as possible while it is still highly profitable and can thereby fund economic diversification. However, such a massive shift would require a more competitive workforce. The Saudi Arabian government has increasingly recognized the vital importance of drawing knowledge from the post-industrial services-based economies that it seeks to emulate. One area of potential improvement in this regard is the adoption of CAT tools during the translation process.

The Process in the Acquisition of Translation Competence and Evaluation (PACTE) research group was formed in October 1997 in Europe to investigate the acquisition of competence in written translation into and out of a foreign language (PACTE Group, 2011). PACTE reported in 2011 that translation competence can be investigated through two complementary perspectives: during the translation process and the quality of the translated product. Despite PACTE's findings and similar recommendations by other international bodies, for most English-related work in the Saudi Arabian language and translation services industry, translators are not required to use CAT tools; they only need to claim fluency in English (Venuti, 2016, p. 570). Furthermore, the documents prepared by Saudi Arabian translators tend to be poor in quality, suggesting they are unqualified for professional translation work. Based on the above, it is no surprise that the work produced by some translation agencies in Saudi Arabia is of low quality due to a lack of appropriate software (Fatani, 2009).

In Saudi Arabia, translation training programmes are typically provided by universities or institutes specialized in other areas rather than by institutions dedicated to translation (Fatani, 2007). Although some private institutions offer courses in translation, Saudi Arabian translators are almost always trained through university programmes that are in an early stage of development (Fatani, 2007). Atari (2005) conducted an empirical study on the strategies employed by undergraduate Saudi Arabian translator trainees and found problems with certain strategies used in the industry. Atari recommended changing classroom feedback to enhance translation quality. Thus, translation education in Saudi Arabian universities needs to be updated to meet local and global industry needs. The Saudi Arabian industry would therefore benefit from adopting a global standard for applied translation studies.

1.3 Significance of the Study

Fatani (2007) found no survey had been conducted on the translation industry in Saudi Arabia (though a survey was subsequently conducted by Abu-ghararah, 2017). Furthermore, the researcher of the present study found no survey had been conducted on the acceptance and use of CAT tools in the intervening years since Fatani's work. Thus, this study will benefit all industry stakeholders. Studying the gaps between university pedagogy and the needs of the Saudi Arabian language services industry will help universities incorporate elements addressing these needs into the curriculum, including the most up-to-date methods, techniques, and technology (Ying, 2014). In addition, the study provides information on technology that could help the performance of companies in the language services industry. In terms of research, the study expands the field of translation studies in Saudi Arabia regarding the importance of new technology (Smith and Abouammoh, 2013, p. 21), providing a foundation for Saudi Arabian researchers to further explore the use of CAT tools as this industry matures. Finally, the researcher hopes that a better understanding of translation pedagogy and practice will positively affect international trade, commerce, diplomacy, and economic development in Saudi Arabia and across the Arab world.

In a study by Rumaih (2021) at King Saud University, greater familiarity with CAT tools was related to students viewing those tools in a more positive light. The study recommended integrating these tools into Saudi Arabian translation programmes and encouraging Saudi students to use translation technology in various translation courses, not only in CAT tool courses.

1.4 Objectives

The main objective of this study was to identify and help narrow the apparent gap between Saudi Arabian university translation programmes and industry needs. To this end, it investigated the relationship between translation teachers' views about professional practice and trainers' intentions regarding translation technology use. In addition, it examined the implementation of an applied training programme that could be suitable for the Saudi Arabian industry. Based on the findings, it sought to determine ways to improve translator education and training. Finally, the researcher hopes this study will raise awareness of this issue and help lead to positive changes.

1.5 Research Questions

In light of the objectives outlined above, this study sought to answer the following research questions:

1. What are the current gaps between Saudi Arabian universities and the needs of the Saudi Arabian translation market in terms of intention to use CAT tools?
2. How can a translation technology user in Saudi Arabia develop awareness of modern CAT tools?
3. Are Saudi Arabian undergraduate students trained to use appropriate CAT tools to meet the needs of the Saudi Arabian translation market?
4. Are professional translators trained to apply appropriate CAT tools to meet the needs of the Saudi Arabian translation market?
5. How effectively are CAT tools used in Saudi Arabian universities and the Saudi Arabian translation market?

1.6 Structure of the Thesis

This thesis is divided into nine chapters. Chapter 1 gives a general background on the problems the study seeks to address, the significance of the study, and the research questions and objectives. Chapter 2 reviews the relevant literature on the Saudi Arabian language services industry, including an overview of Saudi Vision 2030, translation technology, education and training, translation market needs, professional translation associations, translation skills needed, major obstacles, and project management tools. Building on previous research, Chapter 3 presents a detailed overview of CAT tools, and Chapter 4 describes the methodology of the study. Chapter 5 presents the qualitative interview results, Chapter 6 presents the quantitative questionnaire results, Chapter 7 discusses the training session results, and Chapter 8 discusses the findings as a whole. Chapter 9 concludes with answers to the research questions, limitations, recommendations for future research, and implications for practice.

Chapter 2
Literature Review

2.1 Introduction

This chapter explains the political, educational, and cultural background of the Saudi Arabian language services industry and the challenges and opportunities the industry currently faces, according to the available literature. It begins by outlining Saudi Vision 2030, a national development project calling for higher-quality language services (see Section 2.2). With this project as a motivating force, the chapter gives an overview of translation technology and the market needs of the translation industry in Saudi Arabia, the professional context for which universities are supposed to be preparing students as future translators (see Section 2.3). This leads to a general discussion of the acquisition of translation skills (see Section 2.4) and a broad overview of the Saudi Arabian language services industry (see Section 2.5). The chapter then discusses local-level professional translation organizations (see Section 2.6) and the need for better technology to prepare students and equip professional translators (see Section 2.7). This is followed by a consideration of the current state of training for Saudi Arabian translators in universities and the workplace (see Section 2.8), major obstacles to better translation outcomes in Saudi Arabia (see Section 2.9), and the scope for improving current practices (see Section 2.10). The chapter reviews technology-related training (see Section 2.11), translator training in general (see Section 2.12), causality in translator training (see Section 2.13), and quality assessment and quality assurance in the translation industry (see Section 2.14). An extensive overview is given of translation project management (see Section 2.15), preparation for translation management (see Section 2.16), and the analysis of translation projects (see Section 2.17), followed by a summary of the chapter (see Section 2.18).

2.2 Saudi Vision 2030: The Need for Innovation

Saudi Arabia is currently undergoing an economic, cultural, and political transformation called Saudi Vision 2030, which aims to revitalize the national economy over the course of 15 years between 2016 and 2030 through a series of reforms (Saudi Vision 2030, 2017). The following quote lays out, in the organization's own words, the reasons for a major overhaul of education and translation in the country:

> [This plan seeks to produce] A thriving economy providing opportunities for all by building an education system aligned with market needs and creating

> economic opportunities for the entrepreneur, the small enterprise as well as the large corporation. Therefore, we will develop our investment tools to unlock our promising economic sectors, diversify our economy and create job opportunities.
>
> Economic growth and improvements in the quality of services will be done by privatizing some government services, improving the business environment, and attracting the best talent and investment to the country. Due to the importance of translation in the world today, an important part of this process will be the Saudi language industry. (Saudi Vision 2030, 2017, p. 77)

Essentially, Saudi Vision 2030 is a national development programme focussed on transitioning Saudi Arabia from a primarily oil-based economy that gets most of its income from resource extraction to a knowledge-based and services-based economy that relies less heavily on fossil fuel as a source of income (Alzahrani, 2017, pp. 1-12). In order to successfully execute this project, the Saudi Arabian government and private industry need to expand the language processing and translation services currently available in the country (Alzahrani, 2017, pp. 1-12). As Alzahrani (2017, pp. 1-12) noted, translation services are needed that are tailored to the economic structure of Saudi Arabia and local business operations, with particular need for the translation of financial reports, market analysis, and electronic correspondence. Furthermore, interpreting and translation services are necessary to help transition Saudi Arabia toward being a more knowledge-based economy in all sectors of the economy. Because of the need to use different languages and deal with drastically different cultures from around the world in a more globalized business environment, high-quality translation and interpreting are a key activity required to meet emerging and evolving labour market demands as the economy gradually transitions away from the oil industry. Translators in different Saudi Arabian industries who have high-level linguistic and cultural proficiency would thus have a significant advantage in this market. In order to meet market demands, the education system needs to improve its teaching methods and goals in order to produce more translators and interpreters who can compete in this shifting environment. A core area where education can improve is its application of modern translation technology.

2.3 Establishing the Literature, Publishing and Translation Commission

The Literature, Publishing and Translation Commission was established in February 2020 (10/6/1441 AH). The role of the Commission is to regulate and manage the literature, publishing and translation sectors in the Kingdom. The Commission's purpose is to work towards the goals of Vision 2030 and the Saudi National Culture

Strategy as it seeks to professionalize the translation sector in accordance with the highest global standards, promoting international cultural exchange, and enriching Arabic content. To achieve these goals, the commission will develop dynamic partnerships, expert practitioners, and innovative techniques.

The need to develop the translation industry stems from its importance in contributing to the success of Saudi Vision 2030 by involving translation services in major sectors including the economy, education and tourism. For more details, see: https://lpt.moc.gov.sa/en/about-the-commission

2.4 Tourism in relation to Translation According to Saudi Vision 2020

The tourism sector constitutes an important component in the development of the national economy. Given the different languages spoken by tourists, translation plays a vital role in increasing tourism expenditure. Partly reflecting the increasing integration of translation into tourism, the Tourism Information and Research Center (MAS; https://www.eyeofriyadh.com/directory/details/4714_tourism-information-and-research-center-mas) recorded an increase of 26%in tourism expenditure in the Kingdom from SAR 130.5 billion in 2015 to SAR 164.6 billion in 2019.

The National Center for e-learning is the competent authority for all matters relating to e-education and training, promoting language education, translation, and linguistic research. It provides a variety of services and programmes to develop language proficiency and translation abilities which can be effective in using CAT tools in Saudi Arabia. Through this Center, the Saudi government has supported translation initiatives to increase Arabic speakers' access to information originally written in other languages. This includes the translation of academic, scientific, and culturally significant works. According to the National Center for e-learning, with the goal of attracting foreign investment and fostering business growth, there has been a focus on translation and localization in the business sector. This is particularly important given Saudi Arabia's increasing engagement with international markets. For more details, see:
https://www.my.gov.sa/wps/portal/snp/agencies/agencyDetails/AC399/!ut/p/z0/04_Sj9CPykssy0xPLMnMz0vMAfIjo8zivQIsTAwdDQz9LQwNzQwCnS0tXPwMvYwNDAz0g1Pz9L30o_ArAppiVOTr7JuuH1WQWJKhm5mXlq8f4ehsbGmpX5DtHg4ANOKZFw!!/

Saudi Arabia has thus shown an interest in developing its language industry and translation market as part of its broader economic and cultural diversification initiatives, as reported by the NLC in Saudi Arabia in September 2021. In support of Vision 2030, the Saudi government has developed a number of initiatives to promote language-related activities, including translation and interpretation.

2.5 Overview of Translation Technology and Saudi Arabian Market Needs

This section considers the current state of translation technology in relation to Saudi Arabian market needs. According to Mişova and Globa (2013, pp. 139-146), the increase in global trade and the tendency of people to work globally has increased the demand for translation technology as it helps in eliminating barriers between languages and promotes knowledge transfer. In this context, knowledge in the field of translation is vital in order to perform the translation task efficiently and avoid problems with the translation process. Translation helps in providing knowledge of different things in a language that a person can understand. However, Biel (2011, pp. 61-76) stated that the process of review is also a vital step in translation as improper translation may provide misleading information that is not useful to anybody. The improper information provided from faulty translation may provide inaccurate knowledge to translation students at university and have an adverse impact on their learning. The absence of review services may also cause the translation to be ineffective by not attaining the goals specified from the implementation of those services in actual practice.

A particularly important goal of translation in a developing economy such as Saudi Arabia is knowledge transfer, which often requires knowledge translation. As noted by Chan et al. (2020), knowledge translation is a vital process that provides knowledge about a subject to people associated with different fields outside of that subject. Knowledge transfer is a process of promoting communication between the professionals associated with different fields, such as healthcare professionals, scientists, management professionals, political or business leaders, journalists, and educators. This transfer of knowledge promotes interaction between professionals in these different fields and removes barriers to interdisciplinary understanding, cooperation, and growth. As noted above, such interaction is urgently needed in Saudi Arabia as it transitions away from oil.

According to Fatani (2009), due to the entry of Saudi Arabia into the World Trade Organization, the development of economic centres in several parts of the country, and the huge number of diversified sectors that have formed an alliance with

Microsoft, the demand for interpreting and translation services has increased rapidly in the country. Local, national, and international organizations, banks, business entities, government agencies, courts, healthcare centres, and many other enterprises that operate in the global landscape in Saudi Arabia are beginning to depend more on the services of interpreters and translators for communicating with each other and with their customers. Thus, the escalating pace of globalization in different sectors of Saudi Arabia has stimulated the need for more adequate translation practices.

A research study undertaken by Fatani (2009) showed that the major institutions embracing translation technology in Saudi Arabia included the Saudi Electricity Company, the Islamic Development Bank, the Shura Council, and Saudi Aramco, the largest oil company in the world. With the integration of translation technology for supporting routine operations, these organizations have been able to increase the consistency of their documents, shorten market time, significantly reduce costs, and facilitate communication in multilingual scenarios. Large multinational enterprises require robust translation solutions for facilitating communication between employees with different native languages to ensure that linguistic and cultural differences do not obstruct organizational efficacy. The success stories of companies like Saudi Aramco and the Islamic Development Bank provide a model for the extension of translation technology to numerous other businesses in the country in order to strengthen their regional and global competitiveness.

According to Alhamdan (2018), advances in technology have dramatically changed attitudes, perceptions, and approaches and the way people do business in the Arab region, as with other parts of the world. Technological advances have reduced the language barrier, enabling people to interact in the different languages that are required in their routine professional career and personal life. With the use of technologies for streamlining translation processes, it is possible for business ventures in Saudi Arabia to expand their operations across potential markets where once language appeared a major hurdle. However, while digital applications in the region are effective for quick translations, they have not replaced professional translators. In the same vein, Al-Jarf (2017, pp. 1-7) noted that one of the latest developments in the translation industry worldwide was the integration of computer technology. In the 25 years prior to Al-Jarf's study, more than 80 CAT systems had been designed by organizations in different countries for different purposes and language pairs, and about 600 multinational entities used CAT systems for overcoming their language problems.

Al-Jarf (2017, pp. 1-7) further noted that such developments had likewise been found in Saudi Arabia. However, in Saudi Arabian university classes, students were still introduced to only general theoretical challenges in machine translation and were not

provided with the opportunity to use machine translation systems, thus hindering their development in this pivotal domain. In light of these challenges to the adoption of translation technology in Saudi Arabia and to enable Arabic-English and English-Arabic translation students to develop in line with labour market demands in the twenty-first century, Al-Jarf concluded that it is essential to integrate relevant digital technology.

According to a study conducted by Alghamdi et al. (2012), one of the major Saudi Arabian projects in language technology is the establishment of a machine translation lab in collaboration with the U.S. company IBM. The target of this lab is to develop state-of-the-art Arabic translation mechanisms for other regional languages that often interact with Arabic, such as Urdu, Turkish, Farsi, Hebrew, and Hausa. Initial efforts in the lab have helped to build a much more reliable Hebrew-Arabic translation technology system and a strong foundation for a Farsi-Arabic translation memory system. Training in different systems was required for the Saudi translator to be able to use the open-source statistical machine translation system Moses.

As many previous scholars have noted, advances in computer technology represent increasingly vital tools for translators today (Bowker, 2002), such as machine translation (Doherty, 2016, p. 3). These technologies not only boost quality and productivity in translation but also support international communication, illustrating the growing need for novel and innovative technological solutions to complex language challenges. Given the adoption of CAT tools by translators around the world, it would thus appear important for Saudi Arabian translators to have these tools and the training to use them in order to meet the country's rising need for language services.

Illustrating this need, freeing them to focus on pre- explained how translation technology is pivotal to speeding up globalization worldwide as global interaction is not possible without interlingual communication. Therefore, globalization implies a growing need for translation, yet many people are not able to—or wish to—overcome the related language barriers. Thus, using the latest translation technology can help in automating the translation process while offering massive savings in terms of cost, time, and effort. According to Folaron (2010, pp. 446-450), with the explosion of digitalization and the proliferating culture of Web 2.0 technologies, conventional human translation cannot keep up with the translation demands of today and the future. However, the translation industry still uses a very small amount of translated digital content. The language services market as a whole has enjoyed year-on-year consistent growth in the last few years. With the increasing number of Internet users, presently in the billions, it is believed that translation technology can offer an

efficacious solution to managing and sharing this explosion in available content, which cannot be managed by traditional human translation alone.

One of the most fundamental elements of translation is terminology management, which can be facilitated by tools such as term-bases and translation memories. A barrier to terminology management for novice Saudi Arabian translators is the lack of unified terminology based on the strategy recommended by the ISO 1700 terminology management standardization report.

Creating the above tools involves term extraction. While some term extraction tools are monolingual (extracting terms within a single language), other systems are able to detect exact matches of words or phrases in various languages, and for this reason, are able to find differences between words in different languages (Gil-Salmerón et al., 2021, p. 7901). This translation-based system works on a machine learning platform in which the patterns are extracted in the source language, and the matching patterns in the target language are evaluated in order to arrive at a suitable target text. Therefore, it is vital to first evaluate the quality of the text that is to be translated with the help of tools and techniques before conducting the translation.

Based on terminology matching tools and artificial intelligence, machine translation represents an important technological advancement that increases the productivity of human translators, freeing them to focus on pre- and post-editing larger quantities of machine-translated text (Koponen, 2016, p. 148). In this way, machine translation is much quicker and more efficient than human translators, a major reason why it has become more common in public and private sector entities operating in many different fields today. Ensuring lower costs is another pivotal benefit of machine translation as it only requires a one-time investment, specifically the cost of installation and related tools. Furthermore, it helps maintain confidentiality in the translation process as people can use it to translate private correspondence and financial documents more securely, making automated technology-governed translation very much worthwhile for business entities and professionals aiming for greater privacy. It is also important to note that human translators specialize in specific domains, while machine translation programmes can easily translate texts in various domains once they are properly programmed and trained.

For the reasons outlined above, there has been a surge of interest in recent years in machine translation technology in the Arab region, particularly with the accelerating demand for translation services into and out of Arabic (Almutawa and Izwaini, 2015, p. 382). As the relevance of translation has increased drastically, due to the substantial amount of material requiring translation in different fields, machine translation has gained enormous attention worldwide. It is believed that following the transition in

information technology across the world, more translation will be required, and since human translators might not be able to handle the vast volume of material needing translation, there is growing interest in developing more automation in the industry, which can save energy, time, and money. As Saudi Arabia seeks to improve its quality of life, individuals and entities need to access novel information and technologies and benefit from the experiences of other people and cultures from around the world, which could be facilitated by more and better translation. Machine translation is expected to foster technology transfer efforts, making more information about technology available to Arabic speakers in their native language and hence accelerating economic and social reforms.

Despite these benefits, Kerremans and Stengers (2017, p. 55) noted certain drawbacks that have been associated with CAT tools. One of the main issues is a frequent lack of exactness and inferior quality when translating ambiguous sentences and words. Still, the many advantages that come with translation technology are greater than the limitations, making translation technology-based solutions crucial in the contemporary environment.

Elsherif and Soomro (2017, pp. 169-173) noted how several problematic issues can arise in the process of translating between Western and Arabic cultures and languages using translation technology. One issue is that more development has been made in translating between Western (largely Indo-European) languages, which could pose a challenge when adapting this technology to Arabic, which belongs to the Afro-Asiatic language family. Arabic is a morphologically complex language, and thus in theory terminology transfer into Arabic should be straightforward. However, the reality is different as other attributes of the Arabic language make the translation process much more challenging even with technology integration.

In light of growing demand for translation in diverse societies and workforces, it is vital for Saudi Arabia to leverage translation technology rather than relying on older methods of translation (Alzahrani, 2017, p. 9). To ensure stable, long-term economic development, it is important for Saudi Arabia and similar countries to catch up with the financial, scientific, and technological advances being developed across the globe, speeding up technology and knowledge transfer in the Arab world. Translation technology can assist in modernizing the Arabic language by adding novel terms and concepts through Arabicization and coinage. Translation technology could help in making retrieval, extraction, and translation of information easier for Arabic-speaking users, bridging the gap between individuals in the Arab region and their competitors in technologically stronger nations.

Khan (2011, pp. 1248-1257) explained that translation technology could be beneficial to Saudi Arabia in the ways outlined above; however, certain benefits presently appear to exist more in theory than in practice. Such benefits include coping with the expanding demand for translation from government authorities and multinational entities as well as keeping pace with scientific, economic, financial, and technical developments seen in other languages. Moreover, modernizing the Arabic-speaking world by facilitating the development of innovative terms and concepts and transferring the latest technology and knowledge to Saudi Arabia are other theoretical benefits of adopting translation technology. To turn these theoretical benefits into real assets, however, current and prospective Saudi Arabian translators need to acquire new skills related to technology and industry best practices.

2.6 Acquisition of Translation Skills

According to Al-Jarf (2017, pp. 1-7), the demands of the current language translation sector of Saudi Arabia are highly inclined towards the adoption of Western technological advancements. Translators as well as interpreters in the industry are focused on the adoption of advanced machine translation systems such as speech recognition software and SDL Trados Studio. There is an urgent need in the industry to introduce new and veteran translators alike to the online platforms of specialist dictionaries as well as online resources related to interpretating. Furthermore, the Saudi Arabian language interpreting and translation sector has been required to work towards increasing awareness about informational resources such as terminology databanks, translation directories, translation websites, and CAT tools (Saudi Vision 2030, 2017). The Saudi Terminology Databank, for example, has been extremely useful for the translation associations in the King Abdul Aziz Science and Technology City, holding 400,000 entries for terms in different fields (Al-Jarf, 2017, pp. 1-7).

The translation industry in Saudi Arabia is moving towards a wider incorporation of remote services where the adoption of digital tools is suggested for developing advanced translation training and courses (Alkhatnai, 2021b, pp. 71-96). In addition, translators are very interested in undergoing the new training programmes for learning CAT tools and general media tools. More recently, due to the emergence of the COVID-19 pandemic, the Saudi Arabian translation industry has observed an increased need for translators to follow the globalization restrictions related to this pandemic.

In an earlier work, Kiraly (1995) noted that a “lack of clear objectives, curricular materials and teaching methods implies a pedagogical gap in translation skills instruction” (p. 5). This is a common problem that is encountered when translation

instructors focus on theory over practice and are not aware of the future professional needs of their students (Dimitrova, 2002). Many researchers (e.g., Dimitrova, 2002; Fuchs and Lederer, 2007) have indicated that most translation instructors in universities are current or former language teachers rather than professional translators or interpreters who can share personal experience from the industry, which is a likely reason for the current state of affairs.

As one way to address this issue, Catherine Way proposed that students should be provided with tools for self-review in order to identify their own strengths and weaknesses (cited in Leppihalme, 2013, pp. 138-140). She reported encouraging results from her approach and argued that the exercise benefited students in many ways, including building confidence and encouraging them to adopt more successful strategies. In a study seeking to develop a new approach to translator training, Mayoral Asensio (2007) argued that such training should be based on didactic criteria and organized around problem-solving, in addition to analysing available solutions, text analysis, and the social context of translation.

The European Commission produced a report on mechanisms to assess translator ability in the European Union in 2011-2012, making comparisons with the United States, Canada, and Australia (cited in Pym et al., 2012, pp. 21-30). The report was based on previous surveys and the input of around 100 experts and informants. It proposed mechanisms affecting marketing and focused on academic qualifications, professional certifications, membership in professional associations, and the number of years of experience working in the translation field. Pym et al. (2012, pp. 21-30) stated that this classification was also used in several countries (e.g., Croatia, Poland, Portugal, and the United Kingdom) and in principle should apply throughout the European Union. This model could be employed in (or adapted to) the Saudi Arabian context as well, and several elements, including academic qualifications and professional associations, are discussed later in the present study in terms of how they are related to the Saudi Arabian context. First, economic criteria could be used to adapt international standards to determine the status of translators in Saudi Arabia. Second, the Saudi economy could be improved by employing international standards adopted elsewhere in the language services industry, bringing the skills and expectations of the Saudi industry in line with leading economies around the world.

According to Alkhamis (2013, p. 117), the government of Saudi Arabia has increasingly sought to address the emerging need for better interpreting and translation services. Recent improvements in this regard are evident from better employment opportunities for professional translators and the establishment of economic centres in several parts of the country. In another study, Abu-ghararah (2017) found that Saudi Arabia had contributed to the translation industry by

launching an international award for different translation works and introduced the King Abdullah Bin Abdulaziz International Award exclusively for translation. However, expanding demand for efficient translation services in the country has generated the need for equally sound academic translation courses, which can help in resolving the challenges faced by the government, private companies, relief entities, and those working in the tourism sector.

Today, Arab governments are propagating national translation programmes, but many translation projects and programmes in the region date back to the second half of the twentieth century. Translation activities in the Arab region were dominated by French and English as key languages, particularly between 1995 and 2002. However, the quality of the majority of translation work in this period was inconsistent. A variety of universities in the Arab world offer undergraduate and graduate translation training and training programmes. Some notable examples include the King Fahd School of Translation in Morocco, the American University of Sharjah in the United Arab Emirates, the Translating and Interpreting Institute at Hamad Bin Khalifa in Qatar, and the Lebanese American University in Lebanon (Almutawa and Izwaini, 2015, pp. 382-414). However, according to Omar et al. (2020, pp. 287-292), most such academic translation programmes have been shown to not be effective, indicating a lack of effort going into the acquisition of translation skills in the countries concerned. The translation programmes offered by different universities are not satisfactory mainly because of inadequate syllabus design for facilitating translation skills. Moreover, the materials used are not effectively authenticated and thus do not help in meeting the practical needs of the learners in the current market.

In another recent study, Gutas (2012, p. 195) noted that in addition to academic programmes, the Arab world has several specialized academic journals that are centred on publishing translation articles and studies, such as *Studies in Translation* and the *Journal of Translation Studies*. Additionally, the Arab world hosts different translation organizations for launching and promoting translation skills and activities, such as the Arab Organization for Translation, which was first launched in 1999 in Beirut, Lebanon. The key agenda of this specialized international non-governmental organization is to offer Arabic readers translations of key works dealing with human beliefs and knowledge, mainly scientific publications, journals, and books. For promoting translation skills, numerous workshops and conferences are also organized in Saudi Arabia and other countries.

As noted in Abu-ghararah's (2017, p. 113) study, competent translation skills needed for a thriving translation labour market include researching, composition, analysis, awareness about translation ethics, and the association between culture and language. It is also important for translation instructors to possess several types of skills for

carrying out the fundamental tasks of the sector. In light of these requirements for advanced translation skills in Saudi Arabia, Abu-ghararah stated that it is important to design coursework to include areas such as text typology and genre types within a pedagogically comprehensive curriculum in order to give students a solid foundation in theoretical concepts. Then, through the consideration of text and genre type specifically, the translation competencies of students can be strengthened. Abu-ghararah explained that it is also essential for translation instructors to emphasize communicative competence, which denotes the capability not only to infer and express meanings but also to negotiate such meanings. In the process of overseeing the acquisition of translation skills, it is vital to understand that translation is a complicated process when seen from the perspective of designing translation pedagogy courses and the tactics through which instructors deliver instruction about translation.

In a similar context, Alkhamis (2013, p. 76) asserted that expert insight and behaviour should be one of the main components of teaching translation to ensure students acquire the skills they need in order to become experts in cross-cultural communication. Such expert behaviour entails encouraging self-awareness, building self-confidence, and the potential to assess one's work more objectively. It also encompasses skills such as being able to interact with others professionally and to help find translation solutions face to face or through electronic correspondence.

Translation software is a vital part of modern commerce, facilitating international business, diplomacy, and communication in general (Laviosa, 2014, p. 86). It does this by greatly increasing translators' productivity and consistency while reducing costs and the likelihood of errors (Laviosa, 2014, p. 86; Siddiqui, 2014). For this reason, individuals working in the language services industry need adequate training to use CAT tools, such as translation editors, translation memories, term-bases, and software localization programmes.

Despite the importance of this technology, a major problem I had after finishing my bachelor's degree at a university in Saudi Arabia was the lack of training with CAT tools. Courses at this university thus did not meet the basic technical needs of the industry. In contrast, during my graduate studies at Kent State University in the U.S., that university's translation studies programme taught translation in multiple ways—including hands-on practice, theory, and technology—and thus better prepared students to meet industry needs.

One of the most fundamental types of translation technology today is the translation memory, "a database that stores source and target language pairs of text segments that can be retrieved for use with present texts and texts to be translated in the future"

(Webb, 2000, p. 6). In addition, machine translation leverages artificial intelligence for document drafting, term extraction, information retrieval, and scanning translation (Laviosa, 2014, p. 88).

Another core area of modern translation is software localization, which enables people "in different locales using different languages to make use of localized software systems without difficulties" (Sandrini, 2008, p. 3). In this context, a software system would include "All non-material components of an electronic system", such as "Operating systems, compilers, hardware drivers, utilities and testing tools [as well as] databases, image manipulation, office application suites, desktop publishing, [and] games" (Sandrini, 2008, p. 3). Usually, a piece of software will come with a printed manual, quick reference guide, registration cards, promotional material, or similar resources, all of which need to be translated.

In the context of Saudi Arabia, even before the advent of Saudi Vision 2030, the need and desire to access new information and technology had dramatically increased (Smith and Abouammoh, 2013, p. 95) and with it a growing need to improve the quality of translation (Soudi et al., 2012, pp. 95-108). While the software localization tools described above are used by the Saudi Arabian government and in the private sector, Saudi Arabian universities do not offer specialized software localization training (Smith and Abouammoh, 2013, p. 127). As a result, their graduates enter the market without the technology skills that would make them competitive in the Saudi Arabian language services industry.

2.5 Language Services Industry in Saudi Arabia

According to Almutawa and Izwaini (2015, pp. 382-414), Saudi Arabian professional translation associations—such as the translation centre at King Faisal University and the translation unit of the Riyadh Chamber of Commerce and Industry—use machine-based translation with the aid of software such as Babylon and Google Translate. Despite this, the translation services offered at King Saud University did not involve machine translation as the staff and faculty members were not interested in this technology. Almutawa and Izwaini also revealed that 13 out of 15 selected translation agencies in Saudi Arabia disapproved of pursuing the use of machine translation. Nonetheless, numerous machine translation systems have been developed for Arabic that are specialized for managing the increasing needs of the translation industry. These systems include the Sakhr system, CIMOS, Bing Translator, the Babylon Translation System, Google Translate, ATA, and SYSTRAN, which automatically translates from Arabic to English.

Abu-ghararah (2017, p. 112) argued that Saudi Arabia's accession to the World Trade Organization had increased the demand for language translation services. Abu-ghararah (2017, p. 113) estimated that professional translation associations such as the King Fahad National Library translated about 3,300 books between 1996 and 2007 into Arabic. Moreover, King Saud University implemented plans for translating about 250 books over five years. Furthermore, about 100 books were translated into Arabic in 2014 by the King Fahad National Library. These important efforts have been carried out without creating even one translation memory for public or internal use by translators. Abu-ghararah's findings showed that the translation services provided by private as well as governmental institutions of Saudi Arabia were less effective due to gaps in the academic training of the translators as well as the growing demands of the Saudi Arabian market:

> The Saudi market has a demand for several text-types. Fatani (2009) found in her survey that '84% of respondents stated that hospitals and embassies, for instance, require specialization in medical and diplomatic translation, as well as an ability to translate simultaneously 88%, two skills that are hardly addressed in the Saudi curriculum. Another 73% stated that translation bureaus require the ability to translate texts in different fields'. (Abu-ghararah, 2017, p. 20)

The Saudi translation market is identified as generating demand for different types of texts; 84% of experts consulted by Fatani (2009) reported that there was a need for increased specialization in translation services according to the translation demands of hospitals and embassies in Saudi Arabia (cited in Abu-ghararah, 2017, p. 20).

Alkhatnai (2021b, p. 96) discovered that technological aids—such as translation memories, statistical machine translation, and neural machine translation—were commonly used in Saudi Arabian translation services to translate Arabic texts into other languages such as English. Saudi Arabian language services, as well as the translation services sector, appeared to be cognizant of new trends that have been increasing the demand for remote translation. Translators working in the Saudi Arabian translation industry were found to be dedicated to undertaking professional development courses in the field of machine translation in order to attain high-quality translation outcomes. Alkhatnai (2021b, p. 96) also argued that language-translation professionals in Saudi Arabia needed to be identified to develop the local workforce culture.

Alkhatnai (2021a, pp. 71-96) noted that economic knowledge centres across the various regions of Saudi Arabia, as well as the involvement of the business sector in a strategic partnership with Microsoft, had led to the transformation of interpreting and translation services in the country. Saudi Arabia has approximately 5.5 million

foreign people living and working in the country, which has generated lucrative opportunities for the industry to initiate more translation and interpreting services. Alkhatnai found that because of the COVID-19 crisis, the work of translators had been disrupted and the income levels of translators and interpreters had declined by about 50%.

Abu-ghararah (2017, p. 114) discovered that Saudi translation experts faced high demand for both translation and simultaneous interpreting. About 88% of the translation experts reported an increased demand for simultaneous interpreting services. According to 73% of the translation experts in translation bureaus, Saudi Arabian translators need to become capable of translating texts that belong to different fields. The Saudi Arabic translation market needs expert translators in such fields as the law, the humanities, religion, computer hardware, computer software, and engineering. There is also a need to introduce changes in academic translation courses in light of growing translation demands in Saudi Arabia. In response to these demands, it is essential to incorporate courses in voice recognition, commercial translation, multimedia translation, and subtitling.

ElShafei (2014, pp. 145-154) argued that in order to meet the market demands for translation services in Saudi Arabia, there is a need to offer more professional training to translators. With technological advances, there is a need to introduce changes in the planning of translation courses. There is also an increased need to develop a professional approach to offering education to translators who are working in the arts in order to make sure that their skills are suitable for current market needs. In light of the market research carried out at King Abdul Aziz University, it could be argued that in order to manage the translation potential of language experts, the use of translation technology and associated learning about related software needs to be introduced into translation curricula.

Furthermore, ElShafei (2014, pp. 145-154) argued that the incorporation of a more professional approach would help improve Saudi-based translation as well as foreign language translation standards as such an approach would contribute towards enhancing the skills for using CAT tools among translators and interpreters. Moreover, a broad incorporation of professional training would contribute towards increasing the profitability of the translation industry in Saudi Arabia by opening up new job opportunities for technologically proficient translators through the advantages offered by digital media.

One set of requirements and regulations for Saudi Arabian interpreters and translators is that established by the Shura Council for its internal translators and interpreters. The Shura Council is a 150-member national consultative assembly made up of

scholars appointed by the king of Saudi Arabia. The Council proposes legislation and advises the king and, as such, requires individuals to translate documents and interpret meetings. According to Fatani (2009), translators who work in the Shura Council are all Saudi nationals, most of whom are graduates of King Saud University. The requirements for translators include full fluency in English and a minimum GPA of 3.5 out of 4. Candidates must also pass a written translation test, an interpreting test, and a personal interview. High-school graduates are recruited as well, provided they are fluent in English. There are a total of 10 translators, two of whom are assigned to the President of the Council, while three trilingual translators are in charge of parliamentary affairs. The translation technology used is the Golden Wafi Translator supplied by London-based ATA Translation Software, which specializes in Arabic business software, including machine translation, specialized dictionaries, and text-to-speech translation. Translation technology is thus currently found in Saudi Arabia, but the training offered at most Saudi universities is still behind market needs.

2.7 Professional Translation Associations in Saudi Arabia

Membership in a professional association, society, or union is one of the clearest ways by which a translator can signal their professional status to prospective employers. In the language services industry, major factors for useful professional associations are "admission criteria, longevity, size (number of members), inclusion in wider or parent associations, specialisation, and in some cases the number and quality of services to members and public interventions" (Pym et al., 2012, p. 33).

According to Saudi Vision 2030 (2017), the Saudi Arabian language services industry needs graduates who meet high international standards. However, the country has few translation organizations, and public conferences for Saudi and non-Saudi translators are rare, so there are few opportunities for cooperation between the private and public sectors to participate in addressing translation market needs. The Ministry of Culture (n.d.-b) established the first Saudi Arabian translation authority only recently to meet the goals of Saudi Vision 2030, which published the Cultural Vision Guidelines for the country in 2019. A central objective is "Creating opportunities for international cultural exchange" in order to meet international standards (Ministry of Culture, n.d.-b). In March 2020 at Princess Nourah University, the first Saudi Arabian translation conference was held, and the Literature, Publishing & Translation Commission was established in February 2020, the first Saudi Arabian organization created to support translation in pedagogy, training, and marketing. As such, translation organizations in the country are in their infancy and could benefit from more research on the local industry, the regional market, and global trends.

2.8 The Need for Better Translation Technology in Education and Industry

According to Assulaimani (2019, pp. 1623-1634), translation service providers in Saudi Arabia and the Ministry of Education need to introduce computer-based translation courses in secondary schools. In response to changing market demands and education reforms, the Saudi Ministry of Education has begun promoting computers and specialized software for teaching different subjects. Staff training projects such as Jehazi and Watani have also been introduced by the Ministry of Education for employees working in Saudi Arabian translation associations; such projects aim to help employees make more effective use of information and communication technology in order to optimize the translation process. Assulaimani's findings showed that in order to improve the standards of the Saudi translation industry, government agencies were making an effort to introduce computer software and other technological aids. According to Assulaimani, offering specialized training to the existing translation and interpreting workforce is a useful strategy for sustaining the long-term advancement of the Saudi Arabian language services industry.

Al-Seghayer (2014, pp. 89-99) argued that companies and institutions in Saudi Arabia are increasingly reliant on audio-lingual systems to provide training in second languages and translation. In order to teach a second language such as English, it is more effective to use grammar-translation systems, which encourage students to provide detailed explanations while translating texts. The use of grammar-translation systems can help in revolutionizing the translation and language learning sectors of Saudi Arabia by helping students with memorizing vocabulary, learning grammatical rules, and speeding up the translation of texts.

The limitations of the Saudi Arabian language services industry are not confined to spoken languages but have been found to include sign languages as well. For example, a study by Ahmed et al. (2017, pp. 325-330) noted that Saudi Arabian translation services tended to be inefficient at translating Arab sign languages. The documented insufficiency of grammatical structures as well as sentence-framing rules in the Saudi Sign Language poses a problem in the development of machine translation.

Although there is also a project to create a Unified Arabic Sign Language for news, the translation industry at present has difficulty handling sign language translation in the absence of a consolidated system. However, an Arab sign language corpus is being developed, which involves a series of annotations that can be used for making quick translations of the language. An automated sign language translation system is also being developed by translation industry experts for effective management of translational problems such as synonyms and pluralization.

2.9 Current Saudi Translation Training Programmes

In Saudi Arabia, translation training programmes are mainly found in public universities and institutes (Fatani, 2007). As a result, although some private institutions provide such training, most Saudi Arabian translators get their training at public universities (Fatani, 2007). Only a few studies—such as Farhan (2014), Abughararah (2017), Zaitoni (2012), Alhamdi (2012), Smith and Abouammoh (2013), and Al-Khatib (2005)—have described the Saudi Arabian language services industry from a wider perspective. These fall into one of two types: a general description of issues (Fatani, 2007, 2009) and the socio-cultural challenges in the translation market (Al-Nahi, 2017). There is likewise a general lack of research on Saudi Arabian translation studies programmes. In fact, I could only find three sources evaluating such programmes, but they failed to explain the current situation of the Saudi Arabian language services industry. These three studies are touched on below.

Fatani (2009) is one of the few studies to analyse the translation industry in Saudi Arabia. The results provide empirical data about translator training, professional needs, and the gap between them. Fatani summarized the Saudi Arabian language services industry as "rather crude", as even licensed companies failed to use modern translation software. In fact, they often looked up terms in dictionaries rather than employing a dedicated online term-base, and bilingual speakers were often employed rather than translators with professional training. There is also a lack of specialization in specific fields, resulting in companies working with bilingual individuals instead of professionals. Earlier studies by Al-Jarf (1999) and Fatani (2007) reached similar conclusions.

Based on my personal experience pursuing a bachelor's degree in English Language and Literature at a Saudi Arabian university in 2007, translation classes followed traditional methods, focusing on translation practice and analysis. For example, the instructor would read the source text to help students understand the content and then give students the meanings of difficult terms before they started translating the text. While this provided practice and feedback, instructors often came from other fields and were not actually professional translators. In addition, the university offered no classes that showed students how to use the various CAT tools that are increasingly vital to succeed in the local and global translation industry.

2.10 Major Obstacles to Better Translation in Saudi Arabia

2.10.1 Introduction

This section explores some of the main obstacles to Saudi Arabia producing better translation services. A core problem affecting all others are the failings of formal education and training (see Section 2.9.2). More specifically, one of the biggest obstacles is culture, including a lack of cultural knowledge and difficulty with intercultural communication (see Section 2.9.3). Others outlined below are obstacles related to terminology and language in general (see Section 2.9.4), technology (see Section 2.9.5), the language services industry (see Section 2.9.6), salaries and wages (see Section 2.9.7), and industry standards (see Section 2.9.8).

2.10.2 Obstacles in Translator Education and Training

Al-Nahi (2017) called for better translation education and training programmes in the Arab world. Low-level and unstructured college curricula have led to poor outcomes and unqualified translators flooding the market. Despite various efforts, Arab universities have failed to improve their training. Other major challenges include a lack of consistent university content and professional faculty. This has led to low numbers of students seeking a translation major. As a result of this situation, relatively few people with higher degrees in translation studies have been entering the field.

Abu-ghararah (2017, p. 112) noted a lack of translators for the Saudi Arabian court system as well, stemming from the largely unregulated nature of translation in the country and the lack of qualification assessment for the Ministry of Justice. It should therefore be a requirement at Saudi universities to help translators become more aware of the state of the industry to both develop it and protect it from being affected by poor performance. A greater use of modern technology would also make the industry more efficient and sustainable. For example, Saudi Arabian professional translators need to be easy to contact for rush work and critical situations, and term-base systems would make their work considerably easier.

2.10.3 Cultural Obstacles

Culture has a massive impact on the Saudi Arabian translation sector and needs to be taken into account in both education and industry (Alkahtani et al., 2013). Taamneh (2018) noted that Saudi Arabian students often lacked a strong background in the culture of the other language. Some cultural factors involve language-oriented challenges, gender-based communication differences, and social hierarchies, all of which can negatively affect the performance of professional translators (Alkahtani et al., 2013). The increased use of the Arabic language tends to cause problems for established translation technology suppliers as there is a significant gap between

Western and Arab cultures that can lead to misinformation and frustration in translation and interpreting. A clear example of cultural challenges in the industry would be the gender norms in the Saudi Arabian translation sector as there tends to be poor communication between male and female interpreters and translators. This issue is responsible for increased risks in information security-related aspects of Saudi Arabian translation operations. Correct translation of terminology is, of course, essential for improved operations in Saudi Arabian translation businesses as incorrect translation of terms may lead to misinformation.

According to Alexander et al. (2017, pp. 351-363), the website translation services sector is also influenced by differences in culture. As a result, the translation sector in Saudi Arabia is experiencing problems in adapting to the different cultures around the globe. To arrive at an optimal translation product, Saudi Arabian website translators need to consider cultural preferences in relation to multimedia as well as the types of visual representation that are typical of other cultures, such as China and Australia. Translations of even simple elements of the target language by means of machine translation are often only correct to a small extent. As Alexander et al. noted, such systems are capable of addressing only a small aspect of communication. Furthermore, this type of translation may lead to errors such as inconsistent phrasing and terminology. As discussed later in the chapter, more sophisticated technology and appropriate training are thus needed to achieve more effective translation outcomes.

2.10.4 Language-Related Obstacles

According to the GPI (2022) website, one of the main obstacles to achieving better translation is the translator's lack of familiarity with source or target notions and expressions. In Saudi Arabia, a major challenge is the failure to attain equivalent knowledge of a second language (often but not necessarily English). One major gap in Saudi Arabian translators' knowledge, for example, is a lack of common expressions in the second language. In addition, GPI (2022) noted that language issues were often related to text, morphology, and pragmatics, all of which make it more difficult for non-native Arabic speakers to translate Arabic. A study by Taamneh (2018, pp. 78-86) similarly argued that some critical challenges facing translation were insufficient knowledge, limited practice with basic grammar, and an underdeveloped vocabulary. Taamneh (2018, p. 80) stated that in Saudi Arabia, even after students had graduated with their degree, they showed an inadequate understanding of the importance of the translation process and did not have enough experience with other cultures. As a result, for example, Saudi Arabian graduates typically faced considerable difficulty translating particular cultural concepts from Arabic to English. To assess the effectiveness of translation, Taamneh (2018, pp. 78-86) conducted open-ended interviews and administered translation tests. The study

outcomes confirmed that students encountered challenges mainly in translating Arabic cultural concepts into English.

The translation of culture-oriented idioms, metaphors, and allegorical language in relation to religious-based expressions have also been identified as major limitations to producing better translation from Arabic into international languages such as English (Omar et al., 2020, pp. 287-292).

According to Al-Khatib (2005, p. 130), translation efforts in the Arab world, including Saudi Arabia, have faced a major problem in using appropriate terminology in engineering, medicine, the applied sciences, and computer science, among other areas. Moreover, lack of coordination between Arabic-speaking countries, even at the local level, has produced difficulties in translation activities as has the presence of multiple Arabic terms for the same English word. This creates confusion and misunderstandings among end users (especially in specialized fields). As a result, people often prefer reading such texts in the foreign language in which they pursued their higher education (e.g., English, French). Thus, a challenge for Arabic translation students is the large number of Arabic terms that vary based on region and country (Alshammari, 2016, pp. 365-372). Even with decent CAT tools, the ambiguity of some Arabic terms has been shown to have a negative impact on undergraduate students' performance (Alshammari, 2016, pp. 365-372). The Arabic translation industry needs to overcome these terminological obstacles, and to this end the Saudi Arabian translation market should offer professional training for novice translators in the use of term-bases and terminology management systems and techniques.

In another study, Salamah (2021, pp. 276-291) revealed major challenges to deploying legal translation in Saudi Arabian institutions. For example, in legal provisions, there are legal terms of a sensitive nature where wrong interpretations could have serious consequences. Thus, clear and accurate translation has a high value in legal institutions, requiring students to fully understand the terms and procedures before accepting translation work in the industry.

2.10.5 Obstacles to Using Translation Technology

A study by Omar et al. (2020, pp. 287-298) identified several complex challenges with regard to managing translation in Saudi Arabia. One such challenge was that translation was considered to be based on creativity, making it impossible to perform through CAT tools. Another challenge was that current technology, such as machine translation, lacked the capability to address the linguistic peculiarities of Arabic (Omar et al., 2020, pp. 287-292). A third issue was that translators reportedly held a negative opinion of translation software due to its high cost, resulting in translators foregoing such programmes. The students also showed anxiety about and disinterest

in using CAT tools for Arabic translation. These barriers could obviously hinder successful translation from Arabic into English or any other international language.

Some additional challenges for Saudi Arabian translators were identified in a recent study by Aljedaani et al. (2021, p. 712). These included inadequate support, lack of ability to understand e-learning-based translation systems, and the cost of Internet access. During the COVID-19 pandemic, school closures, social distancing, and work from home made e-learning more popular (Aljedaani et al., 2021, p. 712). However, e-learning comes with its own downsides. For example, complicated e-learning systems, technical issues, lack of simultaneous or concurrent translation, and network disruption represent some of the main stumbling blocks for online students in Saudi Arabia seeking to improve their translation ability.

Al-Nasser (2015, p. 1612) emphasized that the communicative approach to language teaching (CALT) was an effective way for Saudi Arabian students to learn how to translate from Arabic into English. According to this perspective, using translation technology such as translation memories should help fill the gap between current pedagogy and industry needs.

In the view of Omar et al. (2020, pp. 287-292), teaching translation skills is a challenging task because modern pedagogical principles and new technology are often either absent entirely or are poorly incorporated into the curriculum. In addition, in today's digital environment, it is necessary for translators to understand new and emerging areas such as websites, software localization, and online applications in order to translate more effectively. In response to this trend, some private Saudi Arabian training centres have started to implement CAT tools to a certain extent in their curriculum. However, public universities—where most Saudi Arabian university students study—still fail to offer teacher training programmes that adequately provide educators with a sufficient command of new digital technology that will enable them to prepare their future students to meet industry needs. Furthermore, the quality of translation relies heavily on the qualifications and skills of the translator, but in the labour market in Saudi Arabia, it is very difficult to find qualified translators who have extensive familiarity with newer CAT tools.

Omar et al. (2020) revealed another challenge, that despite the massive developments in software, many Saudi Arabian institutions failed to use new technology when instructing their students. In addition, new translation technology was not encouraged in Saudi Arabian institutions because the Saudi Arabian translation teachers were usually not proficient in these tools, perhaps at least partly because teachers had often not been drawn from the industry they were teaching students about, as discussed previously. These factors clearly require a major overhaul of public educational

institutions in general as well as teacher education programmes. Omar et al. (2020, pp. 287-292) suggested that there are usable online translators—for example, Microsoft Translator and Google Translate—through which language translation and communication can be made easier. However, stereotypes, resistance to technological innovation, and a fear of the difficulty of learning to use and teach with new translation technology all stand in the way of Saudi Arabian educational institutions providing more appropriate resources for students to be able to address the gaps between their education and the needs of the industry (Omar et al., 2020, pp. 287-292). On the other hand, as argued by Sabtan (2021, p. 712), translation quality clearly requires greater accessibility of the translation technology that has been used in the translated website text and localization. A translation might carry negative connotations in a target population because of religious or cultural sensitivity. Thus, it is necessary to consider such issues beforehand. Other possible challenges revealed by this study included translation inconsistency, ambiguity in instructions, linguistic challenges, the diversity of Arabic dialects, and the absence of localization (Sabtan, 2021, p. 712). For example, having a public Arabic translation memory for the main linguistic challenges that translators typically face should help them overcome those challenges more consistently in the long run.

Achieving competence at translating is another vital but challenging component of ensuring higher-quality translation. Gopferich's translation competence model (Salamah, 2021) can help in understanding the factors needed for strengthening and refining a student's translation ability. This model involves the factors of psycho-motor competence, translation-routine activation-related competence, domain competence, communicative competence, and translation tool-oriented competence. It is extremely challenging for the professional translator to attain all of these competences. In this respect, the translator's professional training is of the utmost importance (Salamah, 2021, pp. 276-291).

In addition to flaws in pedagogy, Alshammari (2020, pp. 365-372) noted that a learner's personal lack of motivation, negative psychology, and difficulty with learning a language could likewise be impediments that are difficult to overcome. Continual effort and sufficient time are thus required for learners to mitigate such challenges.

2.10.6 Industry-Related Obstacles

Despite the importance of the Saudi Arabian economy in the Arab world and globally, that economy is largely derived from the huge size of the country's oil sector, and the Saudi Arabian translation industry is very small compared to other sectors of the economy (Al-Khatib, 2005, p. 28). The reality is that the Saudi Arabian oil sector

works largely in English and as a result does not make much use of Arabic/English translation (or translation between other language pairs). Based on the number of translated Arabic books (1,260 in 50 years), the overall activity of this industry could be considered relatively small.

The British Embassy in Riyadh (2017) recommended drawing up a list of private translation providers, but the Saudi Arabian translation market has struggled to find trustworthy translation companies and freelancers. The British Embassy document highlights the problem in identifying translation service providers in Saudi Arabia. Even when providers are registered under the Saudi Ministry of Commerce and Investment, there is often a lack of research to determine the past quality of their services.

An examination of the structure of the economy revealed that in Saudi Arabia, and the Arabic translation industry in general, being well-qualified due to education or experience does not determine whether someone finds work in the language services industry (Al-Khatib, 2005, p. 129). Instead, the most important determinant in Saudi Arabia, for example, is having a licence from the Saudi Ministry of Commerce. The Saudi Arabian government's recent policy to increase the number of native Saudi Arabian workers while reducing the number of foreign workers "has not achieved notable success in the translation industry" although capital flow is not a problem, and "Publishing firms do not generally complain of the scarcity of financing" (Al-Khatib, 2005, pp. 129-130).

Al-Khatib (2005, pp. 101-139) conducted an extensive study of the economic performance of the translation industry in Saudi Arabia, dividing translated texts into the following main areas:

> Social sciences – divided into the following sub-areas: sociology, economy, political sciences, law, public administration, military sciences, education and instructions, commerce, mores and traditions.
>
> Applied sciences – divided into the following sub-areas: medicine, engineering, agricultural, business administration and accounting.
>
> Pure sciences – divided into the following sub-areas: general pure sciences, mathematics, physics, chemistry, geology, zoology and botany.
>
> Literature – divided into the following sub-areas: letters and critical studies, novels, poems, children's stories, theatre and literary biographies.
>
> General knowledge – divided into the following sub-areas: (applied) scientific research, data analysis, computer sciences, bibliography, information and library sciences.

> Human sciences – divided into the following sub-areas: psychology, philosophy, morality, biography, religions, languages, arts, sports, archaeology, history and geography. (p. 9)

The Saudi Arabian translation market covers areas such as the oil industry, religious pilgrimages such as the Hajj, banking services, hospitals and healthcare, and legal translation. According to a Saudi Vision 2030 (2017) report, all of these sectors are aware of the need for Arabic-English translation on their websites.

2.10.7 Low Salaries and Wages

Salaries for translators remain low compared to other jobs in Saudi Arabia (Farhan, 2014), and freelance translators receive lower rates than other countries, such as the United States (Zaitoni, 2012). According to one study, in 2012 Saudi freelance translators received only $11-15 per 250-word page, whereas freelance translators in the United States were paid over $20 per page (Zaitoni, 2012). As a consequence, most students from Imam Muhammad Bin Saud University who earned a bachelor's degree in English Language and Literature did not enter the translation market (Alhamdi, 2012). Instead, many accepted jobs requiring proficiency in English for purposes unrelated to translation, as these positions offered higher salaries and more secure employment (Alhamdi, 2012). This disparity in pay and training has led to a situation in which unqualified people are often employed as translators. Thus, if Saudi Arabia is to become more competitive in the language services industry, it needs to start compensating translators and interpreters better for their work. Higher pay could promote the prestige of the profession, increase the number of Saudis entering the field, and encourage both higher output and higher quality.

2.10.8 Industry Standards

According to a study by Fatani (2009), the Saudi Arabian language services industry remains underdeveloped and does not promote technology as much as it should. In fact, an informal search I made of the job postings on multiple Saudi employment websites (e.g., the military knowledge company Vinnell Arabia, n.d.) revealed Fatani's analysis to be quite accurate. Most translation job postings required proficiency in English and Arabic only, with no apparent mention of translation skills being a requirement. This indicated that translation service providers and companies in general were looking for bilingual individuals rather than professional translators.

On the other hand, the Saudi Arabian translation industry needs the help of software programmes to make improvements to its professional standards. These software programmes involve the integration of CAT tools such as SDL Trados Studio and memoQ, which would be helpful in, for example, a legal translation course in the Saudi Arabian translation classroom (Gomaa et al., 2019, pp. 1-6).

Another consideration is regional cooperation. Saudi Arabian translation would benefit from the support of regional organizations, such as the Gulf Cooperation Council, and government universities across the Arab world. Strategic translation service provider activities in Saudi Arabia should be subject to systematic oversight, for example, by establishing a Gulf translation centre and an Arabic translation centre (Al-Khatib, 2005, p. 35). The weaknesses in Arabic translation activities could be seen as a pan-Arab problem, requiring professional regional standards, and service providers should not be allowed to enter into contracts with public or private institutions unless they adhere to those standards. The Saudi Ministry of Commerce and Investment could set criteria for those wishing to be classified as professional language service providers. Figure 2.1 suggests how professional translation standards could improve job recruitment in Saudi Arabia.

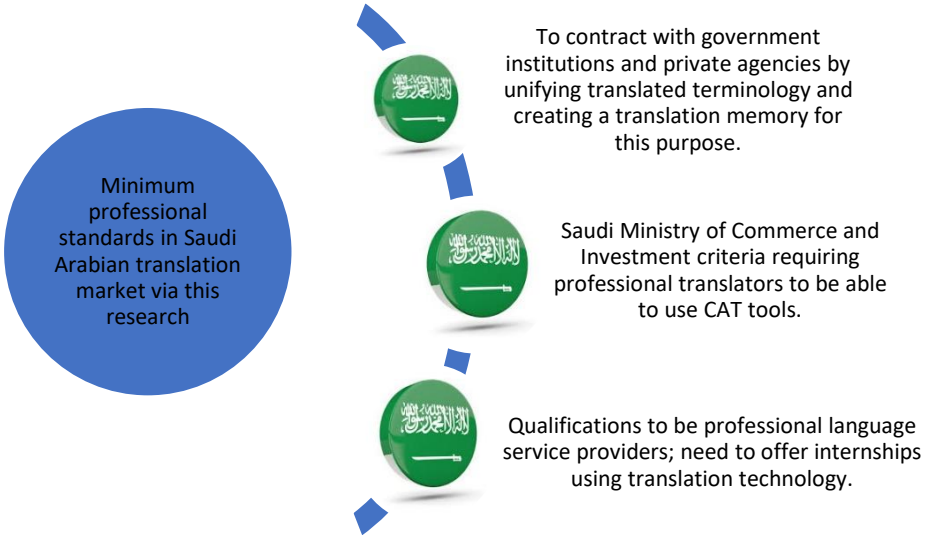


Figure 2.1 Effects of Professional Industry Standards on Translator Recruitment

Closer coordination between Saudi Arabian and Western translation institutions could likewise go a long way toward overcoming these problems. Such interaction would modernize the Saudi Arabian translation market and help it become a leader among Arabic-speaking countries. This could involve creating internships in the private sector for students and increase coordination between Saudi Arabian universities and professional translation providers.

2.11 Scope for Improvement in Current Translation Practices

2.11.1 Definition of Translation Practices

According to Schwartz et al.'s (2020, p. 8) explanation of the concept, the term "translation practices" refers to the systems of convergence in existing languages that focus on expansion and adaptation to changing environments in the context of extremely different cultures. Nowadays, translation technology aims to make translation practice a workplace of competition, as translators' technology skill is mandatory to engage effectively in competition.

2.11.2 The Effect of Recognizing Best Practices in Translation

Important fields of work typically offer awards and other forms of recognition to reward good practices and encourage improvement in the future. This is certainly the case in the language services industry. According to Grimshaw et al. (2012, p. 16), formal recognition of best practices has had a significant positive impact on the quality of translation work and education, facilitating the establishment of shared international standards, organizations, and communities, as well as better knowledge sharing and knowledge management around the world. Professional translators have increasingly received formal recognition for their work from international associations in the form of accreditation, prizes, awards, and scholarships. Similarly, according to a study by Auld and Morris (2019, pp. 677-698), language professionals involved have helped identify issues in relationships between international and multicultural institutions regarding politics, economics, and education. This is one area where private companies, organizations, and government agencies in Saudi Arabia could improve the local language services industry. Offering better compensation, formal recognition, and more social prestige could make translation and interpreting a more attractive profession, encouraging more Saudis to study translation and interpreting, enter the field, contribute to research, seek training, improve their abilities, and join professional organizations. Another benefit of this process of strengthening the recognition of translation as a field in Saudi Arabia would be to improve upon existing practices.

2.11.3 Evolution of Translation Practices through Non-Western Sources

Translation practices have changed over time, according to evolving theory, technology, and cultural perspectives. Culture is a particularly important factor to take into account in Saudi Arabia or any Arab context because of how translation practices have been largely shaped by Western cultures, languages, and technical developments. According to Chesterman (2014), a prominent school of thought in modern translation studies is that the profession is either too Anglocentric or too

Western, and it needs to broaden to include non-Western perspectives. This change could be accomplished through the swift emergence of new translation technology and non-professional or collective translation practices, such as crowd-sourcing and crowd translations. Following this train of thought, Chang (2015, p. 3) claimed that current Eurocentric perspectives do not fully account for some translation techniques in non-Western cultures. Saudi Arabian universities, for example, rely on Western translation studies and theory and try to convey Western translation technology training.

This viewpoint appears to be based on the premise that translation studies as a research subject is particularly affected by cultural relativism and has been controlled for a long time by European civilization. As such, for Saudi Arabia to become a leader in Arabic translation, it would not be sufficient to adopt current best practices in a Western context. Instead, it would also need to critically examine those practices, determine whether they are adequate for an Arabic context, and make any necessary adjustments.

Cohen and Cohen (2015, p. 157) viewed this issue in part as a by-product of the West's colonial supremacy and the supremacy of certain dominant Western languages, most prominently English. The situation survives in part due to the established and institutionalized structure of this supremacy, and it essentially covers ongoing cultural imperialism. According to this viewpoint, translation studies will advance by either overcoming its Western paradigm or by broadening it to include non-Western notions and theories. For example, to make translation more globally relevant, people in the West could learn more about Chinese or Indian philosophies; in this way, translation studies could strengthen its ethical status by incorporating non-Western principles. In support of this notion, Borrmann (2020, pp. 1-8) stated that this relativist viewpoint seeks universality but that universality is impossible to achieve with existing Western-centric ideas.

Berlin (2019, p. 2) argued that the relativists seem to be correct in pointing out that certain contemporary Western ideas in translation studies are dubious in light of the facts from translation methods that have not attracted considerable attention in either the West or elsewhere. Ideas originating in non-Western translation studies, on the other hand, should be tested in different cultures to see if they apply more broadly. One should be able to test translation assumptions or ideas anywhere if they are claimed to be globally valid for translation in any culture. In support of broadening the basis of translation theory and practice, Faik et al. (2020, pp. 1359-1390) claimed that current best practices could be strengthened through exposure to a more diverse array of ideas, perspectives, cultures, and communities. Thus, Saudi Arabian

translators, in reassessing their current practices, could contribute to global translation studies in addition to developing practices that better fit an Arabic context.

2.11.4 Translation Practices in Western Translation Studies

New and emerging digital technology has brought about immense changes in translation practices in relation to the diasporas of several countries in Saudi Arabia (Us Saqlain et al., 2020, pp. 275-299). The emergence of technical training in Saudi Arabia has been shown to be an effective tool for increasing translation productivity, which has been to the advantage of the Saudi Arabian translation market.

As Arabic is the national language of Saudi Arabia, it has become a tool to transfer knowledge to all domains that deal in foreign investment (Ben Salamh and Maalej, 2018, pp. 1-12). Furthermore, the human barrier to recognizing correct translation practice attitudes has been partially overcome by the use of more accurate translation technology. In addition, the growth of international translation practices has also influenced the strategic tourism events that are planned for partnership developmental goals.

2.12 Review of Translation Technology Training

The findings from the literature have shown that CAT tools are the main source of technological development within the translation industry in Saudi Arabia. The literature has also shown that it is increasingly important to use CAT tools within the Saudi Arabian translation sector to enable the translation of texts into multiple languages. For this reason, there is a need to raise awareness about terminology databanks among translators in Saudi Arabia (Al-Jarf, 2017, pp. 1-7). A primary means of increasing awareness in this regard is education and training. Translation training has grown in relevance alongside theory. In Saudi Arabia, however, research on translation training and descriptive analysis of the language services industry has been extremely limited. This section discusses the link between theory and practice, translation training in general, and scholarly work in the field.

Baker (2011) claimed that modern linguistic theory can provide guidelines for translator training. Pym (2009) argued for the necessity of training to meet translation market needs, stating that “We train people not just to translate, which they can already do, but to translate well, perhaps for a specific purpose, market or technological environment” (p. 1). He explained that translator training can take many forms:

> A great deal is learnt on the job, from superiors, colleagues, reviewers and clients, or otherwise through trial and error. The vast majority of professional translators

> in the world have probably had no training in translation beyond such experience, and the value of experience is thus not to be underestimated. (Pym, 2009, p. 1)

Malmkjær (2005) stressed the link between theory, learners, and practice, stating that "the position of translation programmes in universities implies a strong emphasis on education as well as on training and on research application as well as professional practice" (p. 2). Mayoral Asensio (2007) stated that translation theory cannot cover all aspects of the translation process and by extension professional practice:

> The development of translation theory is only incipient, and depends to a great extent on information drawn from professional practice. Translator training cannot therefore be mortgaged by a dependence on existing theoretical models. Translation theory does not cover all aspects of translation process, all its problems or all its resources, and when it does cover an aspect, it does not do so in a reliable fashion. (p. 88)

Gabr (2014, p. 77) claimed that there was an urgent need for translation quality management, which he defined as "a philosophy about management concepts and practices that has developed in the business world from Dr. W. Edwards Deming's ideas about how to make organisations more productive and high-quality" (p. 67). Gabr made training programmes based on three things: "the needs of the market, the needs of translation departments, and [...] the needs of the students" (p. 67). I discuss each of these below.

Regarding the market, according to Gabr (2014), some translation service providers may not be up to date with training needs: "the training provider adopts an introspective process based on the analysis of their own strengths, ignoring the actual requirements of the outside world" (p. 68). In translation quality management, on the other hand, quality is customer-driven; that is, the training provider should explore customer needs and seek to meet them cost-effectively.

Translation departments are one of the most crucial elements in any translation training programme. Gabr (2014) stated that they are needed "to design and implement vocational programmes that can help students acquire language-technology skills" while operating "within severe budgetary constraints" and investing heavily "in equipment and software" (p. 66). Translation departments cannot ignore what the market requires and expect strong results (Gabr, 2014, pp. 65-77; Pym, 2002). This supports the previous recommendations for Saudi Arabian translation programmes to increase their emphasis on CAT tools and other helpful digital technology.

Translation departments should be required to offer basic training for teachers (Gabr, 2014, pp. 65-77). Teachers also need current experience in the field to keep abreast of

rapid advances in technology. All too frequently, however, “the training programme is conceptualized within the limits of resources and expertise available in the department” (p. 68). Thus, translation departments can be viewed as product/service suppliers and employers as customers (p. 69). Gabr (2014) concluded that “To create programmes that are of value to the field, translation departments” need to be given “accurate information on the precise nature of the translation market” (p. 69). This again highlights the problem discussed before about hiring language teachers instead of translation experts to teach courses in Saudi Arabian translation programmes.

In addition to market needs, “translation departments are required to provide training that adequately satisfies the collective and individual needs of students” (Gabr, 2014, p. 69). Translation departments, as suppliers, should provide students with informal programme leadership roles to help them become more skilled and self-confident leaders. Furthermore, students should receive individualized guidance from faculty members in order for them to become aware of their strengths and weaknesses, thereby increasing their competence and confidence. In this way, the exchange of information through disciplined and mutually enriching dialogue between faculty members and students improves interpersonal and teamwork skills and enhances students’ personal, intellectual, and professional development. Malmkjær (2005) made similar claims about the value of mentorship:

> Translation studies, in this century, is a buoyant field where theorists and practitioners frequently come together (often in one person), where the mutual dependencies between research and practice are well understood, and where few doubt the need to work together to improve research, teaching and practice across the board. (p. 1)

An important role of translation programmes is to help novice translators understand the market, but students often lack this understanding. A potential solution is to include training courses in translation programmes and engage the private sector to cooperate in training novice translators while they are still studying at a university. Chesterman (2005) argued that “Translation students usually take a course, or several, in translation theory, alongside their practical training” (p. 228). However, as noted previously, practical training has not been given sufficient attention in most Saudi Arabian universities. Without strong translation studies programmes, this problem may be particularly acute and cannot be fully resolved by better on-the-job training.

In the current market, novice translators need experience with CAT tools and translation processes used in the industry as well as project management skills. In addition, Malmkjær (2005) asserted that “Students need to feel reasonably confident that the programmes will equip them for a career either in the translation industry

itself or in related fields involving cross cultural communication and text editing" (p. 2). Mackenzie described "the need for programme designers to understand the world of professional translation since a number of translator competencies arise directly from the roles involved in the production of high-quality translations" (cited in Malmkjær, 2005, p. 2).

In Saudi Arabia, translation courses could be used to promote a greater awareness among translators of the unique responsibility of their role. As Bartrina (2005) argued, "A course on Translation Theory might also wish to emphasise the professional role of the translator, his/her responsibility, and the ethics of translation practice" (p. 182).

A related problem to training translation students is training tutors. According to Nord (2005), "there is no institutional training for translator trainers" in the Arab world (p. 236). She went on to explain why this is deeply problematic:

> This does not mean that they are all bad translator trainers, but maybe life would be a little easier for them (and for their students?) if they had had some kind of special instruction and were not forced to re-invent the wheel of translation pedagogy repeatedly. (p. 236)

Nord (2005) also stated that the majority of new training translators continue to work like this and "after years of practice, all their (positive or negative) experience and insights, their findings, their good ideas and original methods are often lost instead of being passed on to the next generation" (p. 236). Thus, Saudi Arabian universities could create permanent resources for translation tutors that facilitate passing knowledge from one generation of tutors to the next so that more effort can be spent on improving current practice rather than trying to figure out the basics over and over.

2.13 Translator Training to Meet Industry Needs

According to Tait and Williamson (2019, pp. 1-14), translation training is designed to improve a translator's skills, competencies, and knowledge of how to employ different tools and techniques that are vital in the process of translating a text not only between specific languages but between specific cultures as well. Different types of training are associated with the types of knowledge being transferred, as collaboration and teamwork, sharing knowledge, and knowledge brokering are associated with personal interests that should be refined in order to get proper results. This kind of training can make learners of translation technology aware of the potential limits to their contribution as translators. Ali (2013) suggested that the process of assessing the skills and competencies of a person who is going to use translation training services is a huge challenge to those tasked with reviewing the training process. The main

question here is the reliability of the translation training and the quality of translation that is performed with the help of specific tools.

For the reasons outlined above, the study by Mishra et al. (2011, pp. 424-426) noted the need for a multidisciplinary perspective on, and approach to, translation. As students at university are required to gain knowledge in different fields, translation services and tools should be programmed in such a way that students are able to translate the things related to different subjects smoothly and work without issues in different contexts. The review of the translations produced is also vital in order to prevent students from gaining improper knowledge of the context and to improve the effectiveness of their work. Similarly, Li (2018) stated that translation teaching requires paying special attention to the field of knowledge and the personal inferences of the translator that may provide inaccurate knowledge to the students. The translator should seek to avoid imposing their personal biases on the text that they are translating, and for this reason, the process of translation and translator training should be reviewed thoroughly, especially when it is performed for students in order to prevent incorrect knowledge being transferred.

Based on the above discussion, it can be inferred that the process of translation requires that enormous attention be given to the text being translated, especially if it is translated for students. Translation tools can help in this regard by extracting keywords and matching them in different languages. The lack of context and the inability of such a system to detect the appropriate terms, however, can lead to problems. In order to overcome these issues, the text should first be reviewed to gain a fuller understanding of it. Moreover, the personal inferences of the person who is translating the text may cause issues with the translation and provide students with misleading information. For this reason, the strategies for training translators to improve their skills and personal competencies should be developed to gain positive results from the most appropriate translation tools and techniques.

According to a study by Westfall et al. (2016, pp. 613-618), specialized information that is published in one language can be difficult to interpret for people who are not specialists in that field. For this reason, the review of translator services is vital as it improves the overall performance of a system. Translation tools, however, are only beneficial for students at university if they are able to use those tools properly. A situation in which the students are unable to use the system properly and gain knowledge from it leads them to a point where they are not able to implement the knowledge gained in actual practice, and due to this, training in translation technology is necessary for both students and educators. Liu et al. (2019, pp. 72-86) stated that the translation of a text into different languages with the help of tools also requires the attention of human beings and needs to undergo a rigorous review process in order

to prevent issues from appearing at later stages. For example, every community has certain images and symbols that are prohibited or taboo, while in the context of another society, such elements may be acceptable to use. For this reason, translation tools need to be reviewed in order to eliminate or clarify content that could be seen as inappropriate for a particular community.

According to Biel (2011, pp. 61-76), translation programmes or software usually adhere to standards that are maintained by tools that are programmed to provide a high level of performance. The performance of translation tools does not require review as the person coding the programme takes care of the standard procedure and the protocols that should be followed in general practice. In an actual work scenario, the performance of translation services requires separate training and test protocols in order for it to perform well. The development of training can help the system to work in a better manner by reviewing work and eliminating issues from the system. Li (2018) stated that the ability to translate is the focal point for translation services, and due to this, human beings require strategies to maintain the quality and standards provided by translation services. From a linguistic point of view, the abilities required of a translator include social abilities, cross-cultural abilities, language abilities, and pragmatic abilities. These help the student with understanding the context of the text that is being translated.

According to Flanagan and Heine (2015, p. 148), translation technology training should incorporate search engine optimization (SEO), thereby including various elements such as cultural, linguistic, and specific local requirements of the population for which the text is being translated. A translation commentary is often used as an assessment method in translation degrees. A translation commentary and a descriptive commentary provide some context for a text, help the reader better understand the project, and decrease the possibility of confusion. The statements made by a translator are evaluated in the context of the text that is being translated in order to evaluate the quality of the translation. Holmes et al. (2014, pp. 1-10) stated that translation services require specific skills and competencies in order to translate a text properly without changing the context of the source text. In this respect, translation training should help develop the necessary context-related skills that are required for a translator. These skills include understanding the local cultural context and elements that are included in the process of training a system in order to translate the text without major issues. In addition to matching the text to the local context, maintaining the intended meaning or essence of the text is also needed.

According to Gallego-Hernández (2015, p. 375), a parallel text can play a major role in the process of determining the essence of the source text. A parallel text is a text that is similar to or associated with the source text and gives information regarding

the collocations, terms, and particularities of the source text. For this reason, it is important to learn how to review and assess the merits of a parallel text before using it for a translation (or for translator training). Training to perform this type of review process is vital for students to learn how to produce a higher-quality translation. Mallidou et al. (2018, pp. 1-15) further supported the need for educators and trainers to implement a review process with students' translation products and processes.

According to Li (2018, p. 5), proper use of translation tools and procedures is vital in order to translate information properly, and as a result, the efficacy of the process depends heavily on the user of those tools and procedures. Al-Seghayer (2015, p. 89) stated that teachers play the main role in the teaching process, describing them as the "frontline warriors" in the field of education. Despite this important role, translation instructors in Saudi Arabia do not get proper documentation regarding the correct use of translation tools in classroom settings. These teachers' frequent lack of specialized training is also a prominent problem that contributes to reducing the effectiveness of teaching practices in Saudi Arabia. Alshammari et al. (2019, pp. 1-10) argued that the implementation of the translation intervention by using CAT tools is a good step for universities and hospitals in Saudi Arabia that should be taken on a mass scale in order to eliminate difficulties people have with translation technology. Training students to use and review translation tools will also help translation teachers in Saudi Arabia communicate key skills to their students more effectively.

According to Li (2018, p. 12), translator training should bridge the gap between practical translation and traditional translation techniques. An increase in the range of training could help improve work patterns and enhance performance in a given translation scenario. Training helps teachers to use translation technology more effectively and implement specialized knowledge in a given field. However, as Alkhalifah and Aldhalaan (2018) noted, the translator is not always an expert in the field, and for this reason, reliance on translation tools is not always appropriate for getting better results. The strategy of conducting reviews and providing training helps improve the efficiency of the system and enables individuals to use the system with fewer problems.

On the basis of the above discussion, a translation system should be evaluated before, during, and after implementation to find and correct any issues with how the system is used and how it functions. Unfortunately, a large number of translation teachers and students in Saudi Arabia are unable to use translation tools and techniques effectively. Moreover, the lack of proper translator skills and competencies and the shortcomings of current translation tools can also cause problems. In order to eliminate these issues, teachers need more training on how to use translation tools and training on how to teach students how to them.

2.14 Causality in Translator Questions to Use Translation Technology

This section describes where translation training and theory are currently situated in the broader context of translation studies, particularly with regard to issues of causality. Chesterman (2005) argued for using a causal model in translation studies. According to Chesterman, a causal model in translation incorporates what he referred to as static and dynamic models, suggesting that "a causal model of translation also has obvious applications in translator training" (p. 191). Furthermore, "Several approaches in Translation Studies are more or less implicitly causal: skopos theory, relevance theory, polysystem theory, critical culture studies, think-aloud protocol studies, and the whole of the prescriptive tradition" (p. 191).

Chesterman (2005) distinguished between four different types of hypotheses: interpretive hypotheses, descriptive hypotheses, explanatory hypotheses, and predictive hypotheses (p. 225). Interpretive hypotheses are "hypotheses according to which a particular concept (such as translation or equivalence or norm) can be defined or interpreted as such-and-such. Interpretive hypotheses are building blocks for all research, whether conceptual or empirical" (p. 198). Descriptive hypotheses are those "concerning the generality of a particular descriptive feature" and which normally assume the following "form: all translations (or all translations of a given type or all translators) are characterised by such-and-such a feature" (p. 198). Explanatory hypotheses seek to explain why translations are as they are. They "are simply hypotheses that X is caused by Y" with "caused by" in this context only meaning "influenced by" and they "either start from linguistic features of the translation profile or from given effects" (p. 198). Predictive hypotheses provide methods "of testing explanatory hypotheses" (p. 199). They "start from causal conditions […] and predict profile features. Or they start with profile features and predict effects" (p. 199). Causal conditions may include "socio-cultural norms, a particular skopos, ideological/ethical factors, [and] translator-specific factors such as beliefs" (p. 199).

As causal models, predictive hypotheses are more extensive than other types of hypotheses and so might be more beneficial when describing translation practice. In this regard, Chesterman (2005) described the causal model as broader than the static or dynamic model. As a result, it "offers the best way of relating different aspects of the theory to each other and to practice. It shows how the different schools and approaches focus on different sections of the causal chain" (p. 201). This model demonstrates "that translations do indeed have consequences, [and] it is a natural step then to check what these consequences actually are or to imagine what they might be" (p. 202).

According to Chesterman (2005), the causal model is suitable not only for theory but also practical outcomes related to translator training. The causal model promotes a sense of the translator's responsibility, such as in the case of emancipatory translation, meaning that "trainees are of course taught translation norms, but they themselves are responsible for deciding how they will react to these norms" (p. 202). Chesterman argued that translation pedagogy using emancipatory translation is based "on an understanding of the causes and effects of the translator's decisions, and thus depends on a causal model" (p. 202).

The theoretical models described by Chesterman (2005) are all important tools for research in translation studies. However, he pointed out that translation practice is not just concerned with how to translate texts. According to House (2015, p. 23), the function of language plays an important role in choosing a suitable pragmatic or practical function when translating. Language functions have been related to textual functions in the translation literature. Researchers such as Reiss and Vermeer, according to House (2015), took "Bühler's three language functions as determining three different textual types: the referential, the emotive-expressive and the conative-persuasive" (p. 23). However, House believed that "This simplistic probabilistic text typology based on a predominant language function exhibited in the text is of no use for determining an individual text's function, let alone for establishing functional equivalence" (p. 23). This statement could be interpreted as meaning that the functions of a language are not the same as the functions of a text.

2.15 Translation Quality Assessment and Quality Assurance

Translation quality assessment is one of the most important areas where university programmes could benefit the Saudi Arabian translation market. According to Lauscher (2000, p. 162), translation quality assessment occurs when "An evaluating person compares an actual target text to a more or less explicit 'ideal' version of the target text in terms of which the actual target text is related and judged" (p. 162). Nevertheless, "it seems unlikely that translation quality assessment can ever be objectified in the manner of natural science" (House, 1981, p. 64).

According to Al-Qinai (2000, pp. 497-519), readers tend to perceive the target text or the end-product of a translation as the primary source for scrutiny. This tendency to ignore pre-translation decision-making is grounded in a lack of objectivity and rationale for translation assessment or evaluation. Similarly, any attempts at examining translations through comparative analysis of target and source text divert from accuracy without considering the process followed by the translator for resolving problems. Moreover, the source text writer chooses syntactic arrangement and lexical

items according to their communicative objectives, while the translator directs their efforts to recovering those original communicative aims and reproducing them in the target text. However, this procedure involves a subjective interpretation of the text because every reading linked to each text is distinct and leads to varied responses. In the last few decades, language and translation-related studies have focused on encouraging more objectivity and reducing subjective impressionism, which is often used for analysing translation quality. Thus, attempts have been made to develop a complete set of processes, protocols, parameters, and metalanguage for further constructing a pseudo-framework for translation assessment. However, Thelen (2008, pp. 411-424) argued that this approach has its limitations, asserting that it is difficult to make the process of translation quality assessment more objective in the same way as a natural science. Furthermore, Thelen stated that there cannot be a definitive reading or a perfect rendering of the source text.

According to Sharkas (2009, p. 42), translation is a complicated hermeneutic procedure in which intuition has a pivotal role in reading, judging, or interpreting the intentions of the source text communicators. Furthermore, languages vary in terms of sentence structure, lexical connotations, and rhetorical tactics, the only tangible features for assessment. Quality is relative to absolutes of accuracy where clients or end-users impose their subjective preferences on the target text. Overall, quality standardization in translation is a fuzzy, dynamic, and unclear area. Various questions arise in this regard about the translator's role and the production of a straight translation instead of a sanitized version of the translation. Contrasting views are found in the literature in relation to standardizing translation quality assessment, as translation quality could be measured, for example, through the degree of intelligibility. However, concerns arise particularly in the case of scientific texts where figures of speech and writing style do not play a substantial role in the purpose of the source text (Al-Qinai, 2000, pp. 497-519).

Translation scholars sometimes approach the issue of quality in translation by examining unfinished translations centred on various linguistic areas. Academic frameworks for translation quality are commonly text-based and mainly focus on linguistic, normative, and functional equivalence, their application relying on complex procedures. For example, House (1997) proposed a text-based framework that compares target text and source text based on numerous categories for assessing the quality of a given translation (cited in Foedisch, 2018). In translator training, the same processes are known as translation quality assessment, which is extensively used for analysing and evaluating students' performance in their translation assignments (Foedisch, 2018). Foedisch (2018) acknowledged that a subjective dimension has always existed in translation quality assessment and that using vague categories such

as minor and major errors does not provide consensus on notions of quality. On the other hand, text-based approaches have been criticized for relying too heavily on time-consuming assessment procedures that are not feasible or practical in the translation industry. This also affects quality because contextual information is ignored, such as the production circumstances of a translation (Sharkas, 2009, p. 45).

Abdallah (2012) explained that translation quality can be linked to objective dimensions but is also closely associated with emotional and information factors. He argued that the translator's agency should be strengthened, and translators must be provided with the opportunity to play the role of agents in order to improve translation quality. Translation production social networks present themselves as having low social capital and involving economic configurations. Moreover, the basic translation technology principle encompasses several sub-principles with differing preferences in a real-life context. The current problematic state of affairs is planned. Not all complicated systems and production in social networks display complex emergent behaviour in the case of a lack of use knowledge. Overall, complexities within the production network have a negative impact on the translator's role, agency, and socio-economic situation.

Poor quality production can have a negative effect on a translation's quality and translators' sustainability. The issue of poor translation quality resulting from a poor work environment contradicts the claim that outsourcing and tough competition foster economic efficacy. Additionally, assessment of quality, ethical guidelines, and the responsibilities of actors have become more complicated, and differing quality criteria have a significant impact on the concept and interpretation of translation quality (Doherty, 2017, p. 150). Different quality criteria also result in conflicts between actors (e.g., translators, project managers, clients), a point of considerable struggle among translators in Saudi Arabia. Overall, a prominent issue within translation production networks is the lack of clarity in defining translation quality. Currently, the basic criteria governing quality are not explained to the actors involved across different levels within the network, and further new challenges are linked to information flow (Doherty, 2017, p. 15; Moorkens et al., 2018, p. 299). For example, the results of the present study showed that novice translators were less aware than more experienced ones about the possibilities of using translation technology in the Saudi Arabian language industry. Sometimes, translators may consider such technology to be something that requires expert instructors and practice and is not practical through self-learning.

Professionals in an industry perceive and approach quality from a different point of view, as they seek to contribute to quality. Quality enhancement is assessed across the entire translation process instead of merely considering finished translation products

according to budget and time constraints. In the language services industry, translation products are primarily examined for quality control to reassure clients that those products comply with defined standards for cost and quality (Abdallah, 2012). However, no attention is given to measuring how close a target text is to a source text. In this regard, translation technology in Saudi Arabian universities gives quality control a vital role to play. This is because errors in a translation can negatively affect reputation and revenue, thereby degrading the quality of the production network and uncovering gaps in translation quality assessment and management. Quality assurance involves all dimensions of measuring and attaining quality, such as planning, control, and translation quality assessment. It seeks to ensure that proper processes are in place in the translation procedure that contribute to higher-quality products (Foedisch, 2018).

The translation industry deploys top-down and bottom-up approaches (Lommel, 2018). Top-down approaches are centred on the efficient use of resources, i.e., the interplay of a selection of correct tools and translators, workflow adaptation and structures, and procedures for optimal output. Bottom-up approaches, by contrast, are developed by individuals participating in translation. They involve resource sharing and clear feedback elements. These two different approaches vary in terms of adequate attention, the presence of trust between participants, and sufficient scope and flexibility for admitting errors or weaknesses. According to a study by Hu (2018), the nature of quality assurance and its scope for individual translation projects differ to a significant degree from one project or company to another because its framework takes into account all phases of the translation procedure. Translators are selected carefully, and a so-called maximalist model of translation quality assurance is adopted, which prioritizes humans over automated procedures and compares target texts with source texts. The maximalist model of quality assurance comprises a positive feedback component, but its application remains limited to more sensitive and high-risk contexts.

The translation industry employs a practical and flexible approach to ensure and assess translation quality (Hu, 2018; Lommel, 2018). Quality is not considered an end goal in and of itself; instead, it is more constructively deemed an ongoing process of improvement and refinement. The practicality of theoretical models and frameworks for translation remains a debated issue in the professional domain. It is essential to consider areas related to translation project management and contextual factors in the form of client requirements, budget, and timeline. Professional models are developed based on the fundamental criticism that academic and theoretical models have an overly subjective focus and vague intent. Overall, professional models adopt a more comprehensive perspective on translation quality by offering flexible and practical

solutions to translation quality issues, which facilitates better quality assurance and quality assessment of translation products and services.

Normally, an examination of a translated text aims to measure how effectively the translation reflects the semantic, syntactic, and pragmatic functions of the source text in relation to the expressive potential and cultural frame of the target language and source language (Al-Qinai, 2000). House's (2014) pragmatic-textual approach indicates that translation functions not merely with sentences (as abstractions) but also with utterances and even whole texts (as real deployments of the abstract elements of language). Thus, equivalence is given priority to the pragmatic level over semantic meaning in this framework. Furthermore, use-value within communicative contexts is the core interest of translation in this model. With these criteria in mind, Al-Qinai (2000) developed an eclectic practical framework to assess text quality in post-translational and pre-translational phases (pp. 497-519). Critical parameters for quality assessment are highlighted in this framework, such as text typology, formal correspondence, tenor, coherency in thematic structure, cohesion, text-pragmatic equivalence, grammatical equivalence, and lexical properties. In addition, grammatical equivalence is also an important parameter. However, strict compliance to the parameters mentioned above remains illusory when subjective discourses are involved and culture-bound idioms are present (House, 2014).

This framework highlights the importance of translation competence. According to Schäffner (2000), competence in general is "often linked to other concepts and qualities seen to be requisite for the task of translation, most prominently to the following: knowledge, skills, awareness, expertise" (p. 48). However, digital technology is often overlooked when assessing translation competence because the majority of attention is typically paid to the quality of the translation process in production networks (i.e., the system of relationships that ensure a text is translated). Production networks in this context are composed of every stakeholder involved in a given translation project (Abdallah, 2012, p. 2).

One of the major goals for translation is to achieve social competence during the translation process (Fraser, 2000), a concept that has significant implications for the quality of the translation product. The central idea of the social competence of the translator is to stress the significance of multiple actors who are part of production networks and work together to ensure a text is successfully translated (Williams, 2001). In this context, quality benchmarks and desired level of quality need to be decided and agreed upon by all actors working together in a production network so that collective quality standards can be defined and attained. Thelen (2008, pp. 411-424) stated that this model was developed to make actors aware of the multidimensional nature of quality in translation, which extends to ethical concerns

between actors in the production network. It underlines the point that quality is not merely a product's characteristics in a production network but is also related to decision-making, marketing, production, customer relations, and stakeholder relations in the translation industry.

The translation teacher can use a framework for meeting a radical education agenda and empowering students as this framework is linked to the roots of social phenomena (Al-Ahdal et al., 2017, p. 45). The translation teacher can create a form linked to the roots of social phenomena to help students be aware of the outcome of the target translation. The pedagogical process can be made more transformative and political by determining the link between social and learning transformation, which in turn increases the critical capacities of students. This model stresses strengthening students' agency, empowering them by creating an environment of hope in translation classrooms.

Bahameed (2019, pp. 22-31) argued that a holistic approach to assessment is more objective, reliable, and accurate than a subjective or an entirely objective assessment approach to evaluate translation quality. The main feature of the holistic method is its focus on considering a project in its entirety over separate or individual parts. In this approach, a limited degree of subjectivity and flexibility relying on the assessment of correctors and candidates' translation errors make it completely distinct from the error analysis correction mechanism relating to quality assessment. Professional translators and their requirements are considered with respect to this model, where issues are described and perceived differently by educators. However, this approach is not applicable or useful for examining the quality of translations made by beginners and identifying loopholes in the system. Moreover, the outcomes generated in this Saudi-based study signify that the holistic evaluation approach is too lenient and performs poorly on quality parameters because it allows top-level students to assess their own abilities and gives equal consideration to all learners. In contrast, by adopting the error analysis correction approach, the failure rate would exceed a reasonable level (Abu-ghararah, 2015, pp. 1-10).

Translation quality assessment in Saudi Arabia is affected negatively by the subjective intuitions of evaluators (Al-Ahdal et al., 2017, pp. 45-53). This can result in lowering the accuracy and efficacy of an assessment, reducing the assessment's objectivity and reliable output. There is a need for proficient translation scholars to implement effective translation quality assessment because the level of flexibility and autonomy given to instructors in measuring the quality of translations is currently too high. In addition, Al-Ahdal et al. (2017) argued that minor grammatical, lexical, and spelling errors are often overlooked in translation when a holistic translation quality assessment method is used. These errors should not be ignored. Extreme flexibility

and leniency are therefore major drawbacks to the holistic assessment method that need to be taken into account before a translation programme decides to implement it.

Leading indicators of translation quality in Arab nations, particularly Saudi Arabia, include labour, capital, performance, and demand stimulation (Alotaibi, 2020, p. 13). Alotaibi's (2020) review of the literature and current practices adopted in the Arab world showed that training programmes have been organized to enable students to meet market demands. However, translation quality assessment and quality assurance services have proven ineffective in Saudi Arabia, despite more than a hundred students graduating with a translation degree every year. As a result, the country cannot produce qualified and competent professionals who are ready to enter the translation sector. One reason for this problem is that translation instructors tend to rely on passive learning and use curricula and methods that are outdated and theoretical, thereby ignoring the practical aspects of translation work.

In addition to the issue of teaching approach outlined by Alotaibi (2020), in an earlier study, Abu-ghararah (2015, pp. 1-10), found that limited use of advanced translation software, lack of resources, and inadequate digital technologies were likewise to blame for stunting the translation sector's potential and serving as obstacles to student learning. In addition, universities tend to accept students with low language proficiency and translation capabilities, creating more work for instructors to try to bring students up to par with course requirements. At a deeper level, universities do not cooperate with training institutions or translation agencies when deciding who to appoint to teaching positions, with those jobs often going to people who are not qualified professional translators. Overall, translator-training programmes have been shown to be of an overall low quality, failing to adopt wide-ranging techniques to equip trainees with necessary skills or assist professional translators by providing support in building practical skills covering socio-cultural and linguistic aspects of translation work.

The literature has shown that unqualified professors, lack of training, non-use of translation management software, and the low academic proficiency of students all lead to worse quality assessment and quality assurance in Saudi Arabia's translation sector (Abdallah, 2012; Bahameed, 2019, p. 29). These issues call for a serious restructuring of translation education, training, and regulation.

In Saudi Arabia, the translator's performance should meet the normal standards and practices of the language services industry. It would help to assess the current Saudi Arabian translation market, for example, to determine whether it favours equivalence of pragmatic meaning at the expense of semantic meaning, as well as to facilitate

professional communication between novice translators and translation service providers. This might be accomplished by comparing Western translation markets with the local and regional markets. Quality assurance should be implemented based on established criteria, which could improve "University programmes such as vocational and technical education" (Gabr, 2014, p. 67).

Saudi Arabian authorities and organizations should require proper certification to work in the country's language services industry in order to place a higher priority on output quality. Translation is not merely a relationship between two texts, as cultural competence is required to achieve clear communication. At the same time, translators should not be the only ones involved in the translation of a text. One of my personal observations of the Saudi Arabian market has been that translators are often solely responsible for quality assurance and often fail to take into account the target market, audience, or purpose of the translation. Therefore, there is a need for more editors and proofreaders in the industry as well. Another core concern would be to improve project management, as detailed below.

2.16 Potential Improvements to Translation Project Management

2.16.1 Introduction

This section provides an overview of the concept of translation project management systems (see Section 2.15.2) and recent trends in the use of such systems in the language services industry (see Section 2.15.3), including interface (see Section 2.15.3.1), functions that facilitate better collaboration (see Section 2.15.3.2), and functions that allow translators to work directly on website content (see Section 2.15.3.3). This is followed by an overview of the key applications of translation management systems (see Section 2.15.4) in theoretical terms (see Section 2.15.4.1) and practical terms (see Section 2.15.4.2) and as an extension of the human project manager (see Section 2.15.4.3). Several more key components of translation management systems are discussed, including translation memory (see Section 2.15.5), search functions (see Section 2.15.6), and the ability to interact with third parties as well as internal communication (see Section 2.15.7).

2.16.2 Overview of Translation Management Systems

One area where Saudi Arabian universities could improve is in preparing students for the workflow of project managers. This entails familiarity with translation management systems. Workflows are a critical element of the translation process as they provide structure for a project. In order to ensure the success of a translation management system, a steady workflow is necessary for each project. Moreover, an efficient translation management workflow ensures that all stakeholders are aware of

the state of a project from one stage to the next in the translation process. Translation workflows are customizable, and there are certain types of workflows that are used in businesses for translation management. Green et al. (2014, pp. 1225-1236) noted that a basic translation management workflow involves human effort for translation, editing, and publishing. Since the personnel involved in translation management are locals and native speakers of the target language, more accurate translation is more likely to be obtained. By contrast, Tongpoon-Patanasorn (2020, pp. 134-163) described the implementation of a machine translation workflow for translating Thai academic abstracts into English using Google Translate. In such a workflow, the application of Google Translate guided the translation of the given content, after which editing was done if required before the final product was ready for use.

Translation management software is designed for automating as much as possible in project management and translating a given text (Christensen and Schjoldager, 2016, pp. 89-105). It is a project management application that helps with translating complex projects and removes repetitive manual activities in the translation process. Alkan (2016, pp. 43-47) defined it as a globalized management system that allows for managing the content of a project with the help of a localization process, which in turn includes various kinds of linguistic data sharing, the translation process, and the implementation of reusable content. To ensure high-quality work in the system, translation management is carried out according to the project information and procedures mentioned in the system's knowledge base. Vela-Valido (2021, pp. 94-111) regarded this as an effective system that facilitates the entire process of translation through efficient memory management, a smoother workflow, and terminology that is lucid across all documents and platforms. In the case of translating a larger amount of content, the management of different dialects and languages becomes more difficult; for such a scenario, a translation management system allows a business to organize its assets more effectively and guide the associated parties with a project to work together (Shlesinger et al., 2007). Yang and Wang (2019, p. 116) further noted that a translation management system offers more functions than just translating content in terms of maintaining the identity and vision of a project and ensuring that the content is contextualized.

Several translation management systems have been developed for translating content from one language into another with high quality and efficiency. These include CAT tools (e.g., memoQ and SDL Trados Studio), localization platforms (e.g., Transifex and Smartling), and content editing tools (e.g., Microsoft Language Portal and Linguee).

An efficient translation management system guides a team to work together with all localization stakeholders on a single platform, offering support for several

programming formats and languages and enabling collaboration with others via a single-click approach, which means using translation technology features. The aim of using a translation management system in a project is to automate all of the localization tasks involved in it, target a global audience, achieve a simple mode of communication, and track the translator's progress (Wang, 2014, p. 3). The role of these systems has grown in recent years due to rapid globalization. According to a report from Statista (2022), the market value for global machine translation in 2024 is expected to reach USD 1,500 billion due to the increasing demands for content localization, as shown in Figure 2.2. This further implies a higher need for translation management systems in different business sectors in the near future.

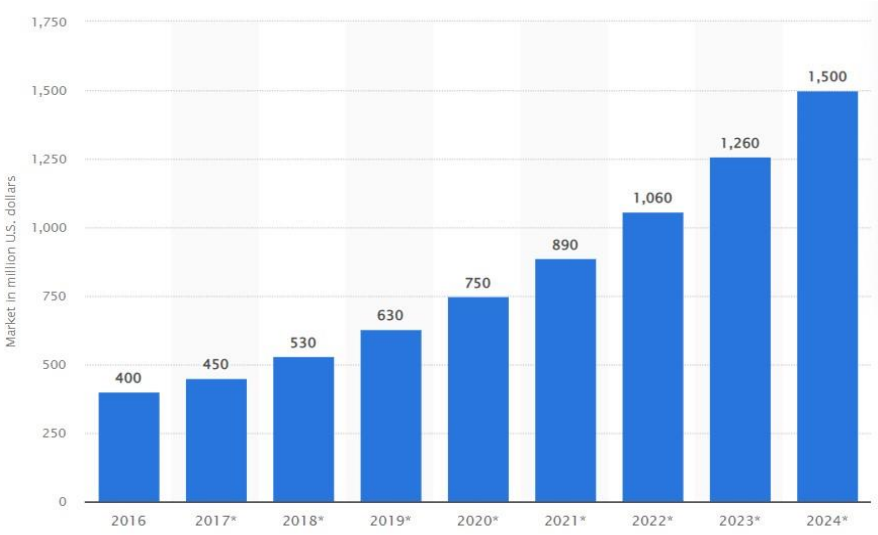


Figure 2.2 Expected Machine Translation 2016-2024 (Statista, 2022)

2.16.3 Recent Trends in Translation Management Systems

2.16.3.1 An API for Automation

An effective translation management system offers the benefits of minimizing human error in the translation process and reducing manual repetitive tasks with the help of an application programming interface (API) for automating the system. In this regard, in a translation management system workflow, the integration of an API allows for the stable functioning of the whole process from importing and exporting of data or files to updating and tagging them (Aiken and Ghosh, 2009, pp. 916-926). Aiken and Ghosh (2009) noted that a key feature of translation technology was its ability to pick up human errors automatically. This feature was found to be available in a translation management system for 32 languages with an accuracy of 86%, demonstrating the clear benefits of automation through an API.

Johnson (2013, pp. 91-100) defined an API as a service interface that makes it possible to carry out any machine translation process. The author proposed an open API for a

translation management system, called an open machine translation core (OMTC), which can be used for standardizing the different aspects of machine translation such as authorization, resources, session negotiation, sessions, translators, and machine translation engines. The API-based functionality in a translation management system allows programmers to integrate new projects in a given translation management workflow, showing the importance of this function of translation management systems.

2.16.3.2 Outstanding Collaboration Functions

The different operations and activities of project coordination, internationalization, localization, and translation require effective collaboration from every person in the translation team. It is essential that a translation management system offer different ways of enhancing team collaboration in order to sustain efficient project management. This perspective was supported by Wilson and Daugherty (2018), who indicated that collaboration between artificial intelligence and humans in a translation management system could allow for the generation of higher-quality content and could facilitate enhanced interaction and knowledge regarding new tools. The different personnel involved in a translation management system—such as project managers, developers, translators, clients, and the community expected to use the translated content—should be able to communicate on a single platform. For instance, leaving end-user feedback on translations, tracking the progress of each translation project, and marking translation segments are some of the collaborative functions needed in a translation management system. In this regard, Zhang et al. (2019, pp. 625-633) described the use of the Slack communication tool in collaborative learning in high school and recommended its integration in educational activities, such as thesis writing. The application of this tool in educational activities would enable more collaborative functions in a translation management system.

2.16.3.3 Translating Directly on a Website

Simplifying the overall translation process for all stakeholders is another important function of a translation management system. Examples could include guiding translators to browse a website and edit the required content instead of waiting for team members or forcing employees out of their comfort zone, thereby promoting their skills. De Vries et al. (2018, pp. 417-430) noted that online translation directly on a website could be helpful for end-users in terms of comparing between different groups of words and terminology. The authors regarded Google Translate as an effective translation tool for this purpose.

Kucis and Seljan (2014, p. 5) examined the efficacy of online tools in translation education. They concluded that free online translation tools helped people to develop

competence using information and communication technology (ICT) and improved the quality and consistency of output in the translation process. Additionally, the authors argued that these translation tools encouraged a more critical evaluation of resources. Alkan (2016, pp. 43-47) further asserted that cloud-based translation management systems in translation education could offer advantages to students in terms of improving their self-discovery skills and self-learning skills. Such tools could also help educators share their experiences related to translation and language technology and keep colleagues better informed about the process.

2.16.4 Application of Translation Management Systems

2.16.4.1 Translation Management in Theoretical Terms

Heinisch and Iacono (2019, p. 72) defined translation management as a process of automating the translation procedure; it involves the elimination of laborious manual work and repetitive tasks while enabling more control, delivering greater efficiency, and increasing the level of collaboration among stakeholders. In addition to the above points, there are various benefits associated with translation management, such as integrating more people into a cohesive team and upgrading the language assets and content systems in the process of translation across an organization or with suppliers. Van Grinsven et al. (2020, p. 75) added that translation management technology enables centralizing linguistic assets across the entire supply chain of translation. Automating certain processes can result in increasing translation throughput, and the use of time is reduced by automating manual procedures. Enabling collaboration refers to greater integration between departments, translators, translation vendors, and connected systems. This ultimately increases collaboration and enhances the efficiency of the translation process.

Ramos and Sperandio (2020, p. 177) explained that a translation management system handles the flow of content via localization; it includes sharing of linguistic data, translation, and the application of content that is reusable through workflow automation. Moreover, it is carried out as per the demand of business rules and the project data in the knowledge base. Data is tracked at every stage in the process of translation by using internal and external resources.

2.16.4.2 Translation Management in Practical Terms

Translation management is an important component of translation work that fosters better communication between parties who have separate language understanding. As explained by Roselló Rosiñol (2020, p. 8), the process of translation management is in practice accomplished by the automation of translation procedures, eliminating laborious and repetitive manual tasks, and enabling increased collaboration across levels of communication, ultimately delivering greater efficiency. There are four

major types of translation management. In practice, management involves terminology quality and processes such as machine translation and translation memories. It has been argued by Ramos and Sperandio (2020, p. 174) that translation management is an element within an organization that improves communicative clarity between stakeholders involved in a particular project or task. Translation management systems are helpful by providing assistance to people who speak different languages and want to communicate with other people who understand different languages.

In the world of business, it is important for each organization to focus on communication and collaboration with others. However, internationalization of a business involves various challenges, such as communicating with people who understand different languages and ensuring that project requirements are understood. For instance, if a company based in the United Kingdom expands its business to China, it is vital for the British-based company to communicate its vision, scope, and tasks to its employees working in China in their native language, which would typically be Mandarin (Ramos and Sperandio, 2020, p. 175; Roselló Rosiñol, 2020, p. 7).

2.16.4.3 Translation Management System as Extension of Project Manager

A project manager has various roles and responsibilities, chief among them to promote positive project outcomes and organizational performance. Gray and Ulbrich (2017, pp. 25-30) highlighted that translation management systems can save a company resources, reduce pressure, and greatly reduce costs by making the entire process more efficient and making it possible to use fewer team members on a given project. In addition, by automating as well as optimizing the workflow, an individual can put the resources of the project manager to better use in acquiring new tasks and managing other important elements in the business. Reñé (2016, p. 7) argued that a translation management system works in effect as a kind of project manager, as it can automate the tasks that are repeatedly carried out within business operations. In addition to this, translation management software or systems establish stronger communication between team members and help ensure that every member is working on the project when they have new tasks.

Translation companies need team members who fill a variety of roles, such as proofreaders, translators, interpreters, programmers, marketers, and project managers; negotiating between these various roles can be made easier with the help of an effective translation management system (Reñé, 2016, p. 8).

Further supporting the above arguments, Li (2015, p. 14) described how an effective translation management system and CAT tools could minimize the time required in

the translation process. This is achieved by updating all team members involved in a project and keeping track of every individual's activity, from translators to project managers. Li (2015, pp. 1-16) noted that the rapid development of the translation market has raised the demand for personnel training, thereby increasing opportunities for growth and development for team members with different skills in the translation process. Vieira and Alonso (2019, pp. 163-184) found that an automated translation management system had a significant positive influence on project management, translation work, and the expectations of clients regarding a project. Yang (2011) found a positive influence on end-users from the instant messaging function in a cross-language automatic translation system. Furthermore, implementing this technique helped overcome communication barriers. While not a complete replacement for a human worker, the functions of an automated translation management system certainly reflect and support the roles of a project manager in overseeing activities, allocating tasks, minimizing difficulties, and overcoming problems.

2.16.5 Translation Memory

A complete translation management system should include high-capacity storage for all the translated content of each client. Having an efficient translation memory will enable a translator to access older versions of data and keep the existing data safe for clients. The storage of files and translated texts in a translation management system allows for manipulation of existing data as per the new requirements of the client, along with adjustments for different platforms (Christensen and Schjoldager, 2017, pp. 89-105). Additionally, a translation memory built into a translation management system assists all the team members in a translation project, giving access to translated data in a safe and reliable manner.

2.16.6 Versatile Search

A versatile search function is another critical component of an effective translation management system as it allows users to search for translations and texts according to language pairing and client. Finding accurate previous translations can be a time-consuming process if a versatile search function is unavailable. In this regard, Wang (2014, p. 10) asserted that when this CAT tool is incorporated into a translation management system, it helps make terminology and parallel text management easier through a wide language corpus and word bank. Moreover, integrating term matching and leveraging artificial intelligence can allow a translation management system to search even more efficiently for translated text in a large database with high accuracy, thereby avoiding duplicating previous work.

2.16.7 Third-Party Interaction

A translation management system can make it easier for businesses to interact with third-party sources by allowing them to respond to localization and translation requests directly without leaving the system (Vieira and Alonso, 2019, pp. 163-184). Moreover, such a system makes it easier to incorporate new translations and get jobs, especially in situations where the final translations have been integrated within the tool. This setup offers project managers the convenience of using only one platform for managing external clients and internal stakeholders.

A recent trend in translation management systems is to provide an increasingly efficient process for managing a translation project. The key aspects of a translation management system discussed above have become essential in the industry around the world.

2.17 Preparation for Translation Management

2.17.1 Theoretical Preparation for Translation Management

According to Roselló Rosiñol (2020, p. 10), preparation for translation management takes place in different stages, such as project initiation, general initiation, translation initiation, translation, quality control, final administrative tasks, and follow-up work. In addition to these steps, the preparation for translation management also helps with aligning the process chain of specialized communication. Other important components that are part of the process of preparing for professional translation management within an organization include creating a translation glossary and style guide, sharing background information about content with the translation partners, using the latest translation memory tools, and employing quality assurance. The focus of an organization should thus be on translation management and establishing a system that can foster related operations.

It has been argued by Gray and Ulbrich (2017, pp. 25-30) that preparing people within an organization for professional life in the translation industry is vital. It is essential to provide the opportunity to practise the roles of information specialist, terminologist, project manager, coordinator, quality manager, and reviser in addition to the role of translator in the course of training. In the context of Saudi Arabia, students can be offered such training via universities as training, and development programmes related to translation management will ultimately increase their knowledge level. In addition to this, the training and development of these students can be accomplished via workshops, online course modules, and hosting. In order to boost the speed of translation management within an organization, as noted above, it is vital to create a style guide and a glossary of key terms. The glossary should deliver all necessary

information regarding taglines, slogans, brand names, relevant abbreviations, industry-specific terms, and product names (Yanan, 2017, pp. 107-130).

Yanan (2017, pp. 107-130) argued that the communication between the translation management department and each individual stakeholder needs to be done within the translation management system. Quality is also an important element in the process of translation management, so an expert should adequately review the content of the source text. Translation management software plays a vital role in the modern world as the integration and rapid advancement of technology is transforming every industry. Xiao (2018, pp. 30-60) found that translation management systems need to be established in an efficient manner because they increase the level of consistency and productivity while reducing the errors and costs involved in the process of translation.

2.17.2 Practical Preparation for Translation Management

In addition to learning the theory behind project management, the practical side of preparing project managers in the language services industry entails giving them hands-on experience. Given the growing role of digital technology, practical training should show learners how to use major types of CAT tools, such as translation memories, term-bases, translation editors, and software localization programmes (Yanan, 2017, p. 107). Another important skill is how to create and maintain a style guide and translation glossary, as mentioned above. It is also important for project managers to know what information to share with translation partners. Practical experience should likewise include practising quality assurance and quality control (Xiao, 2018, pp. 30-60). This skill is particularly important for project managers because organizations and clients typically prioritize translation quality.

Xiao (2018, pp. 30-60) explained that the education and practical training for project managers should be done carefully as it can save considerable time and money in the long run. Moreover, such training makes it more likely that localized content will be connected to the new language market in an efficient manner. In contrast, carelessness in the education or training of project managers can negatively affect the entire translation management system and the procedures involved in it. In Saudi Arabia, universities and companies could address this issue by spending more time training project managers and giving them more hands-on experience before they begin working on important projects.

2.18 Analysis of Translation Projects

2.18.1 Traditional Methods for Undertaking a Translation Project

Zheng (2017, pp. 10-30) discussed translation management before recent advances, with hiring translators being the main duty of project managers. In order to undertake a project, it was important for an organization or individual to hire a translator and take the individual to the place where the translation was required. For instance, interpreters were traditionally used by politicians, as meeting with a person who did not have a strong command of the politician's language would otherwise be difficult. There was a huge importance for translators, and the demand for people who knew Japanese and Mandarin, for example, was quite high as both languages can be difficult for people from many language backgrounds to learn. According to Xu (2019, p. 80), the quality of translation used to be affected by unpredictable human error. However, translation technology could be used to limit human error.

People used to prefer writing messages or business-related deals that an individual could read in the language they preferred (Zheng, 2017, pp. 10-30). The traditional method of undertaking a translation project was quite complicated and was often not accurate in some aspects. In addition, various factors made traditional translation management inefficient. These factors included a lack of clarity to develop a plan, not preparing source documents, not proofreading sufficiently, and human translators not being used to create a style guide and glossary to prepare for a translation project. In addition to this, the translation management process was not bound to any kind of deadline.

2.18.2 Modern Methods for Undertaking a Translation Project

The modern methods for undertaking a translation project are dominated by software that fosters greater accuracy and offers better services to clients. The shape of the industry is rapidly changing as advances in technology increase the accuracy of translation achieved by an individual or an organization (Nabilah, 2018, pp. 30-60).

2.18.2.1 Using Technology to Perform Pre-Translation Analysis

In order to carry out a pre-translation analysis, it is important to use appropriate technology. According to Zheng (2017, pp. 10-30), software provides various benefits, such as automating repeated processes, centralizing linguistic assets, and increasing the level of collaboration between departments, translators, connected systems, and vendors. Such benefits ultimately foster the process of translation, further contributing to successfully establishing relationships with others along with communicating business ideas and plans in a translation project management.

2.18.2.2 Using Technology to Perform Post-Translation Analysis

Technological advances across industries are influencing basic operations in the translation process to establish accurate terminology and conduct quality assurance of the translation project. With the help of new translation technology, an individual or organization can carry out translations more easily by using software tools that support the procedure of converting written text from one language to another. Translation technology tools also provide various benefits such as increasing accuracy, productivity, and overall effectiveness (Dickins et al., 2016, p. 64).

2.19 Chapter Summary

This chapter began by describing Saudi Vision 2030, a national development project in Saudi Arabia calling for wide-ranging reforms to translation education, training, and practice (see Section 2.2). It then discussed translation technology and the market needs of the language services industry in Saudi Arabia (see Section 2.3), the acquisition of translation skills (see Section 2.4), and the Saudi Arabian language services industry in general (see Section 2.5). Next, the chapter described professional translation organizations in Saudi Arabia (see Section 2.6) and why students and professionals need more advanced translation technology (see Section 2.7). The chapter then took a look at the current state of formal education and job training in the Saudi Arabian translation industry (see Section 2.8), major obstacles in this regard (see Section 2.9), and the scope for improving how translation is done (see Section 2.10). The chapter further detailed training to use translation technology (see Section 2.11), translator training in general (see Section 2.12), the issue of causality in translator training (see Section 2.13), and quality assessment and quality assurance (see Section 2.14). The chapter then detailed translation management systems (see Section 2.15), how students need to be prepared to use such systems (see Section 2.16), and the importance of training to analyse translation projects (see Section 2.17).

Chapter 3
Overview of CAT Tools

3.1 Introduction

This chapter examines the Saudi Arabian translation market in relation to CAT tools. It adopts a sociological framework, which allows for exploring a range of activities related to translation production through technology. The chapter gives a brief overview of important ideas in translation theory (see Section 3.2), the development of CAT tools (see Section 3.3), and the most common types of CAT tools (see Section 3.4). It goes on to discuss the current use of technology and terminology in the Saudi Arabian context (see Section 3.5), and how such changes in this regard could benefit the local market (see Section 3.6). Finally, the chapter highlights the core competencies that Saudi Arabian translators might want to develop going forward (see Section 3.7).

Figure 3.1 shows the Holmes' map of translation studies as modified by Toury (2012, p. 4). According to Figure 3.1, translation studies can be divided into two main types (pure and applied), which in turn are divided into branches and sub-branches. Pure studies includes theoretical and descriptive studies, while applied studies is divided into training, aids, and criticism. The present study is primarily situated within the three branches of applied translation studies.

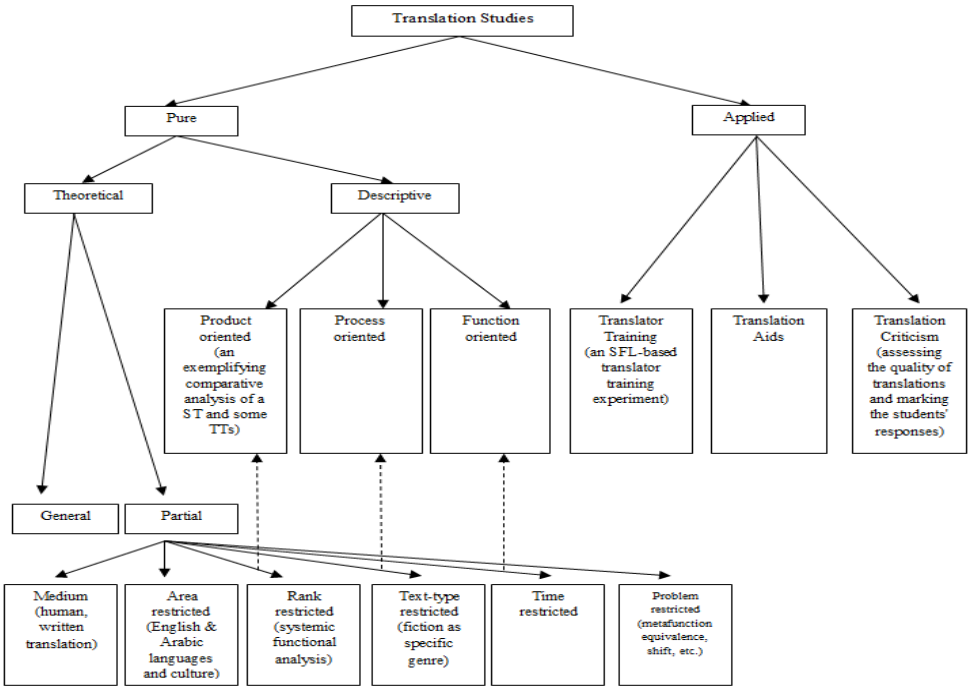


Figure 3.1 Overview of Translation Studies

3.2 Translation Theory

Thinking about translation has progressed from the simple word-for-word versus sense-for-sense (or literal versus free) dichotomy (Doherty, 2016, p. 12). Word-for-word translation means the replacement of one word in the source-language text with another word in the target-language text. It was arguably the major recommended form of translation for centuries until the second half of the twentieth century, when the focus shifted from words to meanings. In contrast, the sense-for-sense approach focuses on preserving the meaning of the source text in the target language.

In the 1950s and 1960s, the focus shifted to the description and analysis of procedures, and this period saw the emergence of the formal versus dynamic binary proposed by Eugene Nida (Quah, 2006, p. 23). Like the previous word-for-word and sense-for-sense binary, Nida's formal translation focuses on the source-language structures while dynamic translation leans towards adapting to the target language (Quah, 2006, p. 24). In the 1970s, Juliane House introduced the "overt versus covert" dichotomy, and in the 1980s, Peter Newmark introduced semantic versus communicative translation. However, most of the binaries to emerge since the 1940s are reminiscent of the older word-for-word and sense-for-sense dichotomy.

From the late 1940s to the 1970s, theories of translation were heavily influenced by linguistics. Nida's approach to the translation process, for example, resonates with Noam Chomsky's transformational-generative grammar (Quah, 2006, p. 24). Linguistic theories continued to influence translation until the late 1970s when new theories tackled phenomena in translation that linguistics failed to address. Hans Vermeer's skopos theory, for example, focused on the function of translation in the target culture and society. Skopos theory draws from translational action theory, a function-oriented approach to the theory and practice of translation (Quah, 2006, p. 25). Under skopos theory, translation takes into consideration the needs, expectations, and culture of the target-language users (Quah, 2006, p. 25). Although it would also be possible to consider subsequent developments in translation theory, I will refrain from doing this here. For, while a thorough understanding of foundational translation theory is important, contemporary translators also need practical skills with CAT tools in order to better put theory into practice.

3.3 Development of CAT Tools

CAT tools developed out of advances in computing, making translation easier, faster, and more consistent by partially or fully automating parts of the process. Only one year after the invention of computers in 1946, the scholars Warren Weaver and

Andrew D. Booth proposed using computers to translate natural languages (Chan, 2004, p. 223). CAT tools have since seen four stages of development.

The first stage, from 1967 to 1983, known as the period of germination, involved the introduction of the idea of incorporating computers into the translation process (Chan, 2015, p. 1). During the 1980s, researchers started to collect and store translation samples in computers. However, their projects faced limitations in terms of storage space.

The second stage, from 1984 to 1992, constituted a period of steady growth. It was during this period that the first German CAT company Trados and the Swiss Star Group were founded, both of which had a huge impact on CAT tool development (Chan, 2017, p. 5). During this period, all the CAT companies were founded and operated in Europe. However, in 1988, the Japanese released the translation tool ETOC that was an upgraded electronic dictionary. ETOC solved a problem that traditional electronic dictionaries had failed to address, namely translating units of more than two words. When ETOC was released in Japan, Trados in Germany released TED, a plug-in for text processor tools.

Translation technology continued to see advances in subsequent years and many companies released software to follow these developments and market demands (Chan, 2017, p. 7). In 1992, there was a significant expansion in CAT tools. In Germany, Workbench I and II were launched, and a network of global offices started to open worldwide. IBM in the United States launched its IBM Translation Manager (TM/2), which had its own editor and a translation memory. In Russia, PROMT Ltd. Was founded to develop machine translation but also offered dictionaries, translation memories, and data mining systems. In the United Kingdom, two important companies were founded: SDL International, which functioned as a service provider for software globalization, and ATA Software Technology, specializing in Arabic translation software.

The third stage in the development of translation technology was a period of rapid growth from 1993 to 2003 (Chan, 2017, p. 12). This period witnessed the emergence of more commercial systems, functions, the Windows operating system in 1993, support for more document formats and languages, and Trados as a market leader. Translation software started supporting more document formats such as Adobe InDesign, FrameMaker, HTML, QuarkXPress, PDFs, and Microsoft Office documents. While the CAT tools that were developed in the 1990s did not support all major languages, the release of Microsoft Office in 2000 allowed the integration of far more languages into the software.

The fourth and current stage, starting around 2004, has been a period of global development, with new companies, systems, features, and language support (Chan, 2017, p. 25). Since the emergence of Trados in 1988, there are now more than 100 CAT tools around the world used by over 200,000 translators. Now more than ever, it is vital for companies and countries to use modern CAT tools to compete in a growing global marketplace.

3.4 Overview of CAT Tools

CAT tools are computer applications used by agencies and individuals to assist in the translation process, increasing speed, productivity, scalability, quality, consistency, and profitability. These tools include translation editors, translation memories, term-bases and other terminology management systems, localization workbenches, machine translation, spellcheckers, and fragment matching (Asare, 2011, p. 1). In this way, they help edit, manage, and store translations. For instance, translation memories are language-pair databases that store segments of texts (sentences, phrases, paragraphs, or headings) that have been previously translated so that they can be recalled for future use (Bowker, 2002, p. 92).

A workbench is a translation memory tool that allows translators and agencies to store and reuse previous translations (Asare, 2011, p. 78). Workbenches sometimes refer to integrated machine-aided human translation systems that combine several tools that the human translator can use, such as spellcheckers, electronic glossaries and dictionaries, terminology databases, and collections of previously translated texts stored in the relevant translation memory (Quah, 2006, p. 13).

Term-bases are like dictionaries in that they store terms and expressions. They are used by organizations, customers, or for product-specific terms. Dictionaries can also be used as a CAT tool to help with the meaning of the translation, spellchecking, and autosuggest functions that retrieve segment fragments.

Machine translation is automated translation carried out by a computer without human intervention, such as Systrans Business Translator, Babel Fish, and Google Translate (Asare, 2011, p. 146). Machine translation software can be trained to become more accurate, and adaptive machine translation is a new self-learning engine that learns from post-edits of machine translation output.

3.5 Saudi Arabian Translation Industry and Technology

Arabic translation has a long tradition in preserving, passing on, and expanding knowledge, and the Arabs produced the largest amount of translation activity in the

pre-modern period (Mehawesh, 2014, p. 689). During the Ottoman period, however, Arabic was largely replaced by Turkish in schools and formal use in the Arab world. With the Napoleonic invasion of Egypt in 1798, most Arabic translation was based on official and legal documents along with a grammar of spoken Arabic in 1801 (Baker, 1998, p. 322). With the European colonization of Africa and the Middle East in the late nineteenth and early twentieth centuries and the collapse of the Ottoman Empire, Turkish as a lingua franca was replaced by French, English, and Italian (Mehawesh, 2014, p. 690). Decolonization in the mid-twentieth century witnessed the emergence of the Pan-Arab movement and a greater emphasis on using Arabic in translation.

Nowadays, translation training programmes in the Arab world exist in two forms: as independent institutions, such as the King Fahd School of Translation in Tangier, and university departments, such as Yarmouk University in Jordan (Mehawesh, 2014). Translation has also been transformed by computers, digital technology, databases, and dictionaries. These developments have led to the creation of professional associations, such as the Committee of Arab Translators in Saudi Arabia and the World Arab Translator's Association (WATA) in Belgium. KALIMA is one of its ongoing projects, involving the translation, publication, and distribution of a wide range of books in the Middle East. The project stems from the lack of Arabic versions of many literary and scientific works and aims to give Arabic readers wider access to global knowledge.

The translation industry in Saudi Arabia has gone through several phases (Fatani, 2007, p. 4). During the initial phase, which lasted until the end of the twentieth century, the focus was on the propagation of knowledge to the Saudi Arabian people, the translation of books into Arabic, and the translation of Islamic heritage books into different languages. The second phase, which started in 2000, was dedicated to meeting the current needs of Saudi Arabia. To achieve this goal, the government appointed high-ranking officials, academics, and specialists to produce translations and open the country up to the rest of the world. After 9/11, and its negative effect on the public perception of Saudi Arabia and the Middle East, another goal of Saudi Arabian translation was to present a more positive image of the country.

After Saudi Arabia joined the World Trade Organisation in 2005, it established new economic zones in many parts of the country, and a large number of sectors partnered with Microsoft. Translation became more important, and better opportunities for trained translators and interpreters became available (Fatani, 2007, p. 4). As a consequence, there has been a growing demand for translation in Saudi Arabia and an interest in CAT tools, especially machine translation. Fatani (2009) was the first market-research analysis of the translation industry in Saudi Arabia and highlighted

the need for academic institutions to develop translation curricula to fill the gap between training and market needs.

New technology has brought enormous changes to the translation industry (Odacıoğlu and Köktürk, 2015, p. 1085), but training with CAT tools remains at a nascent stage of development in public and private Saudi Arabian institutions. With the Saudi Vision 2030 goal of making Saudi Arabia a global centre for business, however, there is an increasing need to develop the field of information technology and better integrate CAT tools into the translation process (Alshuaibi, 2017, pp. 52-62). This project is supported by the government with the intention of improving service quality while opening to the world through tourism and other economic activities. As a result, the demand for translation has grown enormously (Abu-ghararah, 2017, p. 112). During the Hajj, for instance, translators and interpreters are needed to help the millions of pilgrims upon their arrival at Saudi Arabian airports and take them to the places where they stay (Abu-ghararah, 2017, p. 112). Although the number of translators and interpreters has increased, pilgrims still face difficulties with administrative procedures and accessing information on public services (Taibi, 2014, p. 59).

Some sectors in Saudi Arabia have a constant need for more translators and interpreters, such as government ministries, community centres, and hospitals (Taibi, 2014, p. 112). The sector suffering the most from this shortage is the court system, with hearings often postponed as a result. Other areas with a high demand for qualified translators are the Saudi Electricity Company, Aramco, the Shura Council, and the Islamic Development Bank (Fatani, 2009). To increase productivity and reduce costs, a shift to CAT tools requires continual training for the translators employed by these companies (Fatani, 2009).

Out of the 24 universities in Saudi Arabia, translator training is only offered by King Saud University and King Abdulaziz University at the bachelor's level. Many other Saudi Arabian universities offer translation modules within bachelor's degrees in English that aim to help students become translators. However, university translator training has not kept pace with developments in technology and the market (Fatani, 2007, p. 1). Some impediments to this training at universities are misconceptions about the nature of translation, the absence of a common approach among teachers, false assumptions about trainees' bilingual competence, and mismatches between workplace expectations and translator training in academia (Atari, 2012, pp. 103-127).

In addition to integrating CAT tools into translation courses, educators should contribute to the field by introducing student-oriented localization models that combine theory and practice (Odacıoğlu and Köktürk, 2015, p. 1087). It is important

for the Saudi Arabian market to keep pace with the global translation market to be competitive and effective. For this purpose, training designed by teachers around the world could be used as a reference at Saudi Arabian universities.

3.6 Benefits of CAT Tools in the Saudi Arabian Market

This section highlights the importance of CAT tools and their positive impact in the global and Saudi Arabian translation markets. Using CAT tools involves quality assurance, which could improve the quality of Saudi Arabian translation through editing, proofreading, desktop publishing (file conversion from the original format), and reviewing the translation before delivery.

Greater use of CAT tools in Saudi Arabia would make the local translation market more effective, competitive, and professional. More effective translation management involves terminology management, translation memories, and machine translation. Such tools help create and maintain unified up-to-date databases for terminology. Through translation memories and machine translation, terminology becomes accessible to all stakeholders, particularly those in quality control. The stakeholders in the Saudi Arabian translation market are outlined in Figure 3.2. As shown in the figure, CAT tools enable the project manager to open projects, involve language service providers, maintain quality control, and generally manage the translation process. CAT tools help enable the translation project manager to manage a project as follows:

- Create the project
- Involve language service providers (LSPs)

The translation project manager manipulates the translation process using CAT tools, as follows:

- Project initiation
- General initiation
- Translation initiation
- Translation
- Quality control
- Final administrative task
- Follow-up work

Using translation memories more extensively in the Saudi Arabian language services market could save time, increase translator efficiency, and improve the overall quality of translation products, making translators more competitive by enabling them to avoid retranslating the same or similar content repeatedly from scratch and to ensure consistency from one translation to another. This should increase productivity and provide more opportunities for novice Saudi Arabian translators to work with experienced professionals.

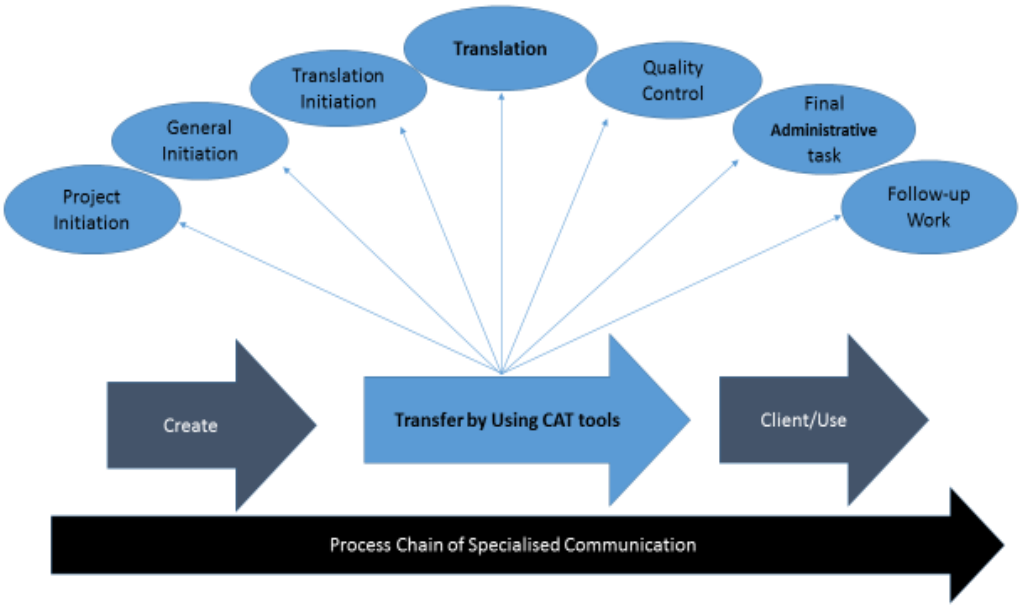


Figure 3.2 Translation Management Process

As discussed in Section 2.16, translation quality assurance is a set of procedures carried out to ensure there are no errors in the translated text and to correct errors (Makoushina, 2007, p. 3). Quality assurance involves editing, proofreading, and reviewing translated documents before they are sent to clients. When translators use CAT tools, their workflow can be monitored individually. Accordingly, a project manager should highlight what needs to be revised by team members.

Fatani (2007) was the first study to highlight the challenges and needs of the translation industry in Saudi Arabia. However, more research is needed on quality assurance and CAT tools to identify current challenges and offer appropriate methods of assessment. The Saudi Arabian market is also suffering from a lack of organizations for service providers. For this reason and since CAT tools are at an early stage of adoption in Saudi Arabia, qualified foreign translators are needed to train students and professionals in the use of these tools.

3.7 Translator Competencies

Mackenzie (2004) noted that translators today need more than linguistic ability and cultural knowledge. They also need to be able to work as part of a team. Other major competencies include word processors, the Internet, information technology, and translation software, such as term-bases and translation memories. In addition, they need to be able to market themselves and their services. Mackenzie acknowledged that it might be impossible to learn each of these skills as part of a bachelor's programme, but students should still be introduced to them early on.

Abu-ghararah (2017) found several of these skills to be lacking in the Saudi Arabian language services industry and called for a comprehensive approach to using new technology (p. 115). One area that was particularly lacking was applied translation training in CAT tools. In addition, translators needed more specific language skills, training in consistency of approach and reducing errors, high-level bilingual and bicultural knowledge, self-awareness, subject expertise, research competence, high-quality output within a limited timeframe, time management, computer skills, understanding of text-type and genre-specific registers, and specialization in different types of translation (p. 116).

Abu-ghararah (2017) identified a gap between training and industry in Saudi Arabia. The main problem was a lack of training in unified terminology systems, CAT tools, information specialists, and project management. In order to prepare students for professional life in the translation industry, they should be given the opportunity to practise the roles of the terminologist, information specialist, project co-ordinator, project manager, reviser, and quality manager in addition to the role of translator in the course of their training (Mackenzie, 2004, p. 32). As an example, Saudi Arabian universities could offer this training through courses or workshops by hosting international conferences.

3.8 Chapter Summary

CAT tools have brought about significant changes and massively benefited the field of translation. However, training programmes in Saudi Arabia have failed to keep pace with developments in the field (Abu-ghararah, 2017, p. 117). It is therefore important for Saudi Arabia to integrate more CAT tools into the private and public sectors as well as pedagogy at universities and private institutions. However, successful implementation of these tools will rely on students, instructors, and service providers' acceptance of them, an issue the present study seeks to address.

Chapter 4
Methodology

4.1 Introduction

This study employed an exploratory mixed-methods design to examine translation pedagogy at Saudi Arabian universities through the eyes of students, teachers, and translators (Creswell, 2013). This chapter explains the mixed-methods design of the study (see Section 4.2), theoretical framework of the study (see Section 4.3), research hypotheses (see Section 4.4), pilot study (see Section 4.5), and population and sample (see Section 4.6). After this, it describes the data collection instruments and procedures, including questionnaires (see Section 4.7), interviews (see Section 4.8), and training and observation (see Section 4.9), followed by an overview of ethical considerations (see Section 4.10) and a summary of the chapter (see Section 4.11).

4.2 Mixed-Methods Approach

A mixed-methods approach was used in the present study to collect and analyse both quantitative data (via questionnaires) and qualitative data (via interviews and participant observation). The Unified Theory of Acceptance and Use of Technology (UTAUT) model as developed by Venkatesh et al. (2003) was employed to guide the process of analysing the data collected in relation to the literature on the perceptions of and readiness to use CAT tools. Using this model could help translators meet the ISO standards for translation management in Saudi Arabia.

Kabair (2016) defines data collection as the "process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes" (p. 202). Following a mixed-methods design, the present study's data were divided into two broad categories: qualitative data and quantitative data. Kabair (2016, p. 202) gives the following definition for qualitative data:

> Qualitative data are mostly non-numerical and usually descriptive or nominal in nature. This means the data collected are in the form of words and sentences. Often (not always), such data captures feelings, emotions, or subjective perceptions of something. Qualitative approaches aim to address the 'how' and 'why' of a program and tend to use unstructured methods of data collection to fully explore the topic. Qualitative questions are open-ended. Qualitative methods include focus groups, group discussions and interviews.

Kabair (2016, p. 202) also gives the following definition for quantitative data:

> Quantitative data is numerical in nature and can be mathematically computed. Quantitative data measure uses different scales, which can be classified as nominal scale, ordinal scale, interval scale and ratio scale. Often (not always), such data includes measurements of something.

Descriptive statistics were employed to compare the use of CAT tools in Saudi Arabia with the rest of the world. As noted above, the research model consisted of various constructs, including performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), user motivation (UM), price value (PV), self-management learning (SML), and behavioural intention (BI) to use translation technology. This research model was likely subject to boundary marking of its own, particularly in the application of the UTAUT model within translation technology training, due to the influence of smartphones, tablets, and personal computers in Saudi Arabian industry and education.

4.3 Theoretical Framework

4.3.1 UTAUT

This study employed the UTAUT as a theoretical framework. This model claims that there are four key factors in technology use and acceptance: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). The model also employs four variables: gender, age, experience using a given tool, and voluntariness of use (see Figure 4.1). The present study examined the effect of performance expectancy, effort expectancy, and social influence on Saudi Arabian students' behavioural intention to use translation technology.

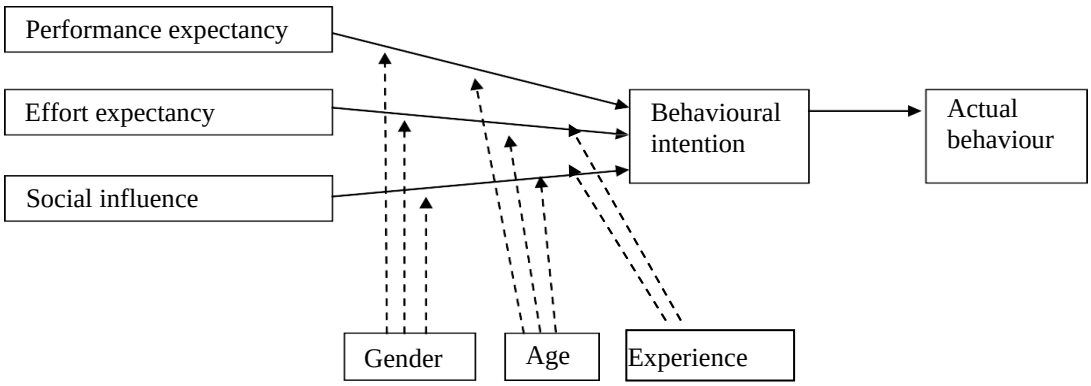


Figure 4.1 Research Model

In Figure 4.1, solid lines are the effects tested in this study. Performance expectancy is to what extent someone anticipates a tool will improve their work (Venkatesh et al., 2003, p. 447). For instance, Saudi Arabian translators should be more likely to adopt

new technology if they believe it will help them compete locally and internationally. Venkatesh et al. (2003) integrated five concepts from various models into the construct of performance expectancy, namely perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectations. Examples of performance expectancy from Saudi Arabian translators using CAT tools might include establishing a dialogue with companies using this technology and reducing the time and cost of translation.

Effort expectancy is how easy or difficult one expects it will be to use a given technology (Venkatesh et al., 2003, p. 450), while social influence is "the degree to which an individual perceives that important others believe he or she should use the new system" (p. 451). Key concepts in social influence are subjective norm, social factors, and image, as the social environment has a substantial influence on the way people act. Finally, facilitating conditions are how much one thinks "organizational and technical infrastructure exists to support the use of the system" (Venkatesh et al., 2003, p. 453).

As part of a pilot study, the researcher surveyed more than 180 Saudi Arabian translation students in 2019-2021 and performed a structural equation model analysis to identify their intention to meet minimum recommended computer skills. Facilitating conditions ($\beta = 0.355$, $p = 0.002$) had a significant influence on intention to use CAT tools, while performance expectancy ($\beta = 0.162$, $p = 0.141$), effort expectancy ($\beta = -0.004$, $p = 0.971$), and social influence ($\beta = 0.164$, $p = 0.100$) did not have a significant influence. Age showed a moderating effect on these variables.

Another important variable is ability or self-efficacy, which can be defined as the extent to which a person can use an innovation to achieve a task (Torkzadeh and Van Dyke, 2001). This is a useful construct for developing measures of self-perception and self-competency regarding technology, as self-efficacy has been found to influence the intention to use CAT tools (Boonsiritomachai and Pitchayadejanant, 2017).

4.3.2 Technology Acceptance Model

This study also used the technology acceptance model to explain how attitudes influence CAT tool adoption in Saudi Arabia. Developed by Davis et al. (1989), this is one of the most widely used and influential models in information systems, technology, and services and has been fully validated to predict user acceptance of new technology. The technology acceptance model extended the theory of reasoned action (Ajzen and Fishbein, 1980) by introducing two belief factors (perceived usefulness and perceived ease of use) that replace many of the attitude measures in the theory of reasoned action. These two factors are postulated to determine an

individual's intention to use technology, with "intention to use" being a mediator of actual system use. Perceived ease of use is also posited to have a direct impact on perceived usefulness. In general, the technology acceptance model has been shown to explain up to 40% of the variance in usage intentions and 30% of variance in system usage (Compeau and Meister, 2002).

To increase the predictive power of the technology acceptance model, one can consider the role of external variables (Firat and Venkatesh, 1993), which Legris et al. (2003) called the ultimate drivers of technology use. In a variety of disciplines, external variables have been used to explore how technology use is affected by individual differences, such as cognitive, personality, demographic, and situational variables (Zikmund and Miller, 1979). In the present study, participants' attitudes towards using translation technology were measured using a three-item, 5-point semantic differential scale (e.g., very good, very bad, somewhat good, somewhat bad, neither bad nor good).

4.3.3 Dependent and Independent Variables

The constructs of this study were hypothetical or latent variables that could not be directly observed by the researcher but could be inferred using other indicators. Hence, all constructs were operationalized using multiple items that captured the latent variables in order to increase reliability and minimize measurement errors.

Previous research on Saudis using translation technology was based on literature from disciplines other than marketing. The issue of there not being research on marketing will limit the engagement of beginner translators' training options. Thus, constructs were operationalized using modified versions of existing scales from other disciplines that have demonstrated validity and reliability. All items were modified to accommodate the context of CAT tools in a Saudi Arabian applied translation programme. All constructs were operationalized using multiple reflective indicators capturing the latent variables.

The dependent variable was intention to use technology (behavioural intention). The reflective scale for intention (willingness) to use translation technology consists of a 5-point semantic differential scale asking individuals to assess how likely they will use a given piece of technology (Bruner et al., 2001, pp. 103-107). The independent variables were performance expectancy, effort expectancy, social influence, facilitating conditions, ability/self-efficacy, and attitude (see Figure 4.2).

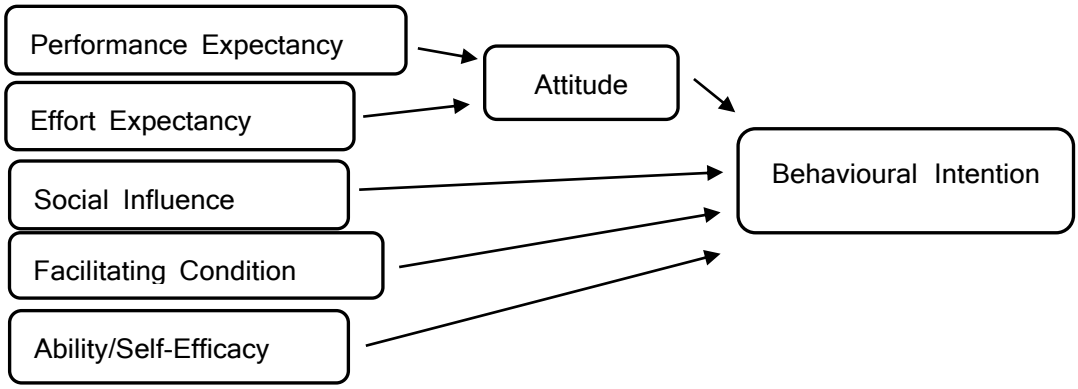


Figure 4.2 Independent Variables and Dependent Variable

4.3.4 Selecting an Appropriate Sample Size

Sample size plays an important role in the estimation and interpretation of statistical results. While conducting a preliminary quantitative study, selecting the appropriate sample size helps increase the overall generalizability of research findings. Moreover, the choice of the correct sample size reduces biases and helps in making the results of the study more valid and reliable.

The literature suggests several factors affect sample size requirements, including model specification, model size, a departure from normality, and estimation procedures (Hair et al., 1998). However, views differ regarding what constitutes an appropriate sample size. Some scholars suggest having 100 to 150 participants to run structural equation modelling, while others suggest a minimum of 250 (Hair et al., 1998). Another view is to use the 10-times rule with partial least square structural equation modelling. According to this view, the appropriate sample size for partial least square structural equation modelling should be equal to 10 times the maximum number of arrowheads pointing at any construct in the model (Hair et al., 2017). As this study uses partial least square for data analysis, and since the maximum number of arrowheads pointing to the constructs in the proposed mode is eight, then a minimum of 80 responses should be sufficient to run the analysis using partial least square. Partial least square is a regression technique in multivariate statistical data analysis. It is one of a number of statistical methods of structural equation modelling, a multivariate technique used to test and evaluate multivariate causal relationships.

Partial least square structural equation modelling has experienced increasing use in a variety of fields, especially the social sciences, where normality restrictions (normality of distribution) and sample size requirements are significant considerations. More specifically, it has advantages when sample sizes are relatively small (Hair et al., 2014). In the present study, partial least square structural modelling has been used to determine the sample size of the study. As this approach to sample

size detection usually proves beneficial for conducting social science studies and is an effective technique to determine sample size, it was considered suitable for the study.

As per the partial least square method, and based on the researcher's judgement, a sample size of 200 participants was determined to be appropriate for the study. About 400 email invitations were sent in two weeks to a list of Saudi Arabian students interested in translation studies; 185 responded within 10 days. Reminder emails resulted in a total of 200 responses, with 189 completing the questionnaire successfully. Thus, the total sample size of the study was 189.

4.4 Hypotheses

Based on the literature and theoretical framework, this study tested the hypotheses outlined in Table 4.1.

Table 4.1 Hypotheses

Path	No.	Hypothesis
1	1	There is a significant positive relationship between performance expectancy and attitude toward using translation technology
2	2	There is a significant positive relationship between effort expectancy and attitude toward using translation technology
3	3	There is a significant positive relationship between attitude toward using translation technology and behavioural intention to use that technology
4	4	There is a significant positive relationship between social influence and behavioural intention to use translation technology
5	5	There is a significant positive relationship between facilitating conditions and behavioural intention to use translation technology
6	6	There is a significant positive relationship between self-efficacy and behavioural intention to use translation technology
7	7a	Attitude toward using translation technology mediates the relationship between performance expectancy and behavioural intention to use translation technology
8	7b	Attitude toward using translation technology mediates the relationship between effort expectancy and behavioural intention to use translation technology

4.5 Pilot Study

The questionnaires were piloted twice. First, they were sent to a convenience sample of 15 colleagues to ensure face validity (readability), logical arrangement of questions, and to test for the used model. This helped validate the questionnaires for the main study, assess their reliability, gather opinions about clarity and readability,

and estimate the time that would likely be needed to complete them. Several modifications were made based on this feedback. Second, the researcher invited Saudi Arabian participants to fill out the questionnaires to make sure the items would address the research questions.

4.6 Population and Sample

The target population in this research included all Saudi Arabian translation teachers, novice translators, professional translators, and translators registered with the Ministry of Commerce and Industry. Demographic information was collected regarding age, gender, location, country of origin, profession, and experience.

The actual sample used to represent the above population consisted of three groups. The first contained 131 students pursuing a BA in English Language at Prince Sattam Bin Abdulaziz University, 26 completing an MA in Arabic-English Translation at the University of Leeds, and 32 completing a PhD in Translation Studies at the University of Leeds who held an MA from a British or United States translation or English department. After taking a questionnaire, some of these students completed a training intervention, with observation cards used to assess them.

For the second group, the researcher interviewed five instructors teaching undergraduate translation courses in Saudi Arabia. For the third group, the researcher interviewed 10 professional translators from the public sector (the Chamber of Trade, the Ministry of Labor, and the Ministry of Justice) and the private sector (e.g., King Abdullah Institute for Translation & Arabization, Alomar Office, Saudisoft, and Vinnela). This sample was expected to yield detailed results without requiring excessive time and effort for recruitment and collecting, transcribing, and analysing the data.

The data collection sites were in Riyadh, Wadi-Adwasir, and the United Kingdom, including translation company offices and universities. While interviews took place in the interviewee's office, students were surveyed and trained in a classroom or lab at their university.

Several steps were taken to increase the response rate. For example, the questionnaire was simple and moderate in length, and a cover letter was attached to the questionnaire explaining the purpose of the study and assuring participants of the confidentiality of their responses.

4.7 Questionnaires

Each of the questionnaires (for students, teachers, and translators) was divided into several sections. First, the cover page gave the purpose of the study, the researcher's contact information, instructions for filling out the questionnaire, and a consent form. Second, background information was collected. The student questionnaire collected information such as age, university, department, major, academic year, and coursework. The questionnaires for instructors and translators asked for gender, nationality, translation experience, department they had studied in, level of education, subject specialty, and length of translation experience. The third section asked about the curriculum and pedagogical approaches of translator training programmes, focusing on the use of CAT tools in Saudi Arabian universities or the translation market. The fourth asked about the availability of translation technology and learning resources in translator training programmes. The fifth asked for instructors' qualifications, such as a certificate or licence, to teach CAT tools. The sixth elicited participants' ability to use translation technology and learning resources in translator training programmes. In the seventh section, participants were asked to provide their input for the follow-up translation training session. After a training intervention, some students also took a follow-up questionnaire. The training session employed part of a text translated by Professor James Dickins of the University of Leeds.

4.8 Interviews

The interviews with teachers and translators were based on the proposals by Saldanha and O'Brien (2013), as shown in the appendix. Each interview was expected to take around 25 minutes. The interviews took place in person, during which the researcher asked the interviewee questions and wrote down their answers. When the researcher finished the report for each interviewee, that person was given the transcript to read over in order to make sure there were no misunderstandings. This was done partially because these participants were native Arabic speakers and all interviews were conducted in English, which was a second language for them.

4.9 Training Intervention and Observation

After the initial questionnaire, Saudi Arabian graduate and undergraduate students at Prince Sattam Bin Abdulaziz University and the University of Leeds were asked to participate in training on how to use CAT tools. These students were preparing to graduate in the same academic year, and their academic ability as reported on the questionnaire was consulted to ensure they could meet the needs of the training.

The training was divided into three sessions. In the first, the researcher presented the participating students with a theoretical overview of CAT tools. In the second, the researcher demonstrated how to use MateCat, a free open-source CAT tool (MateCat, n.d.). In the third session, students put into practice what they had learned in the first two sessions by working with MateCat.

The training described above involved participant observation. Marshall and Rossman (1989) defined observation as "the systematic description of events, behaviours, and artefacts in the social setting chosen for study" (cited in Kawulich, 2005, p. 3). At the end of each session, the researcher collected observation cards regarding participant performance and intention to use CAT tools before, during, and after the training. These cards recorded researcher observations and participant reactions when asked to use CAT tools. In addition, the researcher observed how students engaged in the training. The UTAUT was used as a framework to analyse the relationship between training participation and intention to use CAT tools outside the classroom.

4.10 Ethical Considerations

Data collection tools were presented in the participants' native language (Arabic) along with an English translation to maintain the validity of the findings. All data collected were made as anonymous as possible, with numbers used instead of names or initials. Participants were told that they could withdraw by contacting the researcher directly at any time before the research was written up. The signed consent forms and other confidential electronic information were stored on the researcher's University of Leeds M:drive. In accordance with the 1998 Data Protection Act, the data storage policy of the University of Leeds was strictly followed, and all data gathered from the participants were treated as entirely confidential. All hard copies of completed questionnaires and interview transcripts were stored in a locked cupboard and destroyed as soon as possible through the University of Leeds confidential shredding system.

4.11 Chapter Summary

This chapter explained the study's exploratory mixed-methods design, theoretical framework, hypotheses, pilot study, and population and sample. In addition, it explained how the different types of data were collected via questionnaires, interviews, and training and observation, all while following proper ethical standards. The next chapter presents the qualitative results.

Chapter 5
Qualitative Results

5.1 Introduction

This chapter presents the qualitative interview results and an overall analysis of the data in relation to each interview question. As noted previously, all interviews were conducted in English with non-native English speakers. As a result, interviewees were given a written transcript of their interview to ensure it was accurate. In addition, the interview quotes used in this thesis were lightly edited for grammar and clarity. The researcher examined the results through situation analysis, which involves analysing all the factors involved in a situation, using the rhetorical formula "Who is saying what to whom, why, how, by what means, for what purpose?" as proposed by Nord (1991, p. 8). The researcher also employed thematic analysis, which involves analysing "chunks" of data. These chunks could "consist of several paragraphs, a sentence, a phrase or even single words or terms. Answers to open-ended questions might refer to more than one idea (or 'theme') and so multiple codes might be assigned to one response" (Saldanha and O'Brien, 2013, p. 190). The researcher employed keywords from responses, and second-level coding looked at emerging patterns. After this process, the researcher examined "the data to cross-examine the codes applied, identifying overlap between coding categories or grey areas" (p. 190).

In this context, an interview was conducted with professional translators working in different sectors in Saudi Arabia to gather their detailed points of view to address the research questions. The data were collected from 10 professional translators, and the answers to all of the questions were analysed separately with the help of the interview transcripts. The results section presents and evaluates the interview findings and transcripts. In alignment with the research aims and questions, 11 questions were asked from the participants and codes were created for all the participants to ensure their anonymity.

As Soratto et al. (2019) noted, recent and continuing developments in computer technology, software, and computation—in a shift largely starting in the 1980s—have fundamentally reshaped not only what we know but also how we approach and conduct research in the first place. Specialized software has since been developed that is tailored to the specific needs of different types of quantitative and qualitative studies.

Therefore, to make it easier to process, manage, and analyse the data, I employed the popular qualitative database tool ATLAS.ti, although I could also have used similar software. Before I began analysing the qualitative data, I first obtained a licence for

the software and installed it on my computer. I then completed several workshops to ensure I could use the software properly. After that, I started the data analysis by transferring the raw data from the written interview forms into one file, being sure to keep participants' words intact. This file was subsequently opened in ATLAS.it, which supported the coding process.

The type of transcription employed was suitable for qualitative research. First, I read and re-read the transcribed data to get a sense of the participants' different experiences as a whole. Multiple readings of the transcripts helped me to immerse myself in the data. Afterward, the dataset was broken down into smaller samples based on the research questions and interview items. After obtaining a general overview of the participants' responses, I started to identify initial key statements by coding the data and then identified themes. While reading each sample of the data, I created the initial codes in the ATLAS.it programme. In total, seven themes and 26 codes were generated in this fashion.

According to Soratto et al. (2019), "codes synthesize the meaning or the central information contained in a set of similar quotations" (p. 3). Further "comments can be used to describe the meaning in more detail and also to summarize and interpret the data coded by each code" (p. 3). The researcher did the initial reading of the interview transcripts to identify the codes that would answer the research questions and help divide them into more manageable codes using ATLAS.it. I read each new sample of data and applied the codes created in the first sample. Additional codes were created based on the previous sample. After the initial coding process, I went back to review and recode all of the responses. I assigned labels that represented significant themes in each response using words or short phrases that would be easier to remember, skim, and organize and would thereby facilitate the process of searching for commonalities and interpreting the data as a whole. This coding process helped identify broad category names, examine separate information, and create connections within the results. The data were assigned to 26 codes, such as "CAT tools", "training with modern translation technology", and "skill requirements". Using ATLAS.ti, the codes were grouped and combined into possible themes. This process is "generally used to group codes and quotations by characteristics, or other meta criteria like case information, dates, document types, location, etc." (Soratto et al., 2019, p. 3). Each code and theme was given a description. Finally, a data report was produced based on the themes that would be discussed with the participating students.

5.2 Interview Question 1

Question 1 asked, “Based on your experience, could you please outline the various steps and stakeholders involved in the process of carrying out a given translation project from the initial enquiry by the client to the final delivery to the client of the finished translation materials?” Below are relevant quotations from participant responses.

Interviewee 1 (public university instructor):

> As I received an MA degree and a PhD in translation studies from Kent State University, US, I started working as a central translator at Cleveland Clinic translation internship units; this position allows me to deal with the translation project [managers] who worked in [the] Saudi translation market. My main aim is to consider the American strategy in the field of translation and the way to use it for teaching and translating despite the fact that it is difficult to use. There is no training session offered for translators in Saudi Arabia. Yes, although I have a theoretical background which I acquired by self-learning, it is not enough to rely on it and use it currently. I wish Saudi universities would be able to offer translation-training sessions by 2030. […] novice Saudi translators indeed need professional translation skills, which [are] used in [the] Western translation market. Currently, translation training [is] needed […] in Saudi translation environments. In fact, I engaged in many translation projects with professional translators who are interested in the use of CAT tools or machine translation in [the] translation process but still [could not use them in] Saudi Arabia due to the lack of translation training sessions in Saudi Arabia. Most Saudi universities or [the] Saudi translation market do not provide any professional instructions to translate by using CAT tools and machine translation […]

Interviewee 2 (translator at a public institution):

> As I work at a sensitive government institution position on political subjects and diplomatic topics, I might say that stakeholders in our translation projects are translators. We deal with some sensitive topics; we have to discuss translated terms and agree on unified translated terms that we base on the text genre and dictionary.

Interviewee 3 (private contractor working with a public legal institution):

> When I receive the text to translate it, I just submit it to the head of [the] department via email and a final draft exported into a Word document […]. Most of my work is on legal texts and they trust my translation experience.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> I do not have an idea; I might say translators and clients. However, in government institutions, likely translators and the head of [the] department transfer the translated product.
>
> I do not have an idea; I might say translators and clients. However, this government institution checks the validity of certification for companies that are offering a job for [the] Saudi translation market. I am interested to work within the Saudi translation market; this check indicates the companies meet the work licence requirement.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Only translators and clients. As the translator has a licence, then he can translate based on his strategy that is valid to produce good translation quality.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> In Saudi Arabia translation markets, there are two stakeholders in [the] translation process: a client and a translator. The translator decides on whether or not [to work in a group with other translators]. There [are] no unified translation process instructions to follow.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Essential stakeholders in our translation process are free online dictionaries, translators, and clients. In our institution, each translator is responsible to handle the translation [and produce a] final draft to transfer to the client. There is no applied translation management because of cost and knowledge needed.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Based on our experience in the field, stakeholders are no more than three in Saudi Arabia. They are clients, translators, and office managers.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> I think we are the only LSPs [language service providers who have] applied the professional stakeholder during the translation process [as it] is not that important for the Saudi translation market to engage [in a more] professional translation process, such as editor, proofreader, et cetera. Stakeholders in the given translation project are clients, our business managers, and one or more of our qualified translators.

[Is it via CAT tools or machine translation?]

> Usually, translations [are] done without machine translation, but we use Microsoft Office, which is part of CAT tools. Still, professional CAT tools [are] difficult to use because of the lack of training sessions related to [the] professional use of CAT tools, machine translation, and translation memory. However, one of our translators is able to use SDL Trados 2017, but he cannot share his experience with a novice translator in Saudi Arabia.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Of course, stakeholders in [the] Saudi translation process are clients and certified translators. There is no translation manager engaged in that. Most of our services have been done between one of our qualified translators, business managers, and clients. However, we do not keep a hard or soft copy [of a] translation for more than 30 days.

Some overall observations could be made about the participants' reflections on the steps they took in carrying out a translation project. The entire procedure of the translation project is not very complex, and the employees have to translate the projects and submit the drafts to their department heads. It should also be noted that several translation processes do not require translation managers, and a copy of the translated text is kept for the next 30 days so that, if required, changes can be made in the project. The responses revealed that the translators used CAT tools to translate the texts, and they possessed a translator's licence. However, some translators working in government organizations have to discuss sensitive texts and then translate them.

The interview responses to the first question suggested that the translation market of Saudi Arabia is focused on the introduction of automated and intelligent translation systems and increasing the scope for machine translation and CAT strategies. However, the responses indicated a lack of formal training offered to translation professionals to use more advanced translation software. The awareness level of the translators was very low with respect to advanced methods of language translation, and translation institutions were reportedly not offering professional training courses to interpreters and translators. CAT tools and statistical machine translation are reportedly used to a considerable degree in Saudi Arabian translation services. The use of neural machine translation by Saudi Arabian institutions has likewise been observed for the translation of Arabic texts into other languages, such as English (Alkhatnai, 2021b). Therefore, based on the experiences of the translators, it could be concluded that there is ample scope for the introduction of CAT tools in commercial translation practice in Saudi Arabia.

The answers to the first question showed the need to examine the Saudi Arabian translation market through relevant stakeholders. The answers also revealed a lack of confidence among translators and instructors, many of whom failed to provide clear, simple answers to the question. To assess the validity of their answers to Question 1, the researcher tried to get a clear answer (yes, no, I don't know) through Question 2.

5.3 Interview Question 2

Question 2 asked, "In terms of translation projects and translation project management, are translators and their clients the only stakeholders during the translation process?" The term "stakeholders" in this question was explained to the interviewees as including everyone from the client who places the order to the agent who returns the translated text to the client. On occasion, clarifications were provided regarding who would assist the translator to ensure the final draft of the translation was ready and whether the translator alone was responsible for translating, editing, and proofreading the text. Participant responses are given below.

Interviewee 1 (public university instructor):

> Theoretically, no. Reality of Saudi translation market, yes.

Interviewee 2 (translator at a public institution):

> In my department, I have some translators work to translate as a first draft. Other translators work as proofreaders for quality assurance competences in the target text.

Interviewee 3 (private contractor working with a public legal institution):

> Yes, each project is translated as a translator's duty and we have qualified translators with experience.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> Yes.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Yes.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> Yes, but not for all our translation projects. It is based on how much we are paid. However, sometimes we need proofreaders for the target text.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Yes, this is what most of the Saudi translation market works with.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> No, because sometimes we have a third party as we cooperate with other translation service providers.

[Do you mean a commission?]

> Yes.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> For most of our service, yes.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Yes, for most of the small translation projects, but for big projects, no, I have to work on it with a group of translators. In a big project, I tried to work as a proofreader of target texts to make sure that the final translation draft that needs to be translated by other translators is well translated.

The participant responses to the second interview question indicated that translators and their clients are the only stakeholders in Saudi Arabia who are involved in a translation project. However, this depends on the cost involved in the project. Sometimes, translation projects in Saudi Arabia are managed by third parties. Thus, it can be stated that only clients and translators are typically stakeholders in small projects, while in big projects, a larger team of translators is usually involved.

The answers to Question 2 showed the difficulty of finding professional translation services in Saudi Arabia. English departments in many Saudi Arabian universities demonstrate that ISO standardization is accepted in Saudi Arabian universities, but there might not be qualified teachers for this subject in applied translation studies.

Furthermore, since I collected data at Prince Sattam University, teachers and department heads have asked me to give lectures about how to introduce applied translation studies into their programmes before considering hiring teachers from the United States and the United Kingdom. Such requests have encouraged me to further pursue this area of inquiry.

5.4 Interview Question 3

Question 3 was used to filter participants' awareness of standardization and their ability to influence the translation field in Saudi Arabia. Question 3 asked, "What do you know about the ISO 17100 report *Translation Services — Requirements for*

Translation Services and Terminology Management?" Their answers to this question are given below.

Interviewee 1 (public university instructor):

> Based on the knowledge acquired in my MA and PhD in translation studies at Kent State University, yes, I am familiar with this report, but unfortunately, most of my clients and translators in [the] Saudi language industry are not aware [of] this reference.

Interviewee 2 (translator at a public institution):

> Sorry, I do not know.

Interviewee 3 (private contractor working with a public legal institution):

> Sorry, I do not know about this report. However, most of the legal terminology that is needed is translated in the dictionaries that I use every time.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> Sorry, I do not know about this report.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Sorry, I do not know about this report.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> I am familiar with this report in the academic field, but I cannot rely on it during my work in [the] Saudi translation market. I like to have my own translation memory for translated terms. Usually, I create my own term-bases based on the understanding of the target text, but not as unified terms to make it available for other translators outside my workplace.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Sorry, I do not know about this report.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Sorry, I do not know about this report.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Sorry, I do not know about this report, but we have future visions to overcome this obstacle in [the] local translation market. There is a need for translation training in Saudi Arabia, and improving Saudi translators with up-to-date

> technology and up-to-date professional standards is required to [offer] international professional translation service.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Sorry, I do not have an idea about it, and there is a large debate on it because there is no unified system that guides the Saudi translation market.

The answers to the third question revealed a lack of awareness about ISO standardization among most interviewees involved in the Saudi Arabian translation market. The answers further suggested a lack of training or an appropriate environment for the growth of translators in Saudi Arabia. The interview data further showed the lack of implementation of the ISO standards in the local translation industry. This low level of awareness could have a negative effect on the overall productivity of the industry. This lack of awareness could also have an impact on training in universities, companies, and other organizations.

5.5 Interview Question 4

Question 4 sought to identify interviewees' level of awareness about technology in translation and the extent to which translators support training in applied translation studies. Question 4 asked, "To what extent can the Saudi Chamber of Commerce support the use of CAT tools and translation software programmes for someone who is looking for a job in the Saudi translation market?" Participant answers to this question are given below.

Interviewee 1 (public university instructor):

> Unfortunately, not at all.

Interviewee 2 (translator at a public institution):

> Unfortunately, not at all. Also, not supported in my fieldwork.

Interviewee 3 (private contractor working with a public legal institution):

> No need to use more than Microsoft Office.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> Unfortunately, not at all.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Not at all because they do not have an idea about technology that can be used in professional translation.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> Not supported.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Not supported.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Not supported. I think in 2030, [there will] not really [be] support to use translation technology. However, I always support my translators [who] work with us to use translation technology in all different levels in the Saudi translation market because it helps in building the consistency of translated work.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Not supported. They do not have professional translation consultants.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Not supported. Using Microsoft Office is more than enough for my translation work. Sometimes I have to use Google translation, but it is an optional choice to use translation technology or [to keep using the] traditional way.

As noted in Section 3.6, CAT tools are essential tools used worldwide to translate text into other languages. CAT tools speed up the overall procedure of translating the text and provide other options like storing the text and proofreading it to enhance the quality of the translation (Pietrzak and Kornacki, 2020). The Saudi Arabian government wants to decrease the country's reliance on the income gained from the export of oil-based products and further develop the other sectors of its economy. Because Saudi Arabian people speak Arabic, it is very important for the nation to implement practical translation tools to achieve higher growth in these areas (see Section 3.3). In this context, the participants in the present study were asked about the use of CAT tools in the Saudi Chamber of Commerce.

The data indicated that CAT tools were largely not used and were not supported by the Saudi Chamber of Commerce. Instead, the majority of participants reported only using Google Translate or Microsoft Office to translate the source text. These responses highlighted a lack of progress in Saudi Arabian translation services.

5.6 Interview Question 5

Question 5 asked, “To what extent do you think translators working on localization should be able to use translation software during localization?” Responses to this question are given below.

Interviewee 1 (public university instructor):

> Theoretically, a lot of work needs to be done related to localization in Saudi Arabia to meet international localization standardization, but there is no translation specialist [who] can cover all the Saudi translation market needs in terms of translation training. Localization in [the] Saudi translation market [has] not yet met the Saudi language industry needs. For example, it is very rare to [see a] game localizer working in the Saudi translation market nowadays.

Interviewee 2 (translator at a public institution):

> I do not know. There is a need to have localizers from Saudi Arabia to meet the Saudi business market for video games and local markets.

Interviewee 3 (private contractor working with a public legal institution):

> I do not know. No applied translation tools can be used in [the] Saudi translation market or at Saudi universities. Saudi universities are the central point for this topic and they still do not offer courses related to this yet.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> I do not know what localization means. However, based on your explanation for the question, many professional translation needs will be provided in [the] Saudi translation market by 2030.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> I do not have an idea about it, because we do not have Saudi translator specialists in this professional field yet.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> It is the future and modern workplace applicability to have qualified Arabic localizer translator in both [the] Saudi translation market and universities. Nowadays, there is one or two Arabic companies outside Saudi Arabia which can help you to do localization projects, such as Softline translation in Egypt. That could not be enough to meet the Saudi language industry needs.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> I have not worked on this before, so I do not have an answer.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> I do not have an idea about localization.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Mostly, we have to contact translators from outside Saudi Arabia if there is a need to work with localization. I have not heard about it before.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> [The] Saudi translation market does not have this kind of service yet. I think I can make use of it in future work. Also, I can find non-Saudi translators to help since Saudi universities do not offer any course related to localization. Besides, there is no training session in this regard.

The fifth interview question of the study elicited the views of the participants about the extent to which translators working at the local level were able to use practical CAT tools for the purpose of software localization. Half of the participants reported not knowing anything about this topic. At the same time, some of them stated that Saudi Arabia needed more effective use of translation tools and technologies at the local and national levels. This showed that students in Saudi Arabia were not being educated about localization tools, and as a result, translators at the local level did not use appropriate localization software. The problem was reportedly so severe that to carry out localization, people were sometimes hired from outside the country to do this type of work.

5.7 Interview Question 6

Question 6 asked, "Could you please provide me with details of recruitment procedures for the private sector to become a certified translation agency in the Saudi translation market, that is, whether translators are required to have translation technology skills?" Responses to this question are given below.

Interviewee 1 (public university instructor):

> To have a certificate degree in English language is enough to work legally in [the] Saudi market.

Interviewee 2 (translator at a public institution):

> Being bilingual is enough to work as a translator. You need an academic degree in any language subject to be certified officially in [the] Saudi translation market.

Interviewee 3 (private contractor working with a public legal institution):

> BA, MA, or PhD in English or any other language will be enough evidence to be certified.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> It is complicated for Saudi translator's certification to work in [the] Saudi translation market. There is a condition of having three years' experience after graduation from [a] non-Arabic language programme. The applicant must be over 21 years old. The experience should [have been] obtained after receiving the university degree.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> There are requirements [for] language service providers [to become] a business. The applicant needs to apply [to] two public institutions: [the] Saudi Chamber of Commerce and Saudi Ministry of Labour. There is a common requirement for both of them to get the work permit as mentioned in their website.
>
> Issuing a professional license, I have to register [on] their website to get the information that I need as an applicant. However, I registered to file the application [for a] professional licence to confirm their conditions. I found out the following information requirements. There are different types of registration forms, three different application forms based on the applicant's nationality.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> There [are] no CAT tools required to meet the condition of certification. Being bilingual is enough to be certified to work in [the] Saudi translation market.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Certification which proves being a bilingual is enough to be certified to work in [the] Saudi translation market.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Being bilingual is enough to be certified to work in [the] Saudi translation market. Also, there's regulations and rules like any other business in [the] Saudi market. However, what is important is acquiring a certification of qualification or experience of more than three years.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Certification, experience in translation, above 21 years old. Other rules and regulations similar to any other business. Sometimes there could be a translation test for the applicant, and when translators pass this translation test, [they are] certified to sign a contract with [the] government to do translation project contracts.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Certification and experience in translation. Above 21 years old, like in any other business. Sometimes there could be a translation test to get legal options to work with a public institution.

All of the interviewees gave answers about the qualifications for becoming a translator in Saudi Arabia. The data showed that some of them believed that a minimum of three years of experience was required to become a translator. Most of them stated that the person should be above 21 years of age and have at least a bachelor's degree. Therefore, it could be deduced that to become a translator in Saudi Arabia, there is no requirement for CAT tool use. Instead, the translator must have command of at least one language other than Arabic. As a result, people without any knowledge of CAT tools could begin a career as a professional translator.

5.8 Interview Question 7

Question 7 asked, "Could you please provide me with details of the translation service provider's recruitment in the public sector?" Responses to this question are given below.

Interviewee 1 (public university instructor):

> Being certified as a bilingual is enough to work as [a] translator [in] public sectors. Along with this, I also observed that for the recruitment of translation service providers within the public sector, it is critical for the individual to have sufficient language experience. Further, the experience of working in the private sector and expertise in industry-based work is also required for finding a person eligible for being recruited within the public sector.

Interviewee 2 (translator at a public institution):

> I think [you] just to have [a] BA in English language […] to work as a translator. In addition, the translator also requires having the quality of understanding of the needs of the language learner. The translator also needs to have effective language teaching skills and the skills of conducting proper examinations and taking required feedback so as to understand the success of translation services.

Interviewee 3 (private contractor working with a public legal institution):

> Ten years of translation experience or [a] bachelor's degree in [a] non-Arabic language. Efficiency in the translation process and confidence in facilitating [a] non-Arabic language's clear and accurate translation are also needed.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> There is no specific requirement in [terms of] translation technology skills. However, holding [a] translation certification with [a] BA, MA, or PhD is enough to meet the requirements. More of them are looking for Saudi translators with translation experience. The applicant must be 21 years old and above. Expected skills to work as translators is the ability to use Microsoft Office, which shows that [the] translator can translate by using computers when [they] need to translate Word documents, et cetera.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Same as translation market requirements. Twenty-one years or above. Saudi citizen or non-citizen. Being bilingual and certified with BA, MA, or PhD. Translation experience of a minimum [of] three years. To pass [a] theory test, the applicant [is] asked to translate a paragraph text into [the] Arabic language and vice versa.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> Saudi citizen or non-citizen. Being bilingual and certified with BA, MA, or PhD. In addition to having as a minimum requirement three years of experience translating from English to Arabic and vice versa as part of the theoretical exam.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> Same as translation market rules and conditions. Twenty-one years or above. A Saudi citizen or not. Being bilingual and certified with BA, MA, or PhD. Translation experience with three years as a minimum. To pass the theory test, the applicant could [be asked] to translate a text into the Arabic language and vice versa.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Sorry, I do not know.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> If you have a certification, that shows you are a bilingual speaker [which] is more than enough to find a job as a translator in Saudi public sectors or at least [be] certified as [a] freelancer.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Based on my experience in [the] Saudi translation market, there are no unified terms and conditions for public sectors, and for sure they have not [been] required to use translation technology that is being used in [the] professional translation market yet. I hope your research will help [them] adopt the use of CAT tools and machine translation. However, based on the public institution, there is no specific requirement in public sectors. I think I will only follow the private sector rules and regulations to work in [the] Saudi translation market.

The responses to the seventh question showed the basic requirements individuals need when entering the Saudi Arabian translation market. Responses detailing the recruitment procedures for translators and the qualifications that they had to possess indicated that no specific requirements were present to judge the translation skills of a person before their recruitment as a translator. Some respondents stated that one must be bilingual to become a translator and apply for such a position. It could also be deduced that people felt that after getting a bachelor's degree or master's degree in English, they would be eligible to become a translator. These details highlighted the inefficient recruitment process for translators in Saudi Arabia and the low use of CAT tools. Since any person with a degree in English can become a translator, this would suggest that translations produced in Saudi Arabia might be of lower quality. More details are given in the data analysis in Section 6.4.2.

5.9 Interview Question 8

Question 8 asked, "What are your expectations from a Saudi translation student who graduates from an English department as a translator?" The participants' responses are given below.

Interviewee 1 (public university instructor):

> Most Saudi translation programmes focus on translation theory concepts. Students' individual differences will play an important role in building the ability to develop career paths. My focus is to build practical knowledge along with the clarification of theoretical concepts of the Saudi translation student because this aspect would support the student in his or her employment in future. The practical skills of translation, interpersonal skills, active listening, cultural understanding,

and written knowledge [need] to be strong for the Saudi translation student who graduated to become a proficient translator.

Interviewee 2 (translator at a public institution):

At least being qualified to finish the given translation project in Word file format. Having initial level of modern translators' skills to use translation technology or CAT tools. Being able to translate on time. Being able to learn new translation skills. Qualified to use computers. Being able to know [how] to translate Adobe Reader files [PDFs], Word documents, or PowerPoint documents. The Saudi translation student also requires having the dedication to learn a new language, for getting a command of the second language, so as to gain proficiency in delivering translation services in future.

Interviewee 3 (private contractor working with a public legal institution):

Being able to act as professional translators. Being able to access very common online dictionaries. Being able to use the needed technology during translation, such as search engines, and machine translation, such as Google. Being able to use technology to save translated documents. Translators need to be ready to improve [their] translation skills. Unfortunately, most graduated translation students do not meet the mentioned requirements because of the weakness of Saudi translation curriculum. It is also required for the Saudi translation student to have dedication and motivation to learn by working on tools like the CAT tool to be able to guide learners in future while delivering translation services. I also think that there is also [a] requirement for a student-centred as well as competence-oriented curriculum for the students to have a significant understanding of language translation [to help them] become capable of delivering translation services with efficiency.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

I hope that they are interested to learn and gain new knowledge on the reality of Saudi translation market needs. The students are also needed to possess significant knowledge of daily speaking in the English language so as to become capable of efficient translations and gain proficiency in providing future translation services as a translator.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

Must be up to date on translation theory and practice. Being bilingual is not enough to translate. Saudi Vision 2030 will need translators who are able to use technology in [the] translation process. In fact, most [translators] are not aware of translation quality assurance, so most of their students are not able to understand

> their needs, [and] they fail to understand the required skills that can make them good competitors in the field.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> Saudi Vision 2030 will put Saudi translation training in a critical situation [since] the quality level of the current Saudi translation market is weak. The weakness of [the] translation market, training, and the lack of qualification in the use of technology will be considered as an obstacle [in the] translation field in Saudi Arabia. Saudi Aramco is one of the biggest oil companies worldwide, [but it] cannot trust the current Saudi translation market to translate contracts and terminology into [the] Arabic language due to the lack in quality.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> I am not optimistic because of the lack of internships between [the] Saudi market and translation programmes in Saudi universities, except King Saud University. My expectation is to have training sessions inside public sectors, such as court, police, and companies dealing with embassies and international schools in Saudi Arabia.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> My expectation is to be able to identify the needs of the language industry and translation market. My expectation from Saudi universities is to meet the professional translation levels, which is already being applied in Western translation studies. The students are also required to be optimistic, focused on their future career goals, and ready to do an internship in the translation industry [to gain] professional skills.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Our future expectations from Saudi translation programmes is to meet the professional level in theory and practice. Currently, there is a gap between the academic translation programme and the translation market in terms of development, improvement, and internship cooperation. The alignment of the academic curriculum with the requirements of the translation market for employment must [take] place for the students to have a clear pathway to learn translation and get employment in the translation service companies.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Recently, Aramco established their own translation centre to [use] translation memory and machine translation to unify their translation product in all market industries around the world. In fact, my expectation is to have [an] internship for our novice translator at that centre to develop Saudi translation programmes in order to meet the professional translation market needs to be adopted in Saudi Arabia by 2030. Sometimes, students confront problems regarding cultural differences, inadequate technical knowledge, lack of time availability, and lack of vocabulary knowledge. The Saudi universities are required to focus on improving the technical knowledge and vocabulary of students through proper training and cross-cultural education for mitigating cultural barriers for the students.

This interview question was designed to ascertain the level of confidence participants had that Saudi Arabian graduates could compete in the Saudi Arabian translation market compared to those who graduated from programmes in other Arab countries. To avoid bias, participants were not asked this directly. In this context, as getting a bachelor's degree in English is the mark of eligibility for becoming a translator in Saudi Arabia, the translators were asked about their expectations of new graduates who were about to begin their career as a translator. The data revealed that most of the participants believed that the country should promote the use of CAT tools so that new translators could learn about them and use them to facilitate their work. In addition, they felt the translation industry in Saudi Arabia should be able to match the standards of Western translation companies. For this reason, students needed sufficient theoretical and practical knowledge in translation, which would require professional training in different subject domains.

5.10 Interview Question 9

Question 9 asked, "Do you think graduate translation students have an opportunity to develop the use of technology during the translation process?" The participants' responses to this question are given below.

Interviewee 1 (public university instructor):

> Saudi students who graduated from Saudi universes are not given the opportunity to develop the use of technology during [the] translation process. Meanwhile, graduated Saudi translators studying [an] MA and PhD in applied translation programmes at US or UK universities are trained to use technology in translation following Western translation perspectives. Therefore, they have the opportunity to develop the use of technology during the translation process.

Interviewee 2 (translator at a public institution):

> I do not think so, unless they studied at specific applied translation programmes. However, while developing students' practical skills and knowledge, the Saudi universities in their courses allow tools like SDL Multi-Term, Ooona subtitling software, and SDL Trados Studio for improving the knowledge of translation of the students.

Interviewee 3 (private contractor working with a public legal institution):

> I do not know about any training in applied translation studies in Saudi Arabia yet.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> They have to develop the use of technology during the translation process. The technologies like Crowdin and Memsource can be utilized in regard to having an understanding of translation procedures in a significant manner so as to develop proficiency to get employment in the translation industry.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> Maybe they will be given the chance but not at Saudi universities.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> There [are] some training sessions that might be offered by our professional translators but not in [an] advanced level and it is for our translators' groupwork as a project to develop translation quality in terms of translation market competition. There is still a significant need for the Saudi universities to focus on the utilization of CAT tools in regard to executing the translation procedures as these tools are useful for quality assurance. CAT tool also has translation memory as well as a foreign-language-based dictionary for simplifying the translation. However, there is still a clear gap in the usage of this tool in Saudi universities which is needed to be overcome for improving the translation procedures.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> If Saudi translators are looking for specific programmes, they should do it as soon as possible to help us to develop our translation market using technology. For me, I do not know any translation centre that could help in this. CAT tools might have significant implications as these tools make the translation procedures cost-saving, speedy, and accurate so as to refine the translation services. Thus, Saudi universities must provide opportunities to the students to utilize CAT tools for learning optimal translation procedures.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Through self-learning or outside sources as private training sessions online. For graduates, there is a gap in technology-based training in Saudi universities. It is still required for providing students with the opportunities [to use] technologies such as CAT tools and Google translation to improve the practical skills of understanding vocabulary, word meaning, and sentences through efficient translation procedures. Along with this, online dictionaries, websites, software for translation, as well as Arabic-English interpreters are also needed to be integrated for enhancing opportunities for the students to execute the translation procedure effectively.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> There is no specific training centre in Saudi Arabia that offers training workshops on the use of CAT tools during translation in the Saudi market. They may find these workshops available online or outside sources as self-learning. However, nowadays we have some professional academic translators that graduated from [the] USA and UK; they are familiar with CAT tools and machine translation, but they are not yet authorized to offer training courses outside their academic institutions. In Saudi Arabia, there is a requirement for integrating CAT tools for raising optimal learning of the translation process so as to prepare the students for future translation service provision in their careers. The students are also needed to be familiarized with subtitling software, OmegaT, and SDL Trados as Saudi companies are planning to use these technologies, but the graduates are not aware of the utilization of these technologies.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Most of the graduated Saudi translator applicants from Saudi universes are unable to use the needed programmes related to translation studies. However, they are qualified to use smartphones. I think novice translators would like to learn new features that can help in the translation process, but there are no training workshops available in Saudi Arabia on CAT tools as an example.

Since CAT tools do not appear to be commonly used in Saudi Arabia, the participants were asked if translation graduate students had the opportunity to develop the use of this technology during the translation process. All of the participants agreed, and the majority of them believed that students should not limit themselves to Google Translate and Microsoft Office. Instead, the use of more sophisticated CAT tools should be promoted to enhance the quality of translation. Unlike universities in the United Kingdom or the United States, Saudi Arabian universities do not provide

students with access to these tools. As a result, translation graduates have to take extra training on CAT tools for their work.

5.11 Interview Question 10

Question 10 asked, “What kind of technology tools do you think students should be familiar with to be good competitors in the Saudi translation market?” The participants’ responses are given below.

Interviewee 1 (public university instructor):

> SDL Trados, OCR to make documents readable and modify PDF files. I also consider CAT tools as efficient technology-based tools with which the Saudi students must be familiarized as these tools offer high-quality translation, and significant assistance to humans regarding language translation with the help of the automatic dictionary, multilingual word-processing, as well as consultation of terminology. This advanced tool also has benefits in terms of saving costs and managing fast translation; therefore, [these tools are needed] for being a good competitor within the translation market of Saudi Arabia.

Interviewee 2 (translator at a public institution):

> They should be familiar with computer use, Windows features or Mac [operating] system. Being able to translate different file formats.

Interviewee 3 (private contractor working with a public legal institution):

> Familiar to translate unreadable documents, such as images. In terms of using technology, Saudi translators should be familiar with all Microsoft Office features. They should be able to use online dictionary and Google translation as tools before translating. The CAT tools such as memoQ, SDL Trados, Memsource, and Wordfast are suggested as the significant technology tools to which the Saudi Arabian students are required to have familiarity for showing competence in the Saudi translation industry. Some other tools, like optical character recognition for converting and translating written text, are also essential for raising the competence of students in translation procedures.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> Saudi translators [have a] challenge to understand the need of CAT tools and to handle or translate a text. First, there is a need to give students courses on the use of technology during translation at Saudi universities. Meanwhile, there is a need for applied translation training sessions in [the] Saudi translation market.

> Professional translators should create their own strategy to handle translation projects using technology for themselves or novice translators.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> There is a need for a localization [expert], web translator, video game translator, audio translator, and conference translator using technology. These means are still not available in most Saudi universities. There is a need for courses related to the ability to use technology by professional translators worldwide. Unfortunately, there is a need for technology training sessions between translators to create healthy environments for novice Saudi translators. CAT tools are suggested to be incorporated in Saudi Arabian universities for the students to learn translation in a cost-efficient, easy, effortless, consistent, and professional manner. The translation process with CAT tools can be made accurate, controllable, and useful for practical application. These tools are recommended so that the translation can be efficiently made without any complexity and high-cost investment.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> Being able to create translation memory. Being able to update translation memory. Being able to use translation memory. Familiar with machine translation. Able to learn how to convert unreadable documents. Being able to use email in groupwork.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> My expectation is not that high. I just need to see a good outcome and the Saudi university's ability to use computers as much as they use their smartphones.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> Being able to use computers. Being prepared to learn up-to-date technology in [the] professional translation process. Google translators, SDL software, and other CAT-based tools are required to be used in Saudi universities for enhancing awareness among the Saudi translator students to learn the efficient process of translation. In today's environment, smartphone-based applications are also available which the students [need] to be familiarized with […]. These technologies are productive [at improving] the competence level of Saudi students in terms of gaining professional skills for delivering value-based translation services by associating with translation companies.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Since there are no technology courses in translation programmes in most Saudi universities, students should be familiar with [the] Western applied translation market. There is a need to engage in independent learning after graduation as novice Saudi translators. Online websites, translation software, translation applications, and games oriented to language translation are noted to be efficient that [should be] required […] in the courses of Saudi translator students. In this way, these students might get proficient by easily understanding the translation technique. In this way, in their future jobs, Saudi students might get professional skills to deliver translation services with efficacy.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> Awareness [of] the use of translation technology that is being used in Western translation, such as SDL Trados, [the] MateCat website, and translation memory strategy. As a translation service provider, educated Saudi translators need to improve our service, they need to be supported [in] taking translation training sessions online if novice translators sign a contract with us for [a] one-year full-time job. Online dictionaries, Google-based translations, and online applications might also help students to keep […] learning [about the] translation process […]. In this manner, a good professional understanding of language translation services can be attained by the students for delivering value-based and competitive translation services within the Saudi translation market.

This interview question addressed the CAT tools that participants thought Saudi Arabian students and translators should use in order to be competitive in the translation industry. The answers indicated that translators should be able to use tools such as SDL Trados Studio to translate documents in different formats, and the country needs effective audio-translators, videogame translators, and web translators. According to interviewees, translators should also know all of the relevant features of Microsoft Office and have the ability to handle a wide range of text types.

5.12 Interview Question 11

Question 11 asked, “Based on your experience in the Saudi translation field, do Saudi translators focus more on translation theory or practice during the translation process?” The participant responses are given below.

Interviewee 1 (public university instructor):

> Only in translation theory at Saudi universities and no room for applied translation studies. Translation theory emphasizes sociological aspects that the translation is

carried out within a social context in a sociological system. Social learning, ethnicity, cultural or religious values, and ethics are usually considered by Saudi translators during the translation process to maintain values and appropriate social positions.

Interviewee 3 (private contractor working with a public legal institution):

Focusing to use translation theory only.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

Emphasis at Saudi universities is put on theory, the outcome is based on what [is] available. Translation theory emphasizes the preservation of meaning and appropriate sense of the translation made of certain languages. Similarly, Saudi translators emphasize the accuracy of senses or meaning derived from the translated language to maintain the credibility and values of the translation process.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

The focus [is] on translation theory, and it is hard to [learn about] applied translation theory. However, translation theory is [somewhat] applied by considering professionalism, [and the] literary and technical process of translation. Along with this, proper proofreading, localization, native style of meaning derivation, and plain language utilization are also considered while undertaking the translation process within the Saudi [translation] industry.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

The outcome of Saudi universities' focus on translation theory. After engaging in [the] Saudi translation market, most Saudi translators are looking for training on the use of technology, and it is hard to find it locally. While making language translation, it is also needed to consider cultural values and ethical notions so as to avoid emotional harm to anyone during language translation. It is also necessary to keep the meaning of translated language unchanged to maintain the quality and credibility of the translation services.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

On translation theory and no chance for the applied translation studies as a practice. This is due to the lack of focus in most BA translation programmes at Saudi universities. Most novice Saudi translators do not have a background in the use of technology in both theoretical and practical levels. After working in the market, they try to learn about the use of CAT tools and machine translation as professional translators. Currently, to meet Saudi Vision 2030, there is a need for

> applied translation practice in [the] Saudi translation market. Clarity of expressions, the correctness of meaning, cultural values, correct senses, and elimination of misunderstanding are the important theoretical aspects [that] need to have emerged in the practical application while making language translations. Thus, students can gain professional training to utilize it in practical working in Saudi translation companies.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> On translation theory and it is hard to convince them to learn about the use of CAT tools or machine translation. Some of them were surprised when they started using technology during translating and some of them could not believe the way the use of machine translation during [the] translation process is helpful. As translation theory focuses on linguistic correctness, sociological values, and semiotic correctness, the Saudi translators also consider these aspects in regard to managing credibility and professionalism in language translation procedure.
>
> Most of the Saudi university's outcome focus [is] on translation theory. There is a gap between Saudi translation programmes at Saudi universities and some Saudi professional translation markets.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> Translation theory, mainly literary theory, tends to address and solve the question about the generation of meaning and nature of language for understanding cognitive thoughts and philosophy carried by the communicator in his or her mind while communicating something. Similarly, the Saudi language translators also emphasize the philosophy and cognitive attributes of the communicated language so as to understand the actual meaning and the nature of the thoughts of the communicator.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> The focus [is] on translation theory. In fact, it is very hard to find qualified professional Saudi translators who are able to use CAT tools, machine translation, and provide training sessions for novice Saudi translators. There are professional Saudi translators who have been to Western translation programmes at some well-ranked universities in [the] the UK and the USA. It is noteworthy that these graduates can provide training sessions inside the Saudi translation field to improve the translation quality level in both markets and the academic field. For

> training sessions, experts need to be recruited so that they can make use of efficient translation software like CAT tools and Google translators for accurately converting languages and guiding students on the meaning of the conveyed text.

The responses to this interview question indicated that most translation degrees and other courses in Saudi Arabia focus on theories of translation. This highlighted the lack of a practical approach to the translation process. The lack of training sessions in the translation sector appeared to be a primary reason behind the poor performance of this industry, and a lack of practical courses forces students to enrol in training programmes outside the country.

5.13 Interview Question 12

Interview Question 12 asked, "What are the critical challenges that are experienced by the language translators of Saudi Arabia?" The participants' responses are listed below.

Interviewee 1 (public university instructor):

> In my view, I have felt that the lack of the correct type of translation software is the main challenge, and that has deteriorated the present condition of the language translators in Saudi Arabia. The translators are provided with very basic technologies as well as translation methods that are not quick, and they lead to a burdensome language interpretation and translation process.

Interviewee 2 (translator at a public institution):

> I…umm…personally feel that the most critical challenge for the translation market today in Saudi Arabia is the cultural differences. The difference in the culture has created problems for the Saudi Arabian workers to translate the foreign language in the correct manner. Pronunciation, as well as interpretation of the words, is different in the Western languages in comparison to the Arabic languages, and this, I think, is the main source of problems for the translator community of Saudi Arabia because they are not aware of the specific pronunciation of the Western words.

Interviewee 3 (private contractor working with a public legal institution):

> I strongly feel that there is an issue of [a] lack of interest in technological advancement in the Saudi Arabian translator community because I have not observed the will among the Saudi Arabian translators to adopt advanced methods that can help them to translate foreign languages in a better manner. According to my experience, I have noted that Saudi Arabian translators prefer to stick to the traditional methods of translation and are least interested in acquiring new

knowledge as well as investing some time into the application of translation technology.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

I would like to express that the Saudi Arabian translators are required to offer formal training regarding the different types of pronunciation as well as grammatical rules that are followed in the different types of languages, such as Saudi Arabian as well as Western languages. The Saudi-based translator community of interpreters, as well as language experts, is not aware of the details as well as the minute points of concern associated with the translation process as well as pronunciation of the Western words, which makes it challenging [to] attain a successful translation process.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

According to my personal experience, I have seen that there are gender differences in the Saudi Arabian community that has caused a critical challenge for the translators to understand the different types of linguistic terms in a collective and collaborative manner. I have observed that the females are not comfortable interacting with the male translator, and this creates a knowledge gap between the translating professionals. Moreover, female translators are provided fewer chances to translate the Arabic piece of text as they are considered less knowledgeable and professional in comparison to males.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

As per my personal perspective, I believe that the translation industry of Saudi Arabia is experiencing challenges in terms of a lack of capital investment towards the purchasing of advanced linguistic databases as well as electronic data repositories that provide information about the updated vocabulary as well as terms in the current grammatical structure of the foreign languages. I feel that the language, as well as translation institutions of Saudi Arabia, needs to focus on the implementation of the translation data repositories in order to [hasten] the process of data translation as well as enhance the economic potential of the translation industry of Saudi Arabia.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

In my view, I believe that a translator cannot work in a professional manner without the inclusion of computer devices. Saudi Arabian translators are not having enough knowledge regarding the use of computer technology for translating the Arabic piece of text into the targeted foreign language. Furthermore, I also believe that the educators are not focusing on the professional

> requirements of the translation graduates in order to enhance the sense of professionalism among the emerging translator community.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> I believe that the most [problematic] aspect of the translation market in Saudi Arabia is the lack of skill development among the translator graduates. Moreover, I have observed that there is a lack of communication-related competencies among the instructors in order to train the translation strategy of translating a specific Arabic piece of text into multiple foreign languages. Therefore, the scope of translation [should] be [increased] from a single language to multiple foreign languages in order to avoid the challenge of low skill development.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> I feel that the teaching ideology of the trainers in the translation industry is not common, and this leads to the challenge of developing less professionally skilled translators. The trainers are not able to adopt a singular and a combined ideology for training the translator graduates, and therefore the graduates become confused in understanding the details of the translation process.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> I personally feel that there is a need to launch graduate training programmes for the translators of Saudi Arabia. The Saudi-Arabia-based translation market experiences challenges in terms of the level of professional training programmes. It will help them to resolve the misconceptions about the translation process. Implementation of the training programmes will also help to counter the challenge of a low level of bilingual competency among the translator community of the Saudi Arabian translation market.

Based on the above responses, the main challenge to efficient translation in the Saudi Arabian market is a lack of innovative translation software in the translation community. Furthermore, the translation sector reportedly experiences challenges in terms of cultural and gender differences in Saudi Arabian translation companies, and there is a lack of professional training for university graduates seeking to become translators.

5.14 Interview Question 13

Question 13 asked, "What improvements can be made in the current language translation process in Saudi Arabia?" The participants' answers to this final interview question are given below.

Interviewee 1 (public university instructor):

> I personally believe that the introduction of computer-aided translation, abbreviated as the CAT tool, has improved the translation proficiency of organizations as well as institutions in Saudi Arabia.

Interviewee 2 (translator at a public institution):

> I feel that there is a need for the establishment of translator training programmes within the Saudi Arabia language and translation institutions [in order to] increase the skills of the translators in translating the typical piece of Arabic texts.

Interviewee 3 (private contractor working with a public legal institution):

> In my view, I feel that the only thing that can improve the current condition of the Saudi Arabian translation market is the implementation of advanced translation software such as Trados Studio as well as incorporated into a translation website as a set of online CAT tools which can help translators to enhance their translation competence in more than one language.

Interviewee 4 (public sector, certified to work in Saudi translation industry):

> According to my personal opinion, I feel that online graduate programmes [should be] required to […] improve the professionalism as well as language interpretation and translation competence among the graduates in the Saudi Arabian translation institutions.

Interviewee 5 (public sector, certified to work in Saudi translation industry):

> I believe that there is a need to implement training sessions for the translators and interpreters [about] identifying the grammatical differences between Western as well as Arabic pieces of texts. For improving translation efficiency, the grammatical details and rules of Saudi Arabic and foreign languages must be clearly explained to the translation graduates.

Interviewee 6 (private sector, certified freelancer in Saudi translation market):

> I believe that the use of computer systems must be increased for handling the translation process in Saudi Arabia. By improving the computer as well as technology skills among the translators, multiple pieces of texts will be translated in a short period of time and with limited efforts of the translators.

Interviewee 7 (private sector, certified freelancer in Saudi translation market):

> According to my personal belief, it can be understood that for improving the efficiency of the Saudi Arabian language translation market, it is essential to offer cultural training to graduate translators. This will help the emerging translators in identifying the minute cultural details as well as word pronunciation styles that create differences within the Saudi Arabian and foreign languages.

Interviewee 8 (private sector, certified language service provider in Saudi language services industry):

> For improving the effectiveness of the translation process of the Saudi Arabian institutions, it is essential to enforce a collective work culture where the males, as well as females, are capable of having sufficient chances of interaction with each other as well as working in a collaborative manner. Further, the social stigma regarding the superiority of males over females [should] also […] be reduced.

Interviewee 9 (private sector, certified language service provider in Saudi language services industry):

> For making improvements in the translation process of the Saudi Arabian language institutions, there is a need to enhance the family of the translator with the software as well as translation programmes, as translations are not technically trained for handling as well as operating the language translation and interpretation software.

Interviewee 10 (certified translator, specialized in public-sector documents for applicants):

> I think that the installation of the computer-mediated communication [CMC] systems is highly effective for raising the language-translation standards of Saudi Arabia. The use of CMC will help in the effective sharing of the language and vocabulary-related information between the translators, thus contributing to an inclusive and productive working environment.

The responses to this last interview question stressed the need to improve the technological proficiency of translators working in Saudi Arabia. Moreover, they felt that an appropriate work environment should be established that facilitates information sharing and knowledge transfer between translators.

5.15 Chapter Summary

Based on the interviews, the intention to use CAT tools was particularly influenced by international standardization in translation software and user familiarity with

information technology. If these systems were used across Saudi Arabian translation programmes and training in different languages, technological infrastructures, and translation fields, standardization could help remove barriers, such as differences in software versions and interoperability problems. It was also reported that the Saudi Arabian universities that provide translation training emphasize theory over practice, such as sociological and literary-oriented theories. By focusing on theory, Saudi Arabian translators are better able to understand the source text and produce an accurate translation. However, based on the data sample of this research, an overemphasis on theory could result in students not working enough with CAT tools. Practical translation and related skills are important for students to find employment in the Saudi Arabian translation market. To strengthen the translation process, interventions are needed that offer significant opportunities for students to learn translation and develop more efficient skills. Finally, participants generally agreed that CAT tool use should be mandatory in Saudi Arabian university translation courses so as to ensure optimal, cost-effective, credible, time-saving, and accurate translations.

Chapter 6
Quantitative Results

6.1 Introduction

This chapter represents a link between the proposed model and hypotheses described in Chapter 4 and the analysis of the results presented in Chapter 5. It describes in detail the methodology used in this research and is divided into the following major sections: characteristics of the sample used in this study (see Section 6.2), the model used to analyse the data (see Section 6.3), the evaluation of the model (see Section 6.4), and a summary of the chapter (see Section 6.5).

6.2 Sample

The main sample comprised Saudi Arabian graduate and undergraduate students studying English and translation at different academic levels at different universities inside and outside of Saudi Arabia. This produced a response rate of 47%. Table 6.1 gives a profile of the sample of 189 respondents.

Table 6.1 Sample Characteristics

Variable	Frequency	Percent
Gender		
Male	178	94.2
Female	11	5.8
Total	189	100
Study Level		
Bachelor's	161	85.2
MA	18	9.5
PhD	10	5.3
Total	189	100
Number of Courses		
1 Course	90	47.6
2 Courses	23	12.2
3 Courses	17	9.0
4 Courses	11	5.8
5 Courses	48	25.4
Total	189	100
Years of Translation Experience		
1 Year	110	58.2
2 Years	26	13.8
3 Years	16	8.5
4 Years	10	5.3
5 Years	9	4.8
6 Years	2	1.1
7 Years	16	8.5
Total	189	100

The great majority of participants who completed the questionnaire were men (178, 94.2%) compared to only 11 women (5.8%). Regarding participants' education level, 161 (85.2%) were working on their bachelor's degree, 18 (9.5%) were working on their master's, and 10 (5.3%) were working on their PhD. Regarding the number of translation courses in their study plan, 90 participants (47.6%) had one course, 23 participants (12.2%) had two courses, 17 participants (9%) had three courses, 11 participants (5.8%) had four courses, and 48 participants (25.4%) had five courses. Regarding years of field experience, 110 participants (58.2%) had one year, 26 participants (13.3%) had two years, 16 participants (8.5%) had three years, 10 participants (5.3%) had four years, eight participants (4.8%) had five years, and 16 participants (8.5%) had six years of experience.

The overall findings, as presented in Table 6.1, show that the proportion of female students was very low compared to the number of male students in the sample. Regarding education level, the majority of students in the sample were in the process of completing a bachelor's degree, while the proportion of PhD students was very low. Furthermore, most of the students had only enrolled in one or two translation courses, while only a few had enrolled in four or five. Only 16 participants out of 189 reported having six years of field experience. In contrast, most of the participants reported having only one or two years of experience.

Regarding the above limitations, I took each group as a case. For example, BA students were male only due to limited access to female schools in Saudi Arabia, especially in terms of the same data pool in the English department at Prince Sattam University. The request to collect data from female students was rejected. Second, MA students were studying at pre-MA and MA translation programmes at Leeds University in the United Kingdom and Kent State University in the United States. The third group of PhD participants were studying in PhD programmes at Leeds University and other U.K. universities.

6.3 Model Employed to Analyse the Data

Structural equation modelling through SmartPLS (Version 3.3.2) software was used to test the proposed model. Two-step structural equation modelling was used, as it is widely recommended in social research (e.g., Hair et al., 1998; Reinartz et al., 2009; Schumacker and Lomax, 2004). It consists of analysing the measurement model first, followed by the structural model. There are five significant steps in structural equation modelling, namely specification of the model, identification, parameter estimation, model evaluation, and modification of the model. In the first step, the hypotheses of the study are defined, and in the second step, the model is analysed as under-identified,

over-identified, or just-identified. The third step evaluates the parameters of the model, and the fourth step checks the fit of the model to the data. Finally, in the last step, adjustments are made to enhance the fit of the data (Civelek, 2018).

The significant advantage of using structural equation modelling is that it is more powerful than regression analysis models and helps determine the relationship shared between the study variables. Furthermore, while the regression equation model only provides information about the association between the dependent and independent variables, structural equation modelling also highlights errors occurring in the measurement process (Civelek, 2018). Therefore, the use of this model in the study has helped enhance the quality of the results.

6.4 Evaluation of the Measurement Model

The measurement model was evaluated for its unidimensionality, reliability, and construct validity (i.e., convergent and discriminant). The constructs of this study were hypothetical or latent variables that could not be directly observed by the researcher but could be inferred using some other research methodology indicators. Hence all constructs were operationalized using multiple items that captured the latent variables in order to increase reliability and ensure that measurement errors could be minimized. Attitude towards using translation technology (ATT), for example, was captured using four items (i.e., four questions), behavioural intention (BI) was captured using four items, and three items were used to capture the effort expectancy (EE) construct.

No previous research has been designed to study the proposed context, using the UTAUT model for the use of technology during the translation process in Saudi Arabia. Most previous research studies related to the use of translation technology by Saudi Arabian translators were based on areas other than the translation market. Thus, constructs were operationalized using a “modified measurement” of existing scales from other disciplines that have been demonstrated to have strong validity and reliability. All item statements were modified to accommodate the context of using CAT tools. The statements were also modified to accommodate the context of an applied translation programme in relation to the Saudi Arabian translation market. All constructs were operationalized using multiple reflective indicators (see Chapter 7) that captured the latent variables. The relevant variables for this study could not be measured by themselves, so I had to use other items to measure them.

Latent variables or constructs are assessed by observable measures or indicators (Hair et al., 1998). Generally, the measurement model describes the relationship between these observable indicators and the latent construct. The relationship between the

indicators and their construct in the measurement model can be either reflective or formative in nature. Within reflective or conventional indicators, a set of items is chosen from a collection of items related to the construct of interest. For reflective (effect) indicators, the latent variable (i.e., construct) causes the observed or measured variables. In formative models, the indicators define the latent variable. In other words, observed variables are assumed to cause the latent variable.

6.4.1 Unidimensionality

The unidimensionality of a construct is an assumption underlying the calculation of reliability (Spotts, 2014). Unidimensionality refers to the process of measuring the quality of a variable or attribute with the help of a single construct. To test the reliability of the items, the researcher needs to check the unidimensionality of the items initially. Unidimensionality is tested with the help of item loading values. Item loading quantifies the extent to which the variable is related to a given construct. If all the items fulfil the assumption of unidimensionality, then reliability analysis can be performed. A high score of items under unidimensionality indicates the high quality of the items.

Reliability measures such as internal consistency do not ensure unidimensionality but assume its existence. Hair et al. (1998) suggested performing unidimensionality tests for all multi-indicator (i.e., multiple items or constructs before running reliability tests). Generally, the unidimensionality of a construct is achieved when items have an acceptable item loading equal to or higher than 0.5 (Norhayati et al., 2021) or, under another interpretation, higher than 0.6 (Ahmad et al., 2016). Item loading is done for all the variables on their constructs. For example, the items for the attitude construct were 0.809, 0.754, 0.823, and 0.723 for ATT1, ATT2, ATT3, and ATT4, respectively (see Table 6.2)—all above 0.7, confirming the unidimensionality of all constructs. As the value of all the items presented in Table 6.2 has an item loading score greater than 0.7, this proves that the assumption of unidimensionality is fulfilled, and the quality of all of the items considered in the study was thus considered to be high.

Table 6.2 Unidimensionality of Constructs

Construct	Item	*M*	*SD*	Item Loading	*t**	Cronbach's Alpha	Composite Reliability	AVE
Attitude	ATT1	0.809	0.807	0.809	22.153	0.782	0.860	0.606
	ATT2	0.754	0.752	0.754	12.746			
	ATT3	0.823	0.823	0.823	28.280			
	ATT4	0.723	0.721	0.723	13.550			
Behavioural Intention	BI1	0.791	0.038	0.791	21.021	0.805	0.872	0.631
	BI2	0.789	0.042	0.789	18.702			
	BI3	0.839	0.041	0.839	20.648			

	BI4	0.757	0.052	0.757	14.487			
Effort Expectancy	EE1	0.745	0.144	0.745	5.156	0.710	0.827	0.616
	EE2	0.757	0.139	0.757	5.438			
	EE3	0.848	0.095	0.848	8.965			
Facilitating Conditions	FC1	0.733	0.081	0.733	9.071	0.809	0.863	0.558
	FC2	0.754	0.082	0.754	9.233			
	FC3	0.833	0.052	0.833	15.871			
	FC4	0.706	0.101	0.706	6.954			
	FC5	0.703	0.110	0.703	6.374			
Performance Expectancy	PE1	0.821	0.038	0.821	21.813	0.695	0.830	0.619
	PE2	0.768	0.060	0.768	12.729			
	PE3	0.771	0.052	0.771	14.825			
Self-Efficacy	SE1	0.893	0.036	0.893	24.714	0.787	0.858	0.670
	SE2	0.822	0.072	0.822	11.417			
	SE3	0.733	0.087	0.733	8.417			
Social Influence	SI1	0.862	0.025	0.862	34.783	0.726	0.844	0.643
	SI2	0.781	0.062	0.781	12.612			
	SI3	0.760	0.064	0.760	11.809			

* Significant at 0.000.

6.4.2 Reliability and Validity

Reliability is an indicator of a measure's internal consistency; that is, it represents the extent to which each indicator of a construct converges on some common meaning. Validity is the extent to which a score truthfully represents a concept or measures what it is supposed to measure (Babin and Zikmund, 2016). Reliability does not ensure validity, since a construct can have an unacceptable convergent validity and still be reliable. However, reliability is a condition for validity. That is, if a measure is not reliable, then it cannot be valid (Hair et al., 1998).

Generally, reliability can be assessed at two levels: item reliability and construct (composite) reliability (Fornell and Larcker, 1981; Hair et al., 1998). Item reliability refers to the consistency observed between the items of a study. It highlights how the different items considered in the study measure a variable. One technique for assessing item reliability is Cronbach's alpha. If the Cronbach's alpha is less than 0.7, it shows that the data on which the test is based is not reliable and is less credible. Construct (composite) reliability, by contrast, is the level of consistency observed internally (Tan and Nah, 2016). It represents the aggregate reliability of two or more similar items within a construct. Reliability of at least 0.7 is required for a construct to be reliable.

As noted above, Table 6.2 presents the results of these two measures of reliability, Cronbach's alpha and composite reliability. A Cronbach's alpha of at least 0.60 reflects acceptable reliability (i.e., internal consistency), where reliability is stronger when the value is greater than 0.80 (Devellis, 2012; Waldeck, 2014). The Cronbach's alpha values ranged from 0.695 to 0.809, showing evidence of internal consistency. Furthermore, the composite reliabilities for all constructs were above the threshold of

0.7, ranging from 0.827 to 0.872. All item loadings corresponding to all constructs were above the 0.7 cut-off point and significant at the 0.05 level.

6.4.3 Convergent Validity

Convergent validity reflects the extent to which conceptually similar measures of the same construct are closely related (de Vet et al., 2011; Streiner et al., 2015). Convergent validity, like reliability, is an essential aspect of analysing the overall quality of the study items and helps in providing evidence about the quality of the results. In analysing quantitative data, it is imperative to measure the convergent validity of the data to ensure its credibility. Convergent validity was measured in the present study with the help of average variance extracted (AVE), which helps in predicting the overall variance in relation to the variance of errors. The AVE measures the amount of variance accounted for by the construct in relation to the amount of variance accounted for by measurement error (Fornell and Larcker, 1981; Hair et al., 1998). With an AVE greater than 0.50, a construct demonstrates convergent validity. Table 6.2 shows that the AVE values ranged from 0.558 to 0.670, exceeding the 0.50 threshold. Table 6.2 further shows that the self-efficacy variable had the highest convergent validity, at 0.67, while the facilitating conditions construct had the lowest convergent validity, at 0.55. The value of convergent validity of all constructs was over 0.5, which suggested a high validity for these constructs.

5.4.4 Discriminant Validity

Discriminant validity tests whether concepts or measurements that are not supposed to be related are actually unrelated. It reflects the extent to which the measures of different constructs are distinct from each other. Discriminant validity is a subtype of construct validity in which the variables or measures have zero or no association with each other. In this context, discriminant validity for the study variables is tested to examine if the measures do not correlate with unrelated and dissimilar variables (Furr, 2021). Fornell and Larcker (1981) suggested that to ensure discriminant validity, the AVE for each construct (see Table 6.3) should be greater than the squared correlations (that is, the shared variance) between one construct and all other constructs in the model. Table 6.3 shows a high discriminant validity between each pair of constructs; all average variances extracted for every pair of constructs were higher than their squared correlations. To illustrate, attitude towards using translation technology demonstrated a higher discriminant validity than all other constructs. The AVE for translation technology was 0.778, while the shared variance between translation technology and all other constructs was smaller than 0.778, ranging from 0.059 to 0.592, indicating discriminant validity. Similarly, the AVE for social influence was 0.802, while the shared variance between social influence and all other constructs was

smaller than 0.902, ranging between 0.292 and 0.520, indicating discriminant validity. As each construct was more strongly related to its own items than to other items in other constructs, there was strong evidence of discriminant validity. To conclude, the constructs in the measurement model demonstrated unidimensionality, validity (convergent and discriminant), and reliability (Cronbach's alpha and composite reliability). With this confirmed, the structural model can be evaluated.

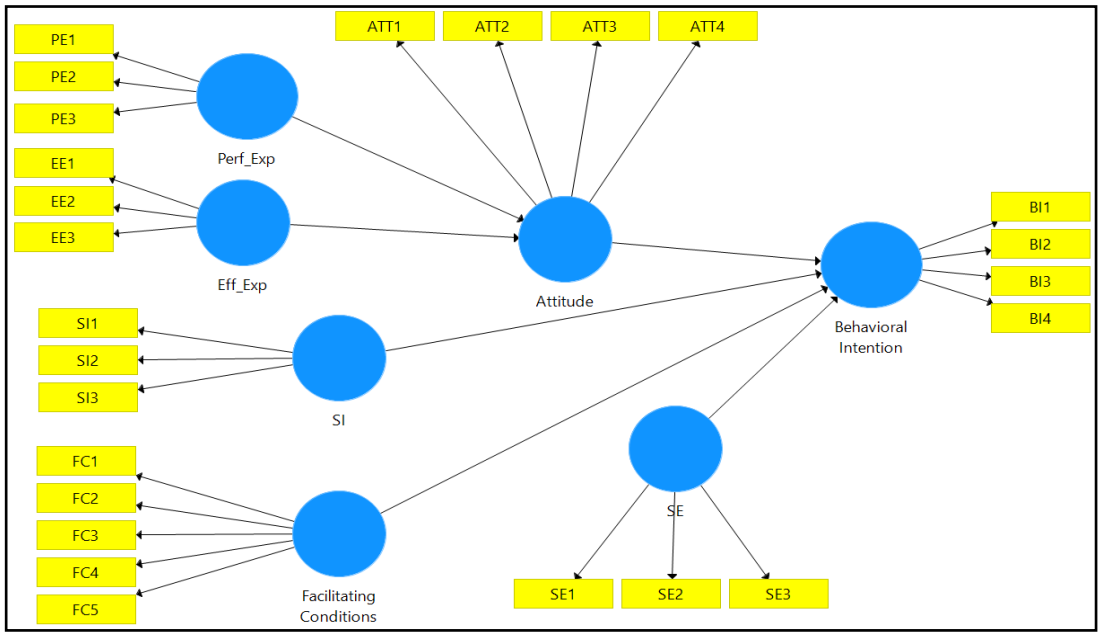
Table 6.3 Discriminant Validity

	ATT	BI	EE	FC	PE	SE	SI
ATT	**0.778**						
BI	0.592	**0.794**					
EE	0.129	0.266	**0.785**				
FC	0.059	0.273	0.520	**0.747**			
PE	0.551	0.528	0.403	0.164	**0.787**		
SE	0.511	0.436	0.471	0.368	0.440	**0.819**	
SI	0.292	0.445	0.520	0.471	0.432	0.471	**0.802**

Note. ATT = attitude towards CAT tools, BI = behavioural intention, EE = effort expectancy, FC = facilitating conditions, PE = performance expectancy, SE = self-efficacy, and SI = social influence. Diagonal numbers in bold represent the AVE for each construct. Other entries represent the squares of the correlations (shared variance) among the constructs. Diagonals should be greater than off-diagonals to demonstrate discriminant validity.

6.4.5 The Structural Model

After evaluating the measurement model in the first step, the structural model was assessed. The proposed structural model consists of seven constructs (represented by the blue circles in Figure 5.1) and 25 items (ATT1-ATT4, PE1-PE3, EE1-EE3, SI1-SI3, FC1-FC5, SE1-SE3, and BI1-BI4), i.e., observed variables (see Figure 6.1 and Table 6.4), capturing the relationships between the constructs and the corresponding path labels.



Perf_Exp = performance expectancy, BI = behavioural intention, Eff_Exp = effort expectation, SI = social influence, ATT = attitude, FC = facilitating condition, SE = self-efficacy.

Figure 6.1 Proposed Structural Model.

6.4.6 Hypothesis Testing

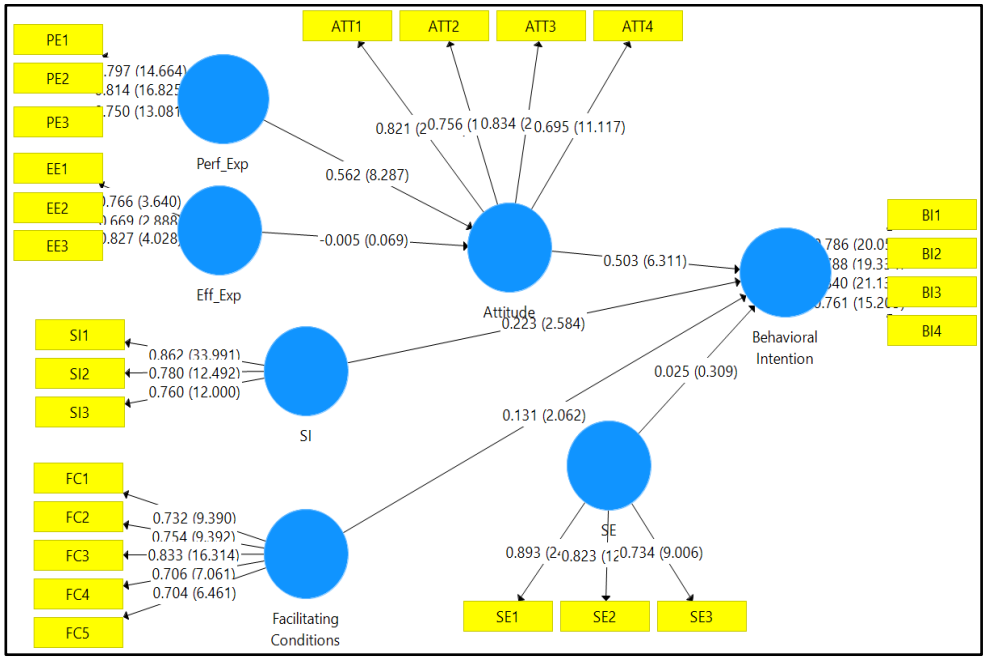
To evaluate the proposed model and hypotheses, partial least square utilizing SmartPLS (Version 3.3.2) was used. Partial least square uses a statistical procedure, called bootstrapping, that resamples a single dataset to create many simulated samples (Ringle et al., 2022). Bootstrapping is a nonparametric procedure (i.e., a procedure that relies on no or few assumptions about the shape or parameters of the population distribution from which the sample was drawn). This process allows for the testing of the statistical significance of various partial least square structural equation modelling results, such as path coefficients (i.e., the magnitude or weight of the regression line or relationship between the dependent and independent variables), Cronbach's alpha, and R-squared (R^2) values (i.e., the amount of variation in the dependent variable explained by the independent variables). To ensure the stability of results, the number of subsamples should be large. For an initial assessment, one may use a smaller number of bootstrap subsamples (e.g., 500). For preparing final results, however, one should use a large number of bootstrap subsamples, such as 5,000.

Bootstrapping (using 5,000 subsamples) was employed to determine the significance level of relationships (Henseler et al., 2009). The six main (i.e., direct) hypotheses given initially in Chapter 4 are presented in Table 6.4. Four of the six were significant in the hypothesized direction.

Table 6.4 Hypotheses

Path	No.	Hypothesis
1	1	There is a significant positive relationship between performance expectancy and attitude toward using translation technology
2	2	There is a significant positive relationship between effort expectancy and attitude toward using translation technology
3	3	There is a significant positive relationship between attitude toward using translation technology and behavioural intention to use that technology
4	4	There is a significant positive relationship between social influence and behavioural intention to use translation technology
5	5	There is a significant positive relationship between facilitating conditions and behavioural intention to use translation technology
6	6	There is a significant positive relationship between self-efficacy and behavioural intention to use translation technology
7	7a	Attitude toward using translation technology mediates the relationship between performance expectancy and behavioural intention to use translation technology
8	7b	Attitude toward using translation technology mediates the relationship between effort expectancy and behavioural intention to use translation technology

Standardized path coefficients and *t*-values were used to test the corresponding hypotheses. A *t*-value measures the size of the difference relative to the variation in sample data (Ringle et al., 2022). The *t*-value is thus the calculated difference represented in units of standard error (Hair et al., 1998). The greater the magnitude of *t*, the greater the evidence against the null hypothesis. Table 6.5 and Figure 6.2 summarize the hypotheses and their corresponding standardized path coefficients and *t*-values. The positive or negative sign indicates the directionality of the relationships.



Perf_Exp = performance expectancy, BI = behavioural intention, Eff_Exp = effort expectation, SI = social influence, ATT = attitude, FC = facilitating condition, SE = self-efficacy.

Figure 6.2 Proposed Structural Model with Bootstrapping Results.

Table 6.5 Structural Model Standardized Path Coefficients and *t*-Values

Path	Hypothesis	Coefficient	*t*	*p*	Hypothesis Supported?
1	H1: PE → ATT	0.578	8.051	0.000	Yes
2	H2: EE → ATT	-0.050	0.605	0.545	No
3	H3: ATT→ BI	0.405	4.625	0.000	Yes
4	H4: SI → BI	0.192	2.288	0.022	Yes
5	H5: FC → BI	0.156	2.197	0.028	Yes
6	H6: SE → BI	0.033	0.364	0.716	No

Hypotheses 1 and 2 concern the factors determining attitude towards using translation technology. In agreement with Hypothesis 1, the results showed a significant positive relationship between performance expectancy and attitude, indicating performance expectancy was a strong predictor of attitude (t = 8.051, p = 0.000). In contrast, there was no significant positive relationship between effort expectancy and attitude (t = 0.606, p = 0.545), and thus Hypothesis 2 was not supported.

Hypotheses 3–6 were related to the factors determining intention to use translation technology. Hypothesis 3 proposed a significant positive relationship between attitude toward and intention to use translation technology. This relationship was indeed found to be significant (t = 4.625, p = 0.000), supporting Hypothesis 3. Similarly, Hypotheses 4 and 5 were supported by a significant positive effect from social influence (t = 2.288, p = 0.022) and facilitating conditions (t = 2.197, p = 0.028).

Hypothesis 6 proposed a significant positive relationship between ability (self-efficacy) and intention to use translation technology, but the results showed no such relationship.

6.4.7 Testing Mediation

Hypotheses 7a and 7b were related to testing the mediating role of attitude toward translation technology between performance expectancy, effort expectancy, and intention to use translation technology, i.e., behavioural intention (see Table 6.4). To test the mediating hypotheses, the study adopted a popular procedure proposed by Baron and Kenny (1986) and revisited by other scholars (e.g., Nitzl et al., 2016; Zhao et al., 2010). The test showed mixed results for the two hypotheses (see Tables 6.6 and 6.7).

Table 6.6 Structural Model Standardized Path Coefficients and *t*-Values

Mediated relationship through attitude	Indirect Effect			Direct Effect I	Total Effect	Mediation
	IND à M (a)	M à D (b)	(a X b)			
H7a PE à ATT à BI	0.578^{***}	0.405^{***}	0.234^{***}	0.208^{**}	0.442^{***}	Partial
H7b EE à ATT à BI	-0.050^{NS}	0.405^{***}	0.020^{NS}	-0.082^{NS}	-0.102^{NS}	No Mediation, No Direct Effect

Note. IND = Independent, M = Mediator, D = Dependent, NS = Not Significant, $*p < 0.05$, $**p < 0.01$, $***p < .001$.

Table 6.7 R-Squared Results

Dependent	R-Squared
Attitude	0.324
Behavioural Intention	0.468

Regarding Hypothesis 7a, performance expectancy was found to have a significant direct and indirect (through attitude) effect on intention to use translation technology. This evidence supports a partial mediating effect of attitude towards translation technology. However, in Hypothesis 7b, effort expectancy had no direct or indirect effect on behavioural intention to use translation technology. The relationship between effort expectancy and attitude towards translation technology was not significant (path coefficient = -0.050, $p > .05$), and neither the indirect effect (path coefficient = 0.020, $p > 0.05$) nor the direct effect (path coefficient = -0.082, $p > 0.05$) were significant. This suggested that effort expectancy did not directly or indirectly affect behavioural intention to use translation technology and did not directly affect attitude.

6.5 Chapter Summary

The CAT tools typically employed by translators, translator educators, and translation companies in Saudi Arabia are quite limited compared to their counterparts in Western countries. To better understand this issue, the researcher employed a mixed-methods approach to gather and analyse quantitative and qualitative data. First, this chapter described the questionnaire sample (see Section 6.2). Typically, participants were male, were pursuing a bachelor's degree, had not taken many translation courses, and had little professional work experience in the translation field. After that, the chapter explained the model employed to analyse the quantitative results (see Section 6.3) and how that model was evaluated (see Section 6.4). The study employed structural equation modelling due to its advantages over regression analysis in terms of identifying relationships between variables and revealing errors in the measurement process (Civelek, 2018). The next chapter presents a detailed discussion of the training sessions and their results.

Chapter 7
Training Observation Results

7.1 Introduction

Training sessions were conducted with the first 35 people who completed the main questionnaire and were motivated to participate in these sessions. A follow-up questionnaire was taken by respondents who had already completed the main questionnaire. The researcher recorded participant observations during the training sessions. This chapter discusses the findings of the training session observations. Section 7.2 gives a brief theoretical background explaining the connection between attitudes and CAT tool adoption. This is followed by explaining the rationale in Section 7.3 for collecting observation data. After that, Section 7.4 describes the questionnaire, and Section 7.5 describes the constructs. Next, Section 7.6 outlines the training sessions, Section 7.7 describes the CAT tool employed in those sessions, Section 7.8 describes the site where data were collected, Section 7.9 describes the participants involved in this portion of the study, Section 7.10 clarifies the role that teachers played in the training sessions, and Section 7.11 lists the ethical considerations for this type of data collection. The chapter then describes the qualitative data analysis (see Section 7.12), including the three main themes that were generated from the data: steps in a translation project and opportunities to use CAT tools (see Section 7.12.1), familiarity with CAT tools and obstacles to using CAT tools in practice (see Section 7.12.2), and steps needed to improve translation services in Saudi Arabia (see Section 7.12.3). After that, the chapter examines the quantitative data (see Section 7.13). This is followed by a summary of the chapter and concluding thoughts (see Section 7.14).

7.2 Using TAM to Explain How Attitudes Determine CAT Tool Adoption

The technology acceptance model (TAM), developed by Davis et al. (1989), is a widely used and influential model in the field of information systems, technology, and services. It has been fully validated to predict users' acceptance of new technologies. TAM extended the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980) by introducing two main factors referred to as "perceived usefulness" and "perceived ease of use". These two factors act as substitutes for many of TRA's attitude measures. They are postulated to determine an individual's intention to use a technology-based system and acceptance of technology to play a mediating role in actual system use. In fact, the perceived ease of use of a technology has been shown to have a measurable

impact on the perceived usefulness of that technology. In general, TAM has been shown to be able to explain up to approximately 40% of the variance in the intention to use a technology and 30% of the variance in actual system usage (Compeau and Meister, 2002).

To increase the predictive power of TAM, it is necessary to also consider the role of external variables (Davis, 1993). This is the reason that Legris et al. (2003) noted the critical importance of examining external variables as they are the ultimate driving force behind someone deciding to use a given piece of technology. In a variety of disciplines such as applied translation technology, external variables that are used to explore the effects that technology usage can have are typically differences among individuals and their circumstances, such as cognitive, personality, demographic, and situational variables (Zikmund and Miller, 1979).

Self-efficacy refers to the extent to which a particular technology has the ability to measure and take advantage of an innovation to achieve a specific task. Previous research has indicated that self-efficacy can have a positive impact on the behavioural intention to use CAT tools (Boonsiritomachai and Pitchayadejanant, 2017).

7.3 Rationale for Collecting Data through Training Sessions and Participant Observation

After administering the main questionnaire of the study, the researcher recruited 35 participants who had completed that questionnaire to take part in training sessions involving a CAT tool. This made it possible to gather qualitative data from the researcher's observations that would complement the quantitative questionnaire data. According to Bernard (1994), there are five reasons for including participant observation in cultural studies, four of which increase the study's validity:

> Being on-site over an extended period of time familiarises the researcher with the community, enabling participation in sensitive events to which he or she would not otherwise be asked.
>
> The observer presenting themself as a trainer rather than an observer, in case 'reactivity' causes people to act in a particular manner when they are aware they are being observed.
>
> Observation assists the researcher in constructing questions that make sense in the local language or are culturally relevant, the language and culture of Saudi Arabia being the focus of these workshops.
>
> The researcher will get a better idea of what is going on in the culture, which gives one's interpretations of the observation greater credibility.

The third point was particularly important given the paucity of relevant research in an Arabic-language (and specifically Saudi Arabian) context. Kawulich (2005, p. 2) stated that education research has employed participant observation cards or participant observation as a way to collect information for qualitative purposes. Qualitative methods of data collection, such as observation and document analysis, have been included under the umbrella term of ethnographic methods. During data collection for the present study, the researcher observed training sessions and gathered observation cards to report participants' reactions to using a CAT tool. The information collected was used to assess the participants' background in using CAT tools and their acceptance of these tools. Topics of interest included new terminology, such as translation memory, machine translation, and CAT tools; whether the participant intended to use translation technology in the future; whether the participant accepted using CAT tools after the training session; and whether the participant asked about the meaning of any terms used in the questionnaire.

7.4 Questionnaire

A questionnaire was conducted to survey the opinions of CAT tool users. The questionnaire was based on the pre-tested questions presented in the original UTAUT model. The respondents were required to meet the following inclusion criteria to fill out the questionnaire:

1. The participant must be a Saudi Arabian student who would like to work as a professional translator using technical translation skills.
2. The participant must have at least a bachelor's degree (including master's degree and doctoral degree holders) and academic translation experience within their educational level.

In addition to these two main inclusion criteria, students were required to have a baseline of translation competencies and translation technology skills, given that the suggested model in this research is not sufficient to identify the best model to adopt in Saudi Arabian translation fields. The research design of this study involved comparing differences in quantitative responses between two different groups. This was done in order for the findings to be aligned with the existing literature and to provide a statistical basis for different relationships within the proposed framework. The UTAUT was used as a model to analyse the data through the lens of certain constructs.

This study aimed to demonstrate the positive impact of behavioural intention on translation technology usage in Saudi translation education, translation training, and the translation market. For this reason, the study was guided by four determinants (constructs) of the intention to use new technology. These constructs were

performance expectancy, effort expectancy, social influence, and facilitating conditions. These four chosen constructs were introduced by Venkatesh et al. (2003), who claimed they would "play a significant role as direct determinants of user acceptance and usage behaviour" (p. 447). In addition to these four constructs, it is also important to take into account the significant moderating influences of experience, voluntariness, gender, and age, which are considered integral features of the UTAUT (Venkatesh et al., 2003, p. 67). Each of the four constructs of performance expectancy, effort expectancy, social influence, and facilitating conditions is explained below.

The first construct, performance expectancy, has been defined as "the degree to which the user expects that using the system will help them to attain gains in job performance" (Venkatesh et al., 2003, p. 447). In other words, this construct measures how satisfied a user is with a CAT tool after using it for translation as well as the extent to which that technology is perceived to help the user to translate efficiently and competitively in a local or global context. Venkatesh et al. (2003) integrated five concepts from various models into the construct of performance expectancy. These concepts are perceived usefulness, extrinsic motivation, job-fit, relative advantage, and outcome expectations.

The second construct, effort expectancy, can be defined as "the degree of ease associated with the use of the system" (Venkatesh et al., 2003, p. 450). In other words, it measures how easy or difficult a user expects it to be to use a given piece of translation technology in practice.

The third construct, social influence, can be defined as "the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003, p. 451). This construct is considered the third and last direct determinant of the behavioural intention to use a technique or technology in the UTAUT model (Venkatesh et al., 2003, p. 451). Social influence has three main components, which are referred to as the subjective norm, social factor, and image. Each of these components demonstrates that the social environment has a substantial influence on the way people act, including in the translation industry (Venkatesh et al., 2003).

Unlike the three previous constructs, the fourth construct, facilitating conditions, is a direct determinant of the actual use of technology. It is defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of a system (Venkatesh et al., 2003). In the context of this study, an example of facilitating conditions would be the infrastructure and resources offered at Saudi Arabian universities, such as a central translation training facility. This

construct is based on three components: perceived behavioural control, facilitating conditions, and compatibility. Each of these constructs is operationalized to include aspects of the technological and/or organizational environment that are designed to remove barriers.

The four constructs described above could help make the Saudi Arabian translation market more efficient, effective, and competitive at the local, regional, and global levels. With that goal in mind, the present study focused on the UTAUT features of experience and voluntariness. The experience of the Saudi Arabian participants was estimated based on the highest academic degree in translation that they had achieved. Its mandatory variables stand for the participant's background in translation and expertise in both traditional and modern translation methods (i.e., digital technology). Voluntariness was based on the participants' willingness to use translation technology despite its exclusion from their BA translation programme.

7.5 Constructs

The present study explored the potential advantages of incorporating CAT tools into the translation pedagogy at Saudi Arabian universities. An analysis of the relationship between translation teachers' opinions and professional translation experience in the Saudi Arabian language industry is expected to help narrow the gap between current pedagogical practices and actual market needs. This and similar efforts will set the stage for standardization of the translation process in education and business, creating a more suitable environment for novice translators to work in the field, encouraging more professional competition between Saudi Arabian translation service providers and translation training programmes, and increasing the quality of translation as a product. There were four main factors and methods in the intervention steps that informed the design of the study.

The first factor was the training conducted with commercial translation software, such as SDL Trados Studio, or free open-source CAT tools and translation technology, such as MateCat or SmartCat. Using this technology to enhance translation performance in Saudi Arabian university programmes and the translation industry would help translators meet the international standards recommended by ISO 17100:2015, which in turn would make it easier to compete in the global market for language services.

The second factor was the cultural and demographic differences between Saudi and non-Saudi professional translators working in the Saudi Arabian market. For example, medical or legal translators can be reasonably expected to be involved with a number

of institutions except when a translator signs a government contract. In this case, the translator is not allowed to involve non-government institutions.

The third factor was the method for determining whether the cultural and demographic differences were significant.

The fourth factor was determining whether there were significant differences after the training that would encourage the adoption of CAT tools in professional translation activities. The aim of this method was to potentially reveal a cause-and-effect relationship that would support or reject the research hypotheses.

The study found that the adoption of CAT tools was limited in Saudi Arabian university translation programmes and had not been extensively carried over to the Saudi Arabian translation industry to improve practices in the field. This lack of awareness and use of CAT tools in translation education and business poses a serious obstacle to increasing the competitiveness of the Saudi Arabian translation market. The present study sought to propose workable solutions that would encourage the use and acceptance of CAT tools in university programmes as well as the industry in general. These solutions were based on an examination of the effects of CAT tool exposure on novice translators, i.e., university students majoring in translation.

The study recommends examining the translation markets of different Western countries—due to the larger amount of research in these countries—validating recent translation software to apply the UTAUT (discussed in detail later in this chapter) after the intervention, and adapting Western countries' translation processes to the Saudi market as a standard requirement for freelance translators and language service providers. The intervention was also tested in a pilot study before the main training course was conducted.

The UTAUT was selected as the model for this research because it was developed through a review and consolidation of the constructs from eight different models (the theory of reasoned action, the technology acceptance model, the motivational model, the theory of planned behaviour, a combined theory of planned behaviour/technology acceptance model, the model of personal computer use, diffusion of innovations theory, and social cognitive theory). More specifically, this study employed the UTAUT 2 because it was the latest version of this model at the time of the study.

Funding and participants' availability were anticipated as potential limits to this study. One issue is that participating in relevant organizations in Saudi Arabia requires finding continuing workplace training on software and recent experience in the field, given that techniques and technology change over time.

7.6 Structure of the Training Sessions

Before participating in the training sessions (the intervention), participants filled out the main questionnaire, which for them acted as a pre-intervention questionnaire. This step allowed the researcher to decide whether a given person was eligible for the training sessions, as selection was based on the students' academic history in translation. The selected students were informed about their eligibility at the end of the questionnaire and invited to sign up for the training sessions.

The intervention itself was divided into three groups, each containing six students. The three different groups were composed of BA, MA, and PhD students majoring in translation studies. Each group took three training sessions, conducted in Arabic, the participants' native language. The first session was theoretical, with the researcher introducing CAT tools to participants. The second session was used to demonstrate the way one of the CAT tools, MateCat, could be used within the translation process. Finally, in the third session, participants were allowed to put into practice what they had learned in the first and second sessions. During this final session, the researcher collected observation cards, observing the way the participants interacted with the CAT tool as well as how they engaged with each other.

After the intervention, each group was given a follow-up questionnaire. This step was carried out so that the researcher would be able to assess the effect of the intervention on students' opinions. The UTAUT was used to analyse potential relationships between the intervention and participants' answers on the questionnaire.

7.7 CAT Tool Used in the Training Sessions

There are many types of CAT tools, including commercial programmes such as SDL Trados Studio and free open-source software such as MateCat (MateCat, n.d.). Since MateCat is free for translation companies, translators, and enterprise users, it was used in this study to investigate the advantages of using CAT tools during the translation process.

7.8 Data Collection Sites

The data collection sites were located in Riyadh, Wadi-Adwasir, and the University of Leeds. Sites included translation company offices, public translation departments, and Saudi Arabian universities. The interviews took place in the interviewee's office, and students were surveyed and trained in their university classrooms or labs. All three training sessions took two hours per session for each group. For more details, see Chapter 4.

7.9 Participants

Participants who completed the main questionnaire included undergraduate Saudi Arabian students studying in the English Department at Prince Sattam Bin Abdulaziz University in Saudi Arabia as well as Saudi Arabian students in the Centre for Translation Studies and the English Language Centre at the University of Leeds in the United Kingdom. The MA/PhD group consisted of Saudi Arabian students who were planning to study in a translation and/or English graduate programme at the University of Leeds. All participants held at least a bachelor's degree in English from a Saudi Arabian university. The questionnaire for the MA/PhD group involved three different levels: (a) students on a pre-master's programme in Arabic-English translation, (b) Saudi Arabian students who were pursuing an MA in Arabic-English translation studies, and (c) Saudi Arabian doctoral students who held an MA degree from a translation or English language department in the United Kingdom or the United States.

A total of 189 participants completed the main questionnaire. The first group consisted of 131 students pursuing a BA in English Language in Saudi Arabia at Prince Sattam Bin Abdulaziz University and other non-graduate/graduate students in the School of English and Translation at the University of Leeds who did not yet have an MA. This was followed by intervention training sessions and a post-intervention questionnaire with 12 of these same students. The same post-intervention questionnaire was distributed to 25 students pursuing an MA in Arabic-English Translation and 32 researchers completing a PhD in Translation Studies at the University of Leeds.

In addition to the above participants, the researcher interviewed five translation instructors who taught undergraduate translation courses at Prince Sattam Bin Abdulaziz University and worked in the Saudi Arabian translation market. More specifically, some interviewees worked in three private-sector translation departments (in the Saudi Chamber of Trade, the Saudi Ministry of Labor, and the Saudi Ministry of Justice) and three public-sector translation departments (the King Abdullah Institute for Translation & Arabization, Alomar Office, and Vinnela).

This data collection scheme was designed to yield detailed findings in a reasonable timeframe, i.e., allowing sufficient time for the selection of participants, data collection, transcription, and analysis. To encourage more accurate responses, all questionnaires, interviews, data collection cards, and other materials were in Arabic, the participants' native language.

7.10 The Role of Teachers in this Part of the Data Collection

The translation teachers were asked to participate in an interview lasting for a maximum of 25 minutes. The researcher provided a training session for students. The researcher was allowed to observe the way students usually interacted and engaged in classroom discussions during the given training sessions.

7.11 Ethical Considerations

This study followed all relevant ethical guidelines to ensure the confidentiality and anonymity of the participants throughout data collection and analysis. A consent form was provided to all participants so that they would understand their rights and what would be expected of them if they chose to participate in the study. This information included the researcher's contact information to enable the participants to contact the researcher directly to ask questions or withdraw from the study.

The signed consent forms were stored in the University of Leeds M:drive. In accordance with the 1998 Data Protection Act, the data storage policy of the University of Leeds was strictly followed, and the material gathered from all participants was regarded as confidential. All hard copies of the completed questionnaires and interview transcripts were stored in a locked cupboard and destroyed as soon as possible through the University of Leeds confidential shredding system. Any highly confidential, confidential, or unclassified electronic information was stored in the researcher's university M:drive.

Participants were allowed to withdraw from the study in the first two weeks of the fieldwork period (the first two weeks of September in 2020). They had the option to inform the researcher of their withdrawal directly or write a note in the questionnaire. Once the results were analysed and ready to be published, the participants could no longer withdraw from the study. During or immediately after the interview, the interviewees had the option to contact the researcher to withdraw their interview data. Any such withdrawal would be brought to the notice of the supervisor. However, no withdrawal request was received from any participants.

7.12 Qualitative Data Analysis

Following DeWalt and DeWalt's (2002) guidelines for the collection of valuable observation data, the researcher took a close look at participant interactions, paying particular attention to who was talking to whom and who was having trouble making use of the translation technology that was being presented. Another element of interest were any questions that participants had about new terminology. In addition, the researcher observed who showed greater motivation to use the translation technology

that they had been introduced to as part of the study. Observed activity was quantified, on the basis that this is helpful for recalling complex events with many individuals interacting with one another because such situations tend to have a lot going on (DeWalt and DeWalt, 2002). Furthermore, DeWalt and DeWalt (2002) stressed the need for the researcher to have a "fresh eye" and be an attentive participant in dialogue, particularly when observing nonverbal expression and body language.

The researcher recorded any participant responses during the training sessions and conducted a follow-up survey. After the theory training sessions, the researcher asked participants to write down any questions they would like to ask. In alignment with the research aims and questions, three major themes were identified in relation to the observation cards:

- Steps in a translation project and opportunities to use CAT tools.
- Familiarity with CAT tools and obstacles to using CAT tools in practice.
- Steps needed to improve translation services.

From the initial request for a translation through to the final delivery, Theme 1 (*steps in a translation project and opportunities to use CAT tools*) focused on the numerous procedures and participant reactions involved in carrying out a training session. This theme was derived from the written responses given by some participants during the translation practice sessions. For example, the first participant's response described the various steps involved in this technique. This was the first time he had participated in a translation project using a translation website. Given the participants' shared background, other participants likely had similar questions.

While the first interview question gathered information about a participant's experience with translation, the second question gathered information about all the major steps involved in a translation project. The researcher had the same cultural background as the participants, which made it easier to notice social distinctions when participants posed questions. Differences could be seen based on their education level and social environment. The researcher was prepared to describe the training sessions in English and then explain them once more in Arabic and English to clarify their intent. The following are some of the written responses received from the participants before the follow-up survey:

> Participant 1: "I could not believe it is easy to use translation technology or learning how." [The participant was surprised that using and learning how to use CAT tools could be easy.]
>
> Participant 1: "I thought translation technology is just using my computer and use a Word file, but it seems not enough to be called […] translation technology."

Participant 1: “Is there any way to make PDF file to be readable access such as Word file?” [In other words, this participant was asking whether it was possible to convert a PDF file into an editable format like a Word document.]

Participant 2: “I could not believe this step will be a chance to practise how the machine translation looks like.” [This participant was expressing surprise because they did not realize that this session involved hands-on practice with CAT tools.]

Participant 2: “Can you repeat what was explained in the lecture [i.e., the training session], the new terms about translation technology or CAT tools and how to create a project? I need to have more understanding in the Arabic language please during my practice.

Participant 3: “Are you sure that we will practise how to use a professional translation website and how long it takes to start using tools to translate the text?”

Participant 3: “Please explain new terminology in a simple way by using Arabic language if you do not mind.”

Participant 4: “Using translation technology for my first time seems [like it is] creating future market [opportunities].”

Participant 4: “Is the translation memory [like how] flash memory functions, to save my translated terms for future work […]?”

Participant 5: “Is it like what Google Translate does? And no one teaches us how they create it for public, so please explain in Arabic.”

Participant 5: “Finally I will have good translation technology skills to work as a professional translator.”

Participant 6: “If it is possible to create my own translation for some text to use it in future, as using flash memory, that is a good idea.”

Participant 6: “Can you explain these sessions again in Arabic for us?”

In the following subsections, I consider each of the three themes identified above in more detail.

7.12.1 Theme 1: Steps in a Translation Project and Opportunities to Use CAT Tools

According to the stated points of view of the participating professional translators, the most important steps in the translation process were found to be translating the text, checking the quality of the translation, and the project manager delivering the final copy. The data suggested that translation students in Saudi Arabia were not aware of how to use CAT tools. Some of the responses showed that students were not sure they

should even be allowed to use this technology in future translation projects. However, the use and sophistication of CAT tools is constantly increasing in the translation industry, with public and private organizations in Saudi Arabia depending more and more on translation services. Offering more internships in language services companies would give novice Saudi Arabian translators more opportunities to use CAT tools and develop their translation technology skills. In turn, this would also lead to more Saudi Arabian teachers having hands-on experience with CAT tools once some of those novice translators become teachers. This theme was reflected in the following responses:

> Participant 1: "I could not believe it is easy to use translation technology or learning how." [The participant was surprised that using and learning how to use CAT tools could be easy.]
>
> Participant 1: "I thought translation technology is just using my computer and use a Word file, but it seems not enough to be called […] translation technology."
>
> Participant 3: "Are you sure that we will practise how to use a professional translation website and how long it takes to start using tools to translate the text?"

7.12.2 Theme 2: Familiarity with CAT Tools and Obstacles to Using CAT Tools in Practice

The training session and subsequent questionnaire prompted students to acquire translation technology skills. Students demonstrated familiarity with smartphones, iPads, and basic software, which indicated their readiness to learn how to use translation technology. They had not yet developed a familiarity with CAT tools and reflected on obstacles to their use during their time in the Saudi Arabian education system. The following responses develop this theme:

> Participant 4: "Using translation technology for my first time seems [like it is] creating future market [opportunities]."
>
> Participant 5: "Is it like what Google Translate does? And no one teaches us how they create it for public, so please explain in Arabic."
>
> Participant 6: "If it is possible to create my own translation for some text to use it in future, as using flash memory, that is a good idea."

7.12.3 Theme 3: Steps Needed to Improve Translation Services

The third and last theme analysed the steps Saudi Arabia could take to improve its translation services. The following responses develop this theme:

> Participant 3: "Please explain new terminology in a simple way by using Arabic language if you do not mind."

Participant 5: “Is it like what Google Translate does? And no one teaches us how they create it for public, so please explain in Arabic.”

7.13 Quantitative Data Analysis

Composite variables were calculated using the average values of the items in each construct. For example, the attitude composite variable (ATT) was calculated by adding ATT1 and ATT2 and dividing the sum by 4 in order to give an average for each of the four items involved. After computing the composite variables, the means for those variables were compared at a 0.05 significance level in SPSS (Version 20). Table 7.1 shows the differences between observations after training in a pre-/post-test design. The abbreviations used in the following tables are as follows: Perf_Exp = performance expectancy, BI = behavioural intention, Eff_Exp = effort expectation, SI = social influence, ATT = attitude, FC = facilitating condition, SE = self-efficacy.

Table 7.1 Group Statistics

Group	Test	*N*	*M*	*SD*	Std. Error Mean
PE	2	34	4.7647	.25332	.04344
	1	35	4.2000	.64271	.10864
EE	2	34	4.3627	.37035	.06351
	1	35	4.4571	.56061	.09476
SI	2	34	4.4412	.29268	.05019
	1	35	3.8667	.86772	.14667
FC	2	34	4.6412	.17601	.03019
	1	35	3.6229	1.13839	.19242
BI	2	34	4.8088	.23883	.04096
	1	35	3.9714	1.00873	.17051
ATT	2	34	4.6985	.20207	.03465
	1	35	4.2857	.73300	.12390
SE	2	34	4.8235	.18776	.03220
	1	35	4.1048	.72658	.12281

After checking the differences at the composite level, another level of comparison was established, testing the differences between items pertaining to each construct. The goal was to see if respondents showed differences at the individual item level after the training sessions. The following tables show the results. As an example, the PE individual items showed a significant difference after training. The significance was 0.003, 0000, and 0000 for items PE1, PE2, and PE3 respectively. Tables 7.2, 7.3, and 7.4 and the following subsections illustrate more about these contracts. In Table 7.4, equal variances were assumed for all variables.

Table 7.2 Independent-Samples T-Test

Variable	Levene's Test for Equality of Variances		*t*-Test for Equality of Means						
	F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PE_COMP	35.303	.000	4.775	67	.000	.56471	.11827	.32864	.80077
EE_COMP	7.175	.009	-.823	67	.414	-.09440	.11474	-.32341	.13462
SI_COMP	30.938	.000	3.663	67	.000	.57451	.15685	.26144	.88758
FC_COMP	122.209	.000	5.155	67	.000	1.01832	.19753	.62405	1.41258
BI_COMP	49.548	.000	4.713	67	.000	.83739	.17768	.48275	1.19204
ATT_COMP	34.125	.000	3.168	67	.002	.41282	.13029	.15276	.67287
SE_COMP	46.805	.000	5.589	67	.000	.71877	.12861	.46206	.97547

Table 7.3 Group Statistics

Variable	Test	*N*	*M*	*SD*	Std. Error Mean
PE1	2	34	4.76	.431	.074
	1	35	4.26	.852	.144
PE2	2	34	4.59	.500	.086
	1	35	3.86	1.115	.189
PE5	2	34	4.94	.239	.041
	1	35	4.49	.702	.119
EE1	2	34	4.53	.507	.087
	1	35	4.49	.887	.150
EE3	2	34	4.59	.500	.086
	1	35	4.66	.639	.108
EE4	2	34	3.97	.834	.143
	1	35	4.23	.942	.159
SI2	2	34	4.94	.239	.041
	1	35	3.63	1.140	.193
SI3	2	34	4.41	.500	.086
	1	35	3.66	1.259	.213
SI5	2	34	3.97	.834	.143
	1	35	4.31	.932	.158
FC1	2	34	4.26	.567	.097
	1	35	4.00	1.414	.239
FC2	2	34	4.94	.239	.041
	1	35	3.86	1.417	.240
FC3	2	34	4.91	.288	.049
	1	35	3.34	1.533	.259
FC4	2	34	4.76	.431	.074
	1	35	3.49	1.442	.244
FC5	2	34	4.32	.475	.081
	1	35	3.43	1.357	.229
BI1	2	34	4.91	.288	.049
	1	35	4.00	1.213	.205
BI2	2	34	5.00	.000	.000
	1	35	4.00	1.111	.188
BI3	2	34	4.79	.410	.070
	1	35	3.83	1.339	.226
BI4	2	34	4.53	.507	.087
	1	35	4.06	1.327	.224
ATT1	2	34	5.00	.000	.000
	1	35	4.49	.853	.144
ATT2	2	34	4.76	.431	.074

	1	35	4.34	.906	.153
ATT3	2	34	4.35	.485	.083
	1	35	4.29	.926	.156
ATT4	2	34	4.68	.475	.081
	1	35	4.03	1.043	.176
SE1	2	34	5.00	.000	.000
	1	35	4.00	.970	.164
SE2	2	34	4.91	.288	.049
	1	35	4.31	.796	.135
SE4	2	34	4.56	.504	.086
	1	35	4.00	1.057	.179

Table 7.4 Independent-Samples T-Test

	Levene's Test for Equality of Variances		*t*-Test for Equality of Means						
	F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PE1	18.502	.000	3.109	67	.003	.508	.163	.182	.833
PE2	17.374	.000	3.496	67	.001	.731	.209	.314	1.148
PE5	60.749	.000	3.587	67	.001	.455	.127	.202	.709
EE1	5.291	.025	.250	67	.803	.044	.175	-.305	.392
EE3	.142	.707	-.498	67	.620	-.069	.138	-.345	.207
EE4	1.589	.212	-1.203	67	.233	-.258	.214	-.686	.170
SI2	53.564	.000	6.575	67	.000	1.313	.200	.914	1.711
SI3	21.899	.000	3.255	67	.002	.755	.232	.292	1.217
SI5	2.556	.115	-1.612	67	.112	-.344	.213	-.769	.082
FC1	20.399	.000	1.015	67	.314	.265	.261	-.256	.785
FC2	78.598	.000	4.399	67	.000	1.084	.246	.592	1.576
FC3	113.457	.000	5.867	67	.000	1.569	.267	1.035	2.103
FC4	49.404	.000	4.959	67	.000	1.279	.258	.764	1.794
FC5	36.522	.000	3.636	67	.001	.895	.246	.404	1.386
BI1	29.023	.000	4.268	67	.000	.912	.214	.485	1.338
BI2	52.128	.000	5.245	67	.000	1.000	.191	.619	1.381
BI3	32.010	.000	4.024	67	.000	.966	.240	.487	1.444
BI4	20.116	.000	1.942	67	.056	.472	.243	-.013	.958
ATT1	78.399	.000	3.515	67	.001	.514	.146	.222	.806
ATT2	17.932	.000	2.459	67	.017	.422	.172	.079	.764
ATT3	13.395	.000	.376	67	.708	.067	.179	-.289	.424
ATT4	7.943	.006	3.305	67	.002	.648	.196	.257	1.039
SE1	77.034	.000	6.009	67	.000	1.000	.166	.668	1.332
SE2	57.202	.000	4.122	67	.000	.597	.145	.308	.887
SE4	6.926	.011	2.789	67	.007	.559	.200	.159	.959

The following subsections illustrate the descriptive statistics for performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), behavioural intention (BI), attitude (ATT), perceived behavioural control (PB), self-efficacy (SE), and experience (EX).

7.13.1 Performance Expectancy (PE)

Figure 7.1 (pre-intervention) and Figure 7.2 (post-intervention) illustrate participants' responses to the five items about performance expectancy (PE). In the pre-intervention, "strongly agree" was the most common response, followed by "agree"

and “undecided”, while responses for “disagree” and “strongly disagree” were very low. The performance expectancy items with the highest number of “strongly agree” responses in the pre-intervention questionnaire were PE3 (*N* = 22) and PE5 (*N* = 21), followed by PE1 (*N* = 17), PE4 (*N* = 15), and PE2 (*N* = 13).

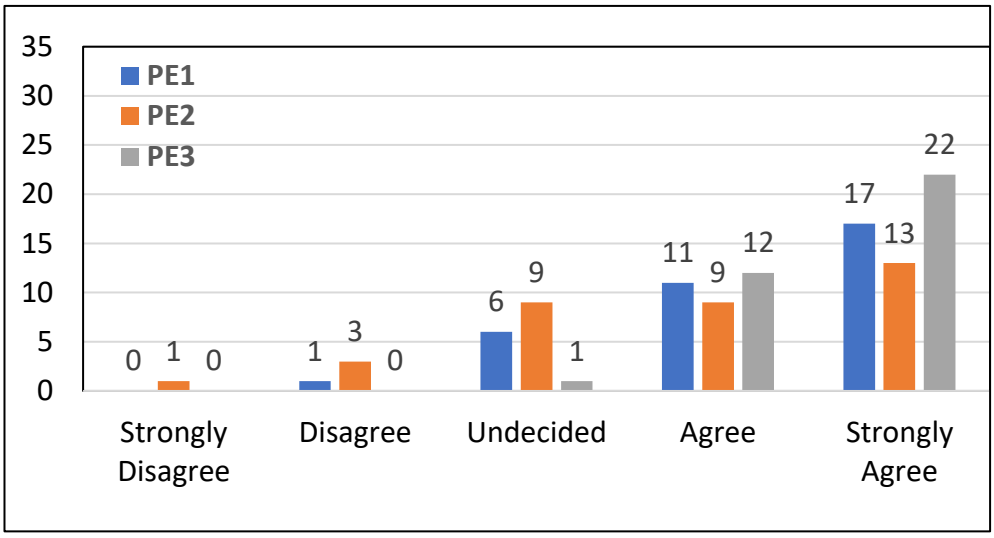
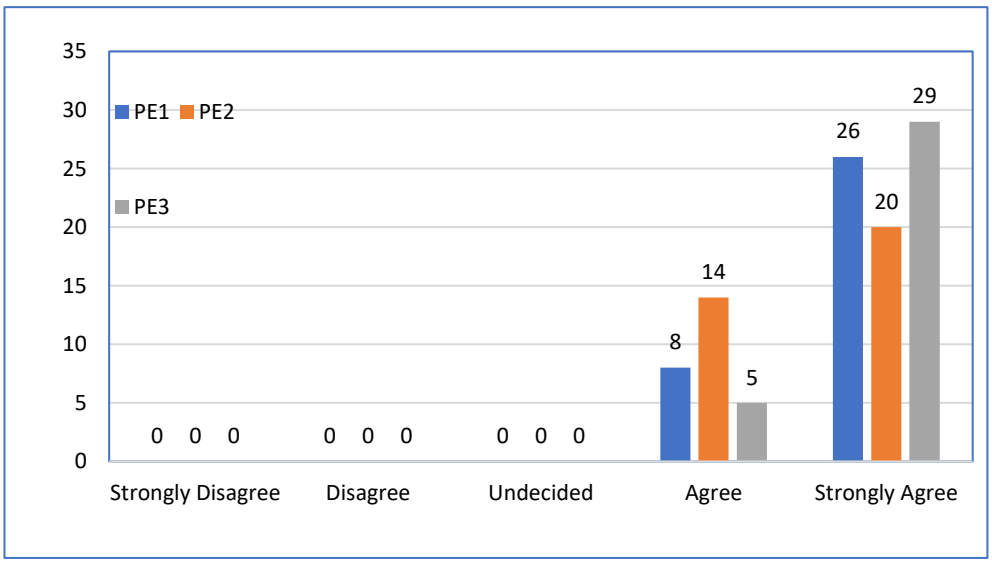


Figure 7.1 Pre-Intervention Performance Expectancy



PE1: Computer assisted translation (CAT) tools are useful in my job.
PE2: Translation software other than CAT tools is useful in my job.
PE3: CAT tools are useful to identify translation time and costs.

Figure 7.2 Post-Intervention Performance Expectancy

In contrast to the pre-intervention results, the largest number of post-intervention responses were for “strongly disagree”, followed by a smaller number for “agree”, with no responses for the other three categories. The statistical analysis showed that

differences between pre- and post-intervention questionnaire responses were highly significant ($p < 0.000$).

7.13.2 Effort Expectancy (EE)

Figure 7.3 (pre-intervention) and Figure 7.4 (post-intervention) illustrate the responses to the three items about effort expectancy (EE). In the pre-intervention, the largest number of responses was for "strongly agree", followed by "agree" and "undecided", with responses for the other two categories extremely low. The effort expectancy items with the highest number of "strongly agree" responses in the pre-intervention questionnaire were EE1 ($N = 17$) and EE2 ($N = 19$), followed by EE3 ($N = 17$).

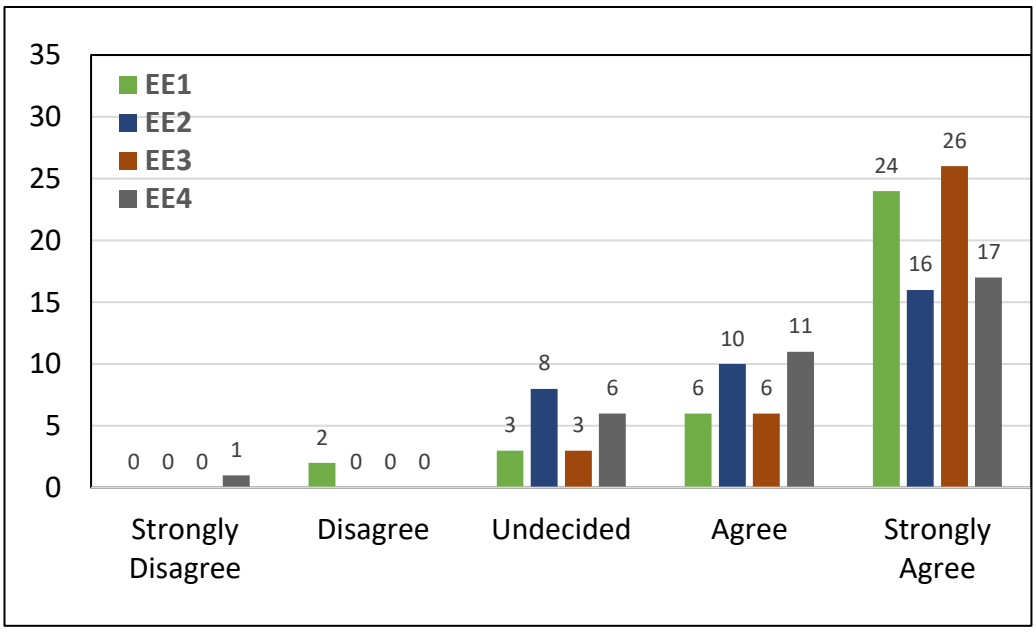
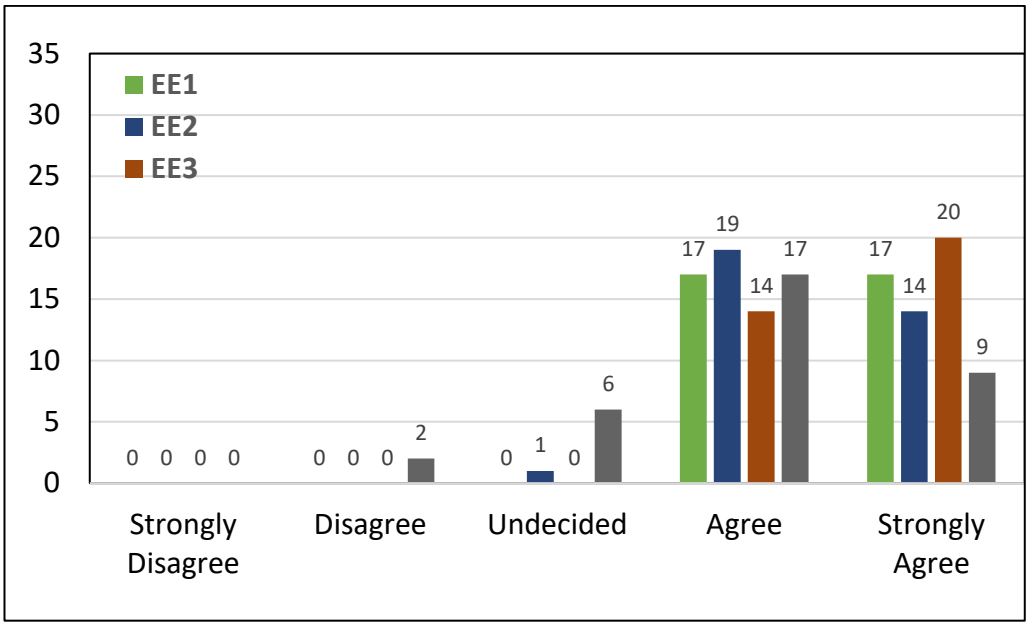


Figure 7.3 Pre-Intervention Effort Expectancy



EE1: CAT tools are easy to understand.
EE2: Translation software other than CAT tools is easy to understand.
EE3: I have a strong mastery of translation software other than CAT tools.

Figure 7.4 Post-Intervention Effort Expectancy

In contrast to the pre-intervention results, an even larger majority of post-intervention responses were "agree" or "strongly agree", with hardly any for "undecided" or "disagree" and none for "strongly disagree". The differences between pre- and post-intervention questionnaire responses were not significant, as presented in Table 7.1.

7.13.3 Social Influence (SI)

Figure 7.5 (pre-intervention) and Figure 7.6 (post-intervention) illustrate participants' responses to the three items about social influence (SI).

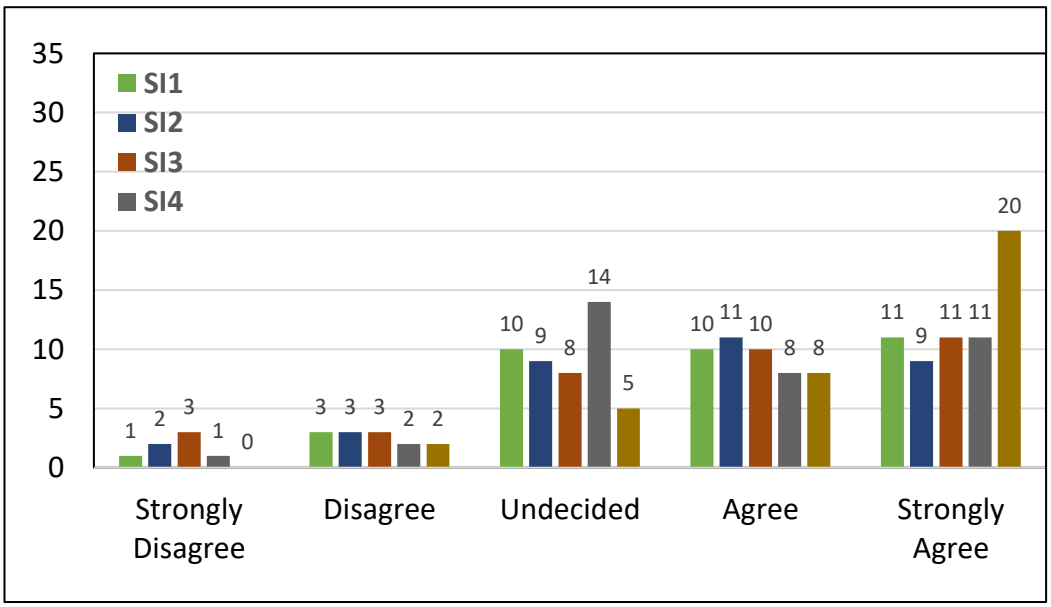
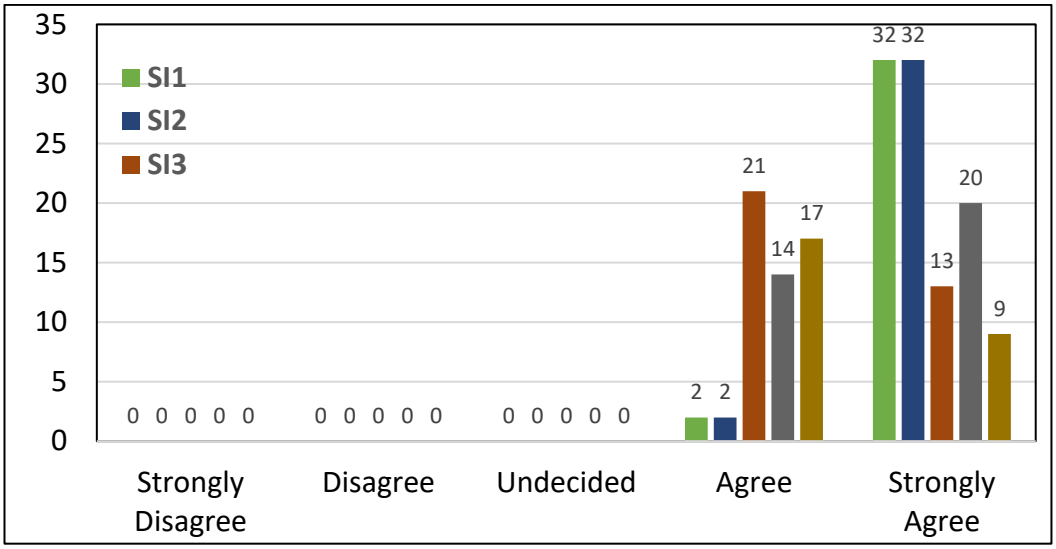


Figure 7.5 Pre-Intervention Social Influence



SI1: My colleagues think that I should use translation software.
SI2: My translation teachers think that I should always use CAT tools in my translation work.
SI3: My translation project supervisor supports me using CAT tools.

Figure 7.6 Post-Intervention Social Influence

The largest number of responses was for "strongly agree" and "agree", while the other three options had very low response rates. The social influence items with the highest number of "strongly agree" responses in the post-intervention questionnaire were SI1 (*N* = 32) and SI2 (*N* = 32), followed by EE3 (*N* = 17).

In contrast to the pre-intervention results, all post-intervention responses were for "strongly agree" or "agree" and none for the other three categories. The differences between pre- and post-intervention questionnaire responses were significant, as presented in Table 7.1.

7.13.4 Facilitating Conditions (FC)

Figure 7.7 (pre-intervention) and Figure 7.8 (post-intervention) illustrate the responses to the five items about facilitating conditions (FC). The most common response on the post-intervention questionnaire was "strongly agree", followed by "agree", "undecided", "strongly disagree", and "disagree". The facilitating conditions items with the highest number of "strongly agree" responses in the post-intervention questionnaire were FC1 (*N* = 20), FC2 (*N* = 18), FC3 (*N* = 11), FC4 (*N* = 12), FC5 (*N* = 10), and FC6 (*N* = 11).

The post-intervention responses appear identical in the figures to the pre-intervention ones. The differences between pre- and post-intervention questionnaire responses, however, were significant, as presented in Table 7.1.

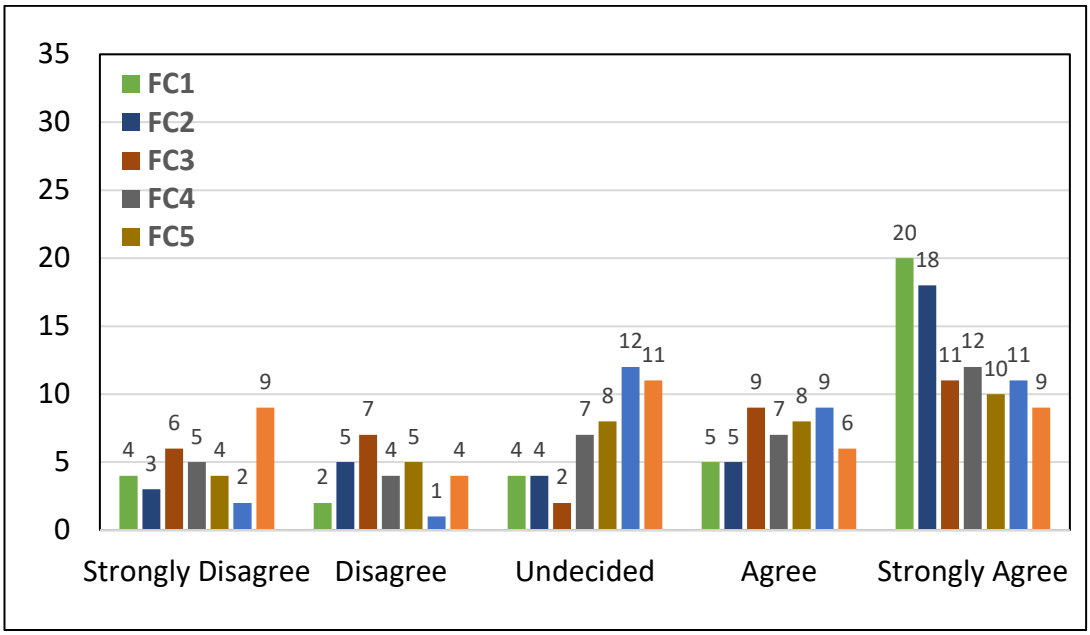
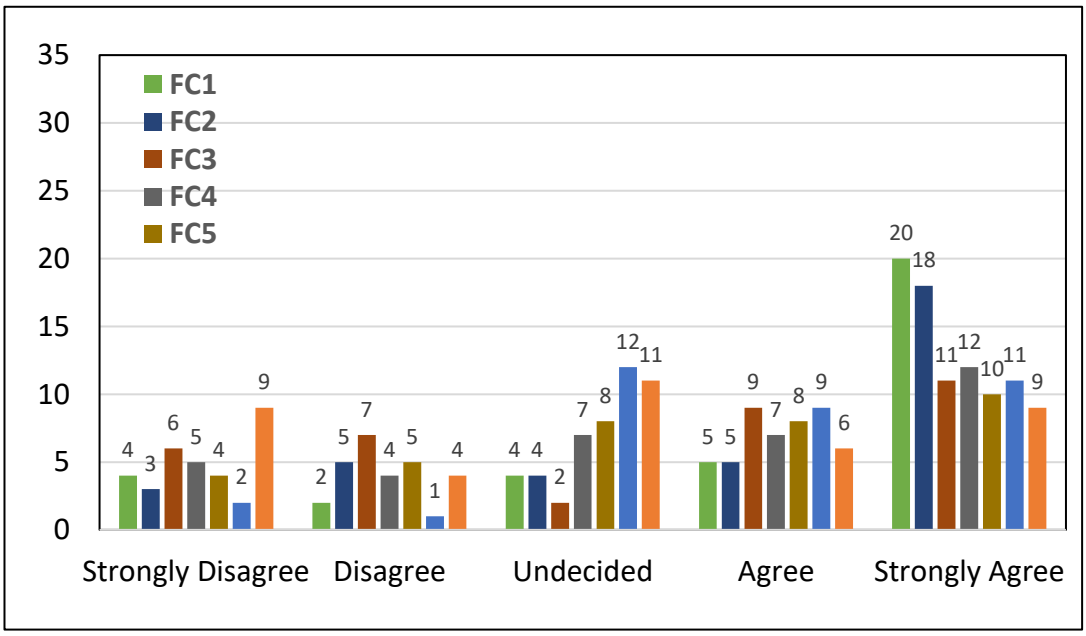


Figure 7.7 Pre-Intervention Facilitating Conditions



FC1: I have used CAT tools during at least one translation project.
FC2: I have used translation software other than CAT tools during at least one translation project.
FC3: I have made significant use of CAT tools in practising translation.
FC4: I have made significant use of translation software other than CAT tools in practising translation.
FC5: I have been trained to use CAT tools at my Saudi university.
FC6: I have been trained to use translation software other than CAT tools at my Saudi university.

Figure 7.8 Post-Intervention Facilitating Conditions

7.13.5 Behavioural Intention (BI)

Figure 7.9 (pre-intervention) and Figure 7.10 (post-intervention) illustrate the responses to the five items about behavioural intention (BI) to use CAT tools.

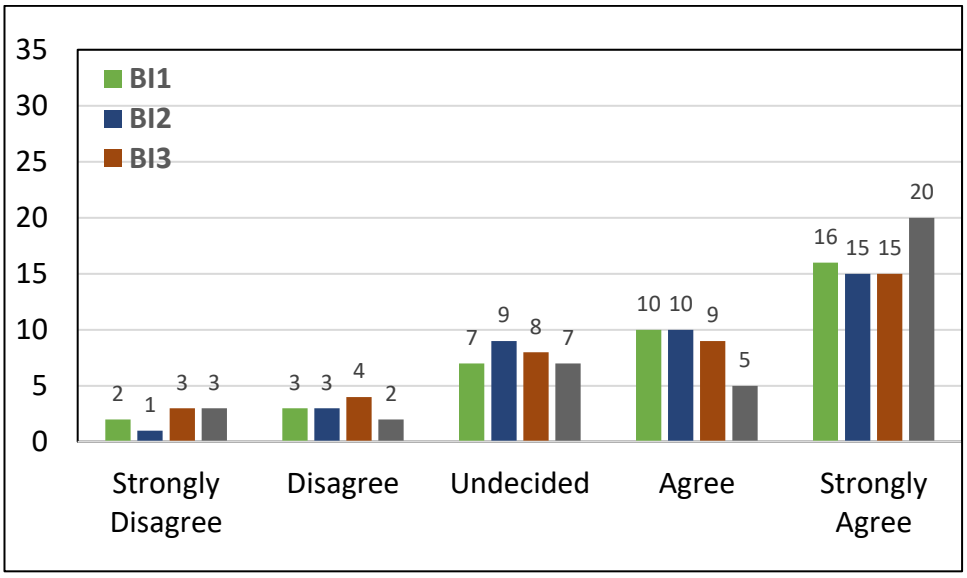
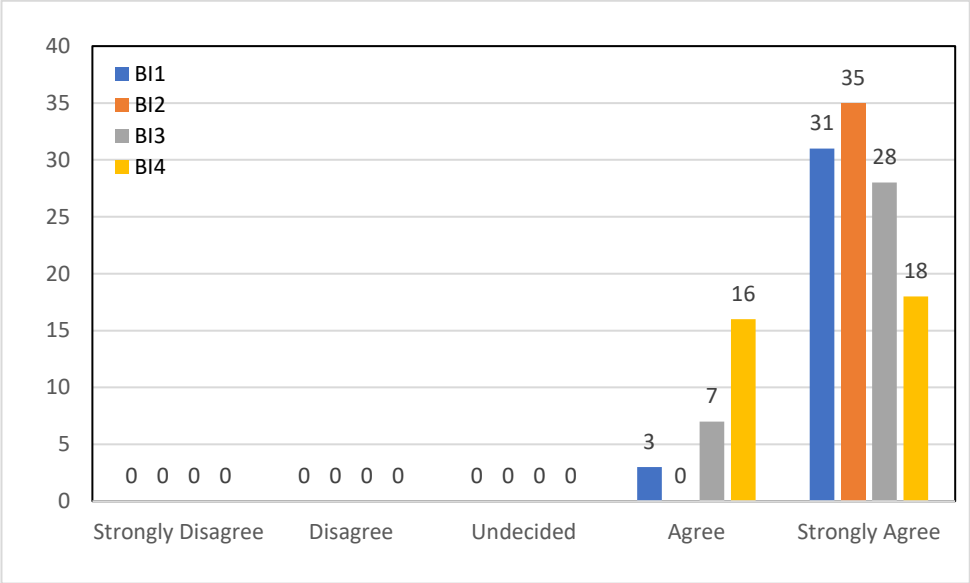


Figure 7.9 Pre-Intervention Behavioural Intention to Use CAT Tools



BI1: I intend to use CAT tools in the future.
BI2: I intend to use translation software other than CAT tools in the future.
BI3: I am planning to use CAT tools in my next training session, in order to be able to use them in the future.
BI4: I am planning to use translation software other than CAT tools in my next training session, in order to be able to use it in the future.

Figure 7.10 Post-Intervention Behavioural Intention to Use CAT Tools

In the pre-intervention questionnaire, "strongly agree" clearly had the most responses, followed by "agree" and "undecided", with "disagree" and "strongly disagree" much further down. The behavioural intention items with the highest number of "strongly agree" responses in the post-intervention questionnaire were BI1 (*N* = 31), BI2 (*N* = 35), BI3 (*N* = 28), and BI4 (*N* = 18).

In stark contrast to the pre-intervention results, the post-intervention responses were overwhelmingly for “strongly agree”, with much small numbers for “agree” and none for the other three categories. The differences between pre- and post-intervention questionnaire responses were significant, as presented in Table 7.1.

7.13.6 Attitude (ATT)

Figure 7.11 (pre-intervention) and Figure 7.12 (post-intervention) illustrate the responses to the four items about attitude (ATT). Overwhelmingly, the majority of respondents chose “strongly agree”, followed by “agree”. “Undecided” had a lower response rate, while “disagree” and “strongly disagree” had extremely low response rates. In the post-intervention questionnaire, the attitude items with the highest number of “strongly agree” responses were ATT1 (*N* = 34), ATT2 (*N* = 26), ATT3 (*N* = 11), and ATT4 (*N* = 22).

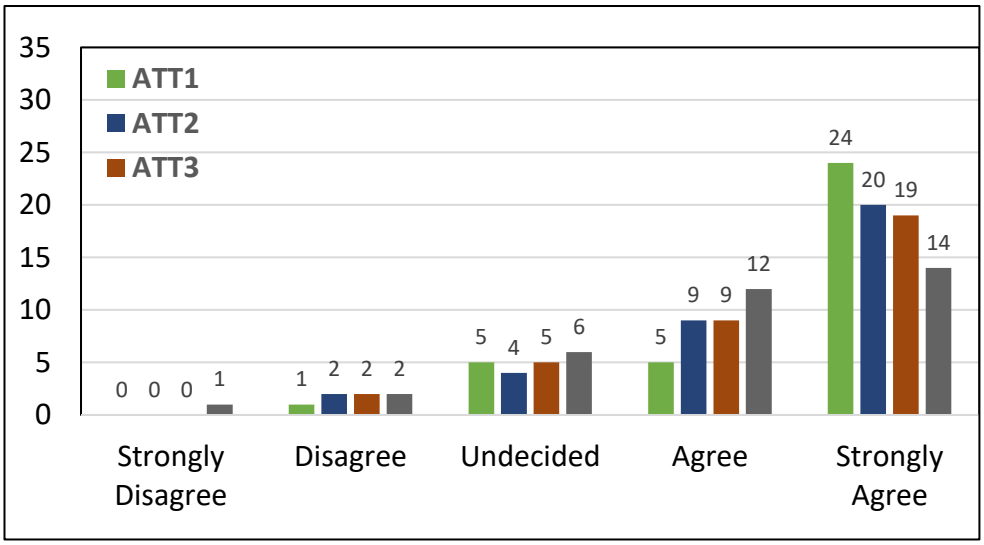
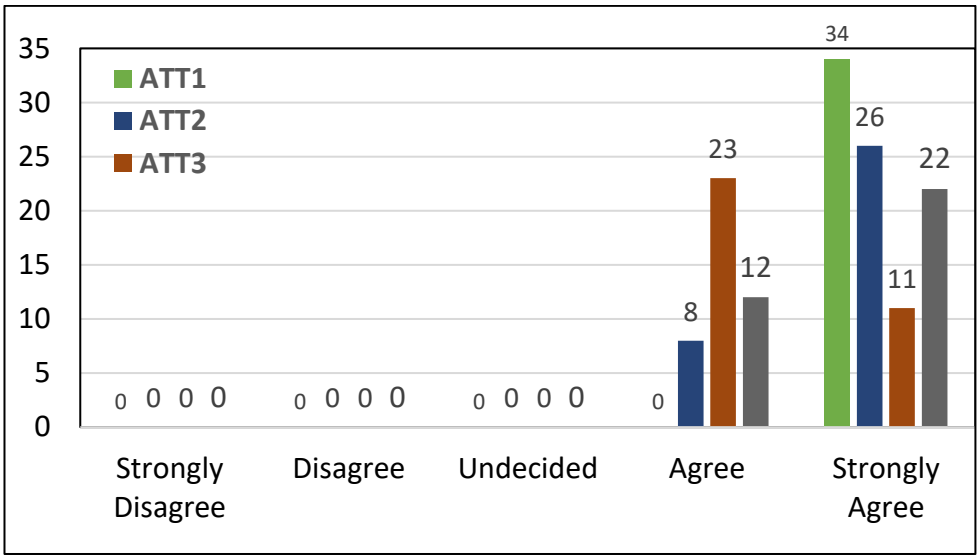


Figure 7.11 Pre-Intervention Attitude



ATT1: I have used CAT tools during at least one translation project.
ATT2: I have used translation software other than CAT tools during at least one translation project.
ATT3: I have made significant use of CAT tools in practising translation.
ATT4: I have made significant use of translation software other than CAT tools in practising translation.

Figure 7.12 Post-Intervention Attitude

In contrast to the pre-intervention results, all respondents in the post-intervention questionnaire chose "strongly agree" or, to a lesser extent, "agree", with the other categories receiving no responses. The differences between pre- and post-intervention questionnaire responses were significant, as presented in Table 7.1.

7.13.7 Perceived Behavioural Control (PB)

Figure 7.13 (pre-intervention) and Figure 7.14 (post-intervention) illustrate the responses to the three items about perceived behavioural control (PB).

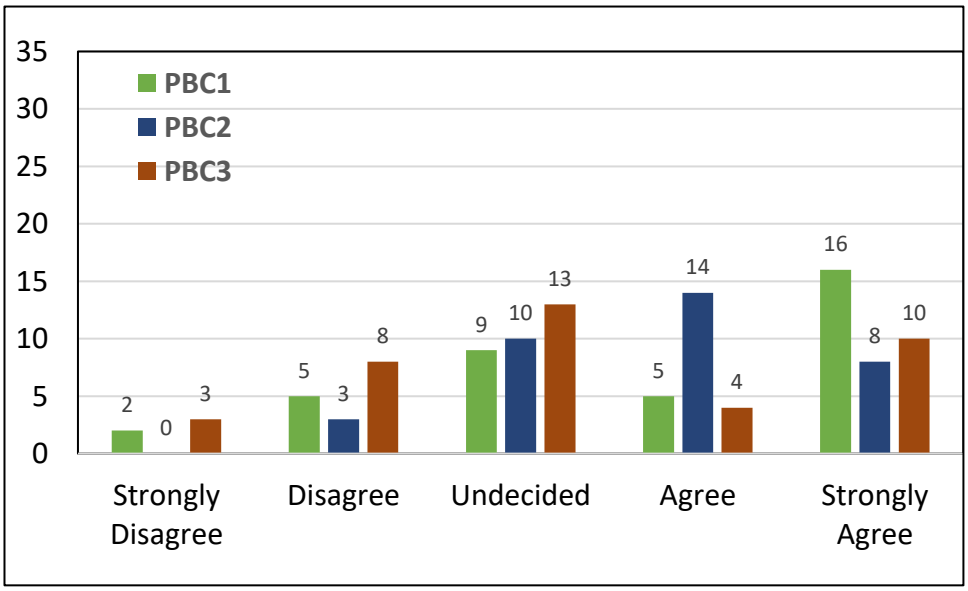
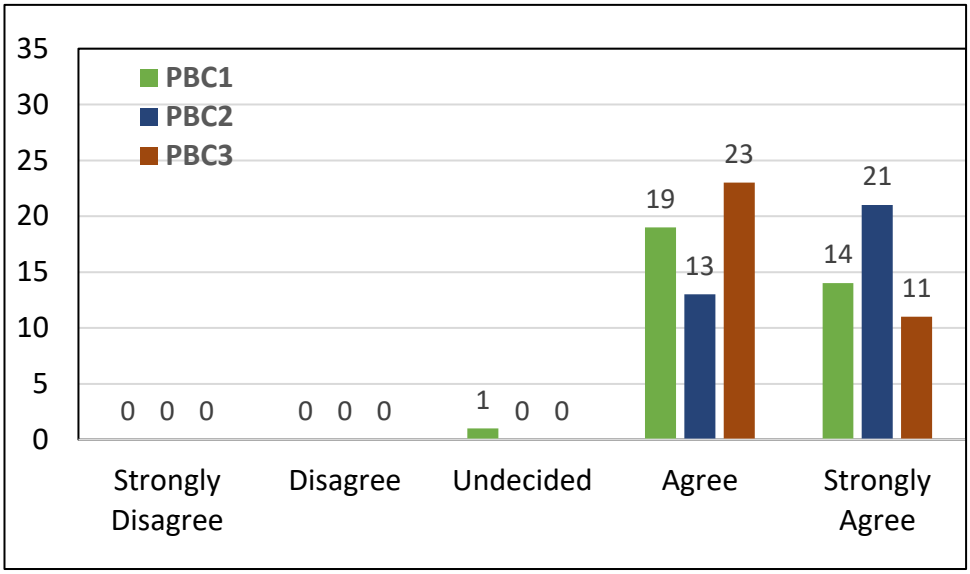


Figure 7.13 Pre-Intervention Perceived Behavioural Control



PB1: Whether or not I use CAT tools is entirely up to me.
PB2: How much personal control do you feel you have over using CAT tools?
PB3: How much do you feel that using CAT tools is under your control?

Figure 7.14 Post-Intervention Perceived Behavioural Control

In the pre-intervention questionnaire, slightly more respondents chose "strongly agree" compared to "undecided", with fewer still selecting "agree" or "disagree" and very few selecting "strongly disagree". The perceived behavioural control items with the highest number of responses were PB1 (N = 16) and PB3 (N = 10), followed by PB2 (N = 8).

In contrast to the pre-intervention results, nearly all responses in the post-intervention were "agree" or "strongly agree", with only one choosing "undecided" and none choosing either of the other two options. The differences between pre- and post-intervention questionnaire responses were highly significant ($p < 0.000$), as presented in Table 7.1.

7.13.8 Self-Efficacy (SE)

Figure 7.15 (pre-intervention) and Figure 7.16 (post-intervention) illustrate the responses to the four items about self-efficacy (SE). The largest number of respondents chose the "strongly agree" category, followed by "agree" and "undecided". The figures for the two categories "disagree" and "strongly disagree" in the pre-intervention questionnaire were very low, as shown in Figure 8.1. The self-efficacy items with the highest number of responses in the pre-intervention questionnaire were SE1, SE2, SE3, and SE4.

In contrast to the pre-intervention results, respondents in the post-intervention selected either "agree" or "strongly agree", with none choosing any of the other three

options. The differences between pre- and post-intervention questionnaire responses, however, were not significant ($p < 0.000$).

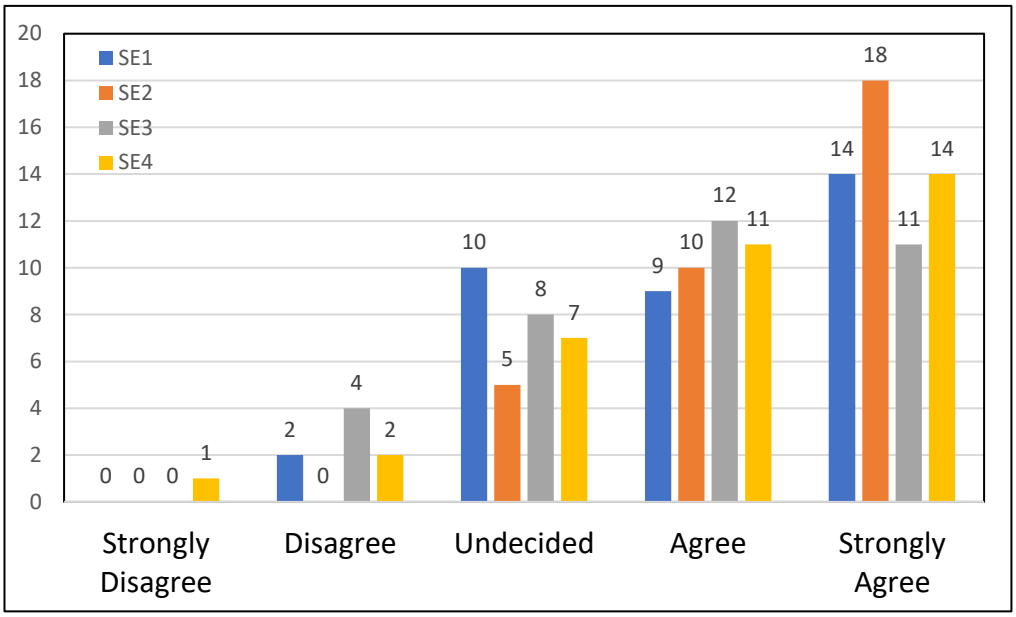
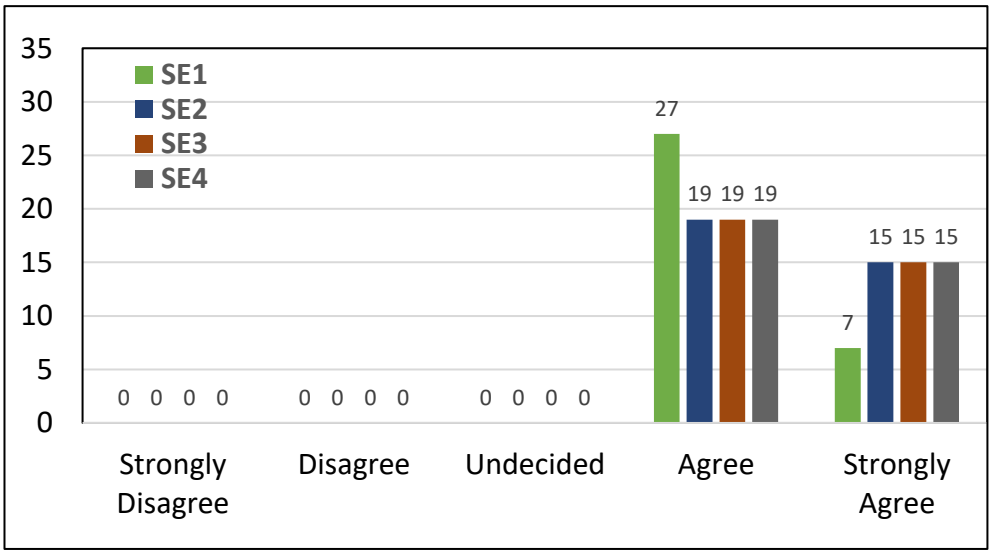


Figure 7.15 Pre-Intervention Self-Efficacy



SE 1: I believe I have the ability to use CAT tools.
SE 2: To what extent do you see yourself as being capable of using CAT tools?
SE 3: How confident are you that you will be able to use CAT tools?
SE 4: If it were entirely up to me, I am confident that I would be able to use CAT tools.

Figure 7.16 Post-Intervention Self-Efficacy

7.13.9 Experience Expectancy (EX)

Finally, Figure 7.17 (pre-intervention) and Figure 7.18 (post-intervention) illustrate the responses to the four items about experience expectancy (EX).

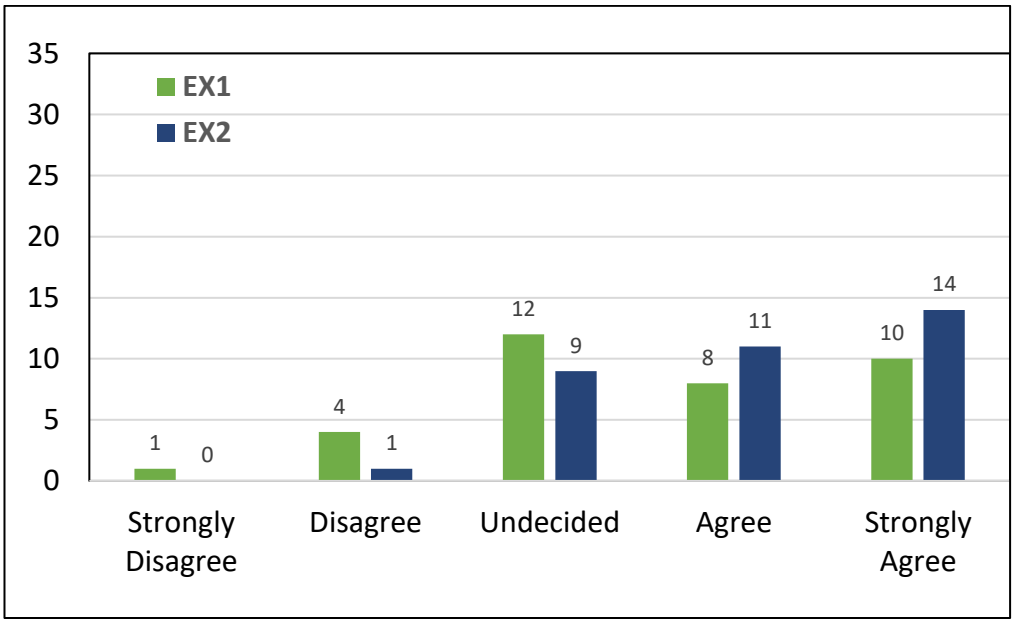
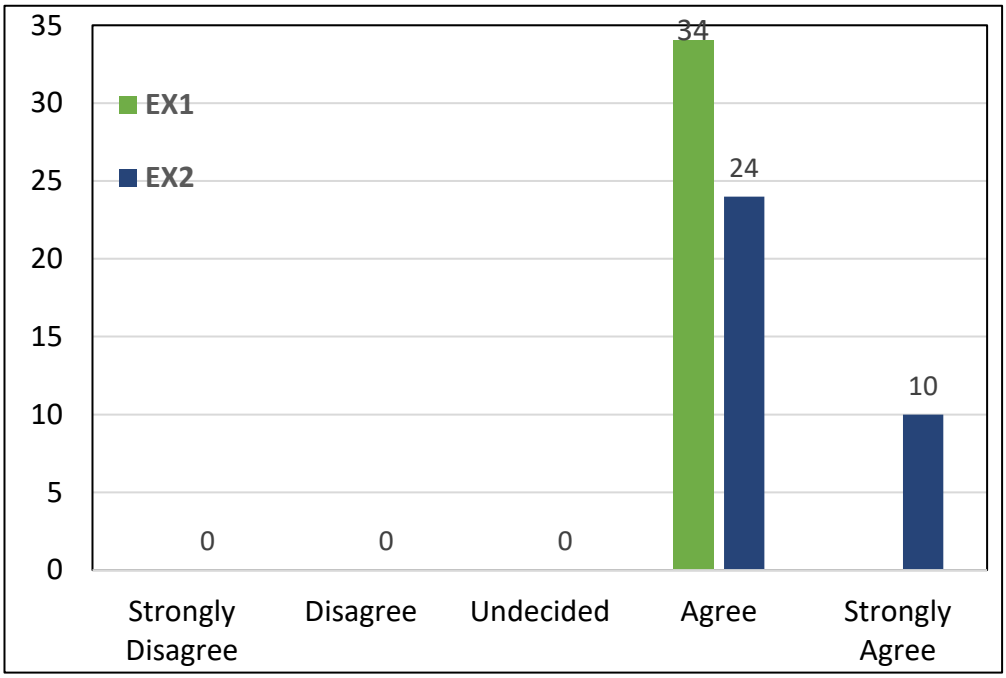


Figure 7.17 Pre-Intervention Experience Expectancy



EX1: Compared to students who study translation, how much experience do you have using CAT tools?
EX2: Compared to other translators in general, how much experience do you have using CAT tools?

Figure 7.18 Post-Intervention Experience Expectancy

In the pre-intervention questionnaire, respondents were more likely to select “agree”, “strongly agree”, or “undecided”. The experience items with the highest number of responses in the pre-intervention questionnaire were EX1 and EX2.

In a major change from the pre-intervention results, most respondents in the post-intervention questionnaire selected “agree”, with far fewer selecting “strongly agree”

and no responses for the other three options. The differences between pre- and post-intervention questionnaire responses were significant ($p < 0.000$).

7.14 Chapter Summary

The findings in this chapter have suggested that participants' intentions to use CAT tools were particularly influenced by their institution, teachers, experience using CAT tools, and familiarity with information technology. In general, these factors were accentuated when new CAT tools were deployed across Saudi universities and training programmes with different languages, technological infrastructure, and translation fields. This indicated that CAT tools are able to remove some barriers to developing more competitive translation skills. Such barriers might include differences in software versions and interoperability problems with systems for professional and novice translators alike.

Digital technology has had a positive impact on almost every aspect of contemporary translation. However, translator-training programmes in Saudi Arabia have failed to keep pace with contemporary developments in the translation field (Abu-ghararah, 2017, p. 117). One barrier is that successful implementation of CAT tools in the Saudi Arabian translation market relies heavily on students, instructors, and service providers' acceptance of these tools. It is therefore imperative for Saudi Arabia to integrate more CAT tools into the private and public sectors and provide more training as part of translation pedagogy at universities and training in commercial enterprises in order to normalize the use of these tools.

Chapter 8
Discussion

8.1 Introduction

This chapter discusses the quantitative and qualitative data. Section 8.2 focuses on the quantitative data drawn from the questionnaires. Section 8.2.1 discusses direct determinants, including the relationship between attitude and behavioural intention (see Section 8.2.1.1), the relationship between social influence and behavioural intention (see Section 8.2.1.2), the relationship between facilitating conditions and behavioural intention (see Section 8.2.1.3), and the relationship between self-efficacy and behavioural intention (see Section 8.2.1.4). This is followed by Section 8.2.2, which discusses indirect determinants (i.e., mediation), including the relationship between performance expectancy and attitude (see Section 8.2.2.1) and the relationship between effort expectancy and attitude (see Section 8.2.2.2).

Section 8.3 explains the qualitative analysis of the interviews and gives a discussion of each of the themes in separate subsections, including the steps involved in a translation project (see Section 8.3.1), opinions about the ISO 17100 report and official support for CAT tools from the Saudi Chamber of Commerce (see Section 8.3.2), procedures for translator certification in the public and private sectors (see Section 8.3.3), opportunities for Saudi Arabian translation graduates to use CAT tools (see Section 8.3.4), students' opinions about the nature of translation and their familiarity with CAT tools (see Section 8.3.5), perceived obstacles to using CAT tools in the field in Saudi Arabia (see Section 8.3.6), and the steps needed to improve the translation services available in Saudi Arabia (see Section 8.3.7). This is followed by a discussion of the quantitative and qualitative findings together (see Section 8.4) and a summary of the chapter (see Section 8.5).

8.2 Quantitative Data

The main goal of the quantitative portion of this study was to identify the determinants of Saudi Arabian students' behavioural intention to use CAT tools. Four of the six direct hypotheses were supported, as was one of the two mediation hypotheses (see Tables 6.5 and 6.6). In assessing the significance of the relationships in the model, a 0.05 level was used as the lower limit for substantive significance for regression coefficients (Pedhazur, 1982). All significant relationships were significant at this 0.05 level or lower (i.e., 0.01, 0.001, or 0.000). To illustrate, the relationship between performance expectancy and attitude as well as between attitude and intention had a *p*-value of 0.000. The relationships between social influence and behavioural intention

(p = 0.022) and between facilitating conditions and behavioural intention (p = 0.028) were significant at the 0.05 level.

Building on behavioural research theories (including the UTAUT), this study proposes a model that defines the determinants of behavioural intention to use translation technology. In the proposed model, the independent variables of attitude towards using translation technology, social influence, facilitating conditions, and self-efficacy were the determinants of behavioural intention and explained 46.8% of the variance in behavioural intention. Furthermore, performance expectancy and effort expectancy were proposed to determine attitudes towards using translation technology. An R-squared of 0.324 (see Table 6.7) indicated that 32.4% of the variance in attitudes was explained by the independent variables.

8.2.1 Direct Determinants

8.2.1.1 Relationship between Attitude and Behavioural Intention

The results supported Hypothesis 3 that there would be a significant positive relationship between attitude towards using CAT tools and behavioural intention to use them. This is consistent with previous research from different fields (e.g., Edwards and Bagozzi, 2000; Oliver and Bearden, 1985; Shim et al., 2001; Trafimow and Fishbein, 1995; Warburton and Terry, 2000). In addition, attitude towards using translation technology was the strongest predictor of behavioural intention with the highest path coefficient (0.405). The literature supports the findings, for example, a study conducted with 103 female students enrolled in translation studies in Saudi Arabia (Alotaibi, 2014, pp. 65-74). That study found that the translation industry had witnessed considerable advances in technology. However, the translators in Saudi Arabia still refrained from using efficient CAT tools and techniques. When translation studies students were provided with training about CAT tools, their attitude towards using these tools developed positively. Researchers found that the use of CAT tools sped up the entire translation process and made the overall process easier. The positive attitude towards the adoption of CAT tools increased the behavioural intention of the students to use these tools in the future, depicting a positive association between these variables. In a similar context, the literature has highlighted that CAT tools are highly productive and efficient in translating texts of all types (e.g., Mahfouz, 2018, pp. 69-83). Globalization and the growing rate of business activities conducted at the global level have increased the need for translation services and translators. The high efficiency of CAT tools has shaped the positive attitude of translation students. Moreover, a high positive attitude towards the adoption of CAT tools has been found among those translators or students that have prior knowledge about computers as they found it easy to work on the CAT tools.

As the workload of translators and the translation industry has increased in recent years, it is evident that this sector requires advanced tools and techniques that can perform the work in the shortest possible time. CAT tools have simplified the translation process and increased productivity. These benefits of operating those tools, such as translating texts with high efficiency, have produced a more positive attitude towards using CAT tools. The positive attitude and desire to use CAT tools have increased the behavioural intentions of students at universities to rely on these tools to generate higher-quality translated texts. Moreover, it is essential for universities to make students in translation studies familiar with advanced translation tools so that they develop a positive attitude towards them and use them in the future (Çetiner, 2018, pp. 153-161). CAT tools build a positive perception of the process of translation, and translators who use them enjoy their job more than those who do not use these tools. In addition, younger students exposed earlier to CAT tools had higher behavioural intentions to use these tools than the participants exposed to CAT tools at a later stage. These results highlight that the efficiency of CAT tools helps shape a positive attitude and intentional behaviour towards using these tools. However, in the case of those who do not possess knowledge about computers and have not worked on computers, the attitude towards using CAT tools may be slightly negative (Alfarisy and Reswari, 2019, p. 173).

8.2.1.2 Relationship between Social Influence and Behavioural Intention

The results supported Hypothesis 4 that there would be a significant positive relationship between social influence and behavioural intention to use translation technology (see Section 6.1). This is consistent with some previous research (e.g., Edwards and Bagozzi, 2000; Manstead and Van Eekelen, 1998; Oliver and Bearden, 1985), although the magnitude of the effect was moderate with a path coefficient of 0.192 (see Section 6.2, Table 6.2).

Social influence refers to the influence of society on the mindset of an individual towards the adoption of new technology or techniques. Social influence in terms of peer pressure and the overall image of the CAT tools have positively increased the use of CAT tools in translation services. When people in this industry interact with each other, they may develop a positive image of CAT tools from social interactions, which increases their behavioural intentions to use the technology to improve their overall productivity (Estelles and Nebot, 2015, pp. 66-78). In addition to this, the literature further states that the increasing competition in translation services and the growing demand for high-quality translated texts have formed a more competitive environment in the industry. This competition has helped translators in adopting CAT tools to retain their position in the market and earn more money. Along with this, the growing popularity of CAT tools in the universities of the United Kingdom and the

United States also constitutes a social influence on the adoption of these tools in translating texts. which shows a positive association between social influence and behavioural intention towards the use of CAT tools (Christensen and Schjoldager, 2016, pp. 89-105).

It can be stated that social influence has played a significant role in increasing the use of CAT tools in the translation sector. The increased rate of communication at the global level due to social media applications has raised awareness about advanced translation tools such as SDL Trados Studio. It has helped create a positive social influence on the global society's adoption of and behavioural intention to use CAT tools. The use of CAT tools and their great efficiency in translating long texts has also increased the overall confidence level of translators, demonstrating a positive social influence of this technology (Massey and Kirlay, 2019, pp. 177-199).

8.2.1.3 Relationship between Facilitating Conditions and Behavioural Intention

The results supported Hypothesis 5 that there would be a significant positive relationship between facilitating conditions and behavioural intention to use translation technology. This finding is consistent with previous research mentioned in Chapter 2, Section 2.2. The magnitude of the relationship in this study was moderate, with a path coefficient of 0.156 (Table 5.5).

8.2.1.4 Relationship between Self-Efficacy and Behavioural Intention

Hypothesis 6 proposed a significant positive relationship between self-efficacy and behavioural intention to use translation technology (see Section 6.2). However, the results did not support this hypothesis, in contrast to previous research across several fields which showed a significant relationship between self-efficacy and behavioural intention, as mentioned in the literature review (see Section 4.3.1). A potential explanation is that respondents were technologically savvy and believed they had the ability to handle CAT tools. Saudi Arabian students are familiar with a variety of software and devices, and e-learning began in Saudi Arabia in the early 2000s. These and related factors could have contributed to students being more familiar with digital technology, making the ability to use CAT tools an insignificant determinant of their intention to use them. Self-efficacy refers to the capabilities of an individual to produce high-quality results. Therefore, self-efficacy is an important personality trait of an individual required to perform a job. In the translation sector, self-efficacy has a strong association with behavioural intentions. Moreover, the use of CAT tools in this industry has improved overall work, which has boosted the confidence level of translators and increased their self-efficacy. The increased self-efficacy of translators has in turn enhanced their behavioural intentions to adopt CAT tools (Bolaños-Medina and Nuñez, 2018, p. 58).

8.2.2 Indirect Determinants (Mediation)

The intention to use translation technology was hypothesized to be indirectly determined through a mediator (i.e., attitude) by performance expectancy and effort expectancy. Hypothesis 7a expected attitude towards using translation technology to mediate the relationship between performance expectancy and behavioural intention to use that technology. In other words, performance expectancy influences intention to use translation technology but indirectly through the attitude construct. The results supported this hypothesis, indicating that performance expectancy influenced intention to use CAT tools by way of participant attitudes about these tools. This variable had a significant direct effect on behavioural intention.

Similarly, Hypothesis 7b expected that participant attitude would mediate the relationship between effort expectancy and behavioural intention. However, the results did not support this hypothesis, as the relationship between effort expectancy and attitude was not significant. Furthermore, effort expectancy did not have a significant direct relationship with intention. Perhaps due to a greater awareness of digital technology, effort expectancy was not perceived by respondents to influence their intention to use translation technology.

8.2.2.1 Relationship between Performance Expectancy and Attitude

Supporting Hypothesis 1, the results found that performance expectancy had a significant positive effect on attitude towards using translation technology. This suggests that as a CAT tool enhances users' translation performance, they will form a positive attitude towards that tool. In this way, the results are consistent with previous studies mentioned in Chapter 2. Furthermore, the level of influence from performance expectancy on attitude was high with a path coefficient of 0.578. The findings of the literature are in line with the above results, which show that when translators make use of CAT tools, they realize that they can translate the texts faster. In addition to this, CAT tools offer the facility to save and edit texts. Along with helping translate the text, the use of CAT tools increases translators' confidence that they can deliver high-quality translated texts to their clients, leading to higher performance expectancy that shapes a positive approach towards the adoption of CAT tools in the future. Businesses typically adopt those technologies and techniques that facilitate higher productivity and profitability; thus, the use of CAT tools has been associated with higher performance and quality of services (Çetiner, 2018, p. 153).

8.2.2.2 Relationship between Effort Expectancy and Attitude

Contrary to Hypothesis 2, the results showed no significant positive effect of effort expectancy on participant attitudes. This contrasts with previous research (see Section 4.3.1). Thus, the results suggest that the effort needed to use translation technology

was not a significant predictor of attitudes toward using it, and respondents appeared to perceive translation technology as easy to use. This result was fairly consistent with the results related to the self-efficacy hypothesis (Hypothesis 6), where respondents apparently viewed themselves as technologically savvy.

8.3 Qualitative Data

This section discusses the qualitative data in relation to the research questions. To examine the effectiveness of CAT tool training and pedagogy offered by Saudi Arabian universities, the researcher interviewed 10 professional translators working in different sectors in Saudi Arabia and analysed the resulting data using thematic analysis.

Prior to the thematic analysis, the researcher went about reading and re-reading the data to find initial themes. Using the ATLAS program to generate affected terminology that had been used by the interviewee helped produce seven themes (see Section 5.1 for a detailed explanation of this process).

Essentially, thematic analysis is a flexible analytical approach that identifies patterns in data and helps interpret those patterns through themes (Braun and Clarke, 2021). The significant advantage of conducting thematic analysis is that it is an easy way to examine the views of participants and facilitate detailed interpretations of the data in alignment with the objectives of the research (Braun and Clarke, 2021). In the present study, all the themes were in alignment with the interview questions that had been asked by translators working in Saudi Arabia. In alignment with the research aims and questions, seven major themes were identified.

8.3.1 Theme 1: Steps in a Translation Project

Theme 1 was the various steps and stakeholders involved in carrying out a translation project from the initial enquiry by the client to the final delivery. This theme was based on the responses to Interview Questions 1 and 2. The first interview question of the study outlines the different steps taken by the translators and stakeholders in the translation project, while the second interview question gathers information about all the major translators involved in a translation project. The following are all the responses related to this theme:

> Interviewee 1: “After receiving a PhD in translation studies from Kent State University, U.S., I considered the American strategy in the field of translation and the way to use it for teaching and translating despite the fact that it is difficult to use. In relation to translators and their clients being the only stakeholders during

> the translation process theoretically, no but in reality, [in] the Saudi translation market, yes."
>
> Interviewee 2: "I work at a sensitive position in [a] government institution, and we deal with some sensitive topics; we have to discuss translated terms and agree on unified translated terms that we base on the text genre and dictionary. The stakeholders in our translation projects are translators. In my department, some translators work to translate as a first draft while others work as proofreaders for quality assurance."
>
> Interviewee 3: "I majorly work on legal texts and translate them. After translating the text, I submit the entire draft to the head of the department. Yes, each project is translated as a translator's duty and we have qualified translators."
>
> Interviewee 4: "I do not have an idea; I might say that translators and clients are involved in the translation process. However, in government institutions, the major step followed is that translators and the head of the department transfer the translated products to the clients."

The diverse points of view of professional translators revealed the major steps in the translation process to involve the translation of the text, quality check, and final delivery by the head of the department. The data further showed that clients and stakeholders involved in the translation projects were the only translators in Saudi Arabia. The literature supports the above findings by stating that translation services in Saudi Arabia will evolve with time. The use of CAT tools in this industry is constantly increasing. Both public- and private-sector organizations in Saudi Arabia use translators to translate their texts. However, the nation still lacks efficient, professional translators. The translators working in this field know Microsoft Office tools within which they translate files and perform editing work (Al-Jarf, 2017, p. 3). The following responses develop this theme:

> Interviewee 5: "Clients and translators are the stakeholders involved in the translation process and as translators have a licence, they can translate the texts on the basis of their strategy that is valid to produce good translation quality."
>
> Interviewee 6: "Translators and clients are the only stakeholders involved in the translation process. The translators decide whether they require group translators or not on the basis of the type of the work."
>
> Interviewee 7: "In my opinion, essential stakeholders in our translation process are free online dictionaries, translators, and clients. In our institution, each translator is responsible for handling the translation as a final draft to be transferred to the client."

> Interviewee 8: “There are three stakeholders involved in the translation market in Saudi Arabia, namely clients, translators, and office or business managers.”
>
> Interviewee 9: “The three major translators that I know are translators, managers, and clients.”
>
> Interviewee 10: “Of course, stakeholders in the Saudi translation process are clients and certified translators. There is no translation manager engaged in this process. Most of our services have been done between one of our qualified translators, business managers, and clients. However, we do not keep a hard or soft copy for our handled translation for more than 30 days.”

The responses revealed that translation in Saudi Arabia runs on a short time scale, and companies do not keep translations for more than a month. The majority of professional translators agreed that clients and translators were the only major stakeholders in the translation process. The literature has likewise shown that despite significant development in the translation sector at the global level, translation companies in Saudi Arabia do not want to translate their texts with the help of advanced tools. The translation sector of Saudi Arabia lacks access to advanced techniques and devices. Thus, most companies in Saudi Arabia are using traditional modes of translation that do not involve trained translation professionals and technicians. Translators in Saudi Arabia wish to translate texts using Microsoft Office tools that consume much time and increase the overall cost of the process (Almutawa and Izwaini, 2015). In addition to this, Saudi Arabia must have efficient translation services in order to compete at a global level. The lack of development in this sector due to a lack of training has limited the stakeholders associated with translation services. Most public- and private-sector translators depend on inefficient translation tools, and the steps involved in the translation process are very few. There are no professional proofreaders involved in the process of translating texts, which hampers the overall quality of the texts (Al-Ahdal et al., 2017).

8.3.2 Theme 2: ISO 17100 and Official Support for CAT Tools

The second theme addressed the third and fourth interview questions and focused on translators’ knowledge of the ISO 17100 report (see Section 5.4). The third interview question gathered information about the ISO translation standards, and the fourth question asked the translators about the Saudi Chamber of Commerce’s support for the adoption of CAT tools in translation services in Saudi Arabia. The first interviewee was aware of this report:

> Interviewee 1: “Based on the knowledge acquired in my MA and PhD in translation studies at Kent State University. Yes, I am familiar with this report,

> but unfortunately, most of my clients and translators in the Saudi language industry are not aware of this reference. In reference to the support of the Saudi Chamber of Commerce for CAT tools, I believe that there is no such support."

Interviewees 2, 4, 5, 7, and 8 said they did not have knowledge about the ISO 17100 report:

> Interviewee 8: "I always support my translators who work with us to use translation technology in all different levels in the Saudi translation market because it helps in building the consistency of translated work."

> Interviewee 3: "I do not have much knowledge about the ISO 17100 report; however, I use most of the legal terms that are needed for the process of translation."

> Interviewee 6: "I am familiar with this report in the academic field, but I cannot rely on it during my work in the Saudi translation market. I am more comfortable in making my own translation memory for translated terms, and I create my own terminologies on the basis of the received text."

> Interviewee 9: "Sorry, I do not know about this report, but we have future visions to overcome this obstacle in the local translation market. I also believe that more specific and efficient training is required in this field."

> Interviewee 10: "I do not have any idea about this report and the translation system of Saudi Arabia needs to be more unified and specific, in order to gain growth and profitability."

The majority of professional translators interviewed did not know about the ISO 17100 report, which highlights the requirements for translation services and terminology management. This shows a lack of awareness of ISO standardization in the Saudi Arabian market, which could hamper growth. A lack of standard requirements for translation skills could lead to a lack of structure in the market. The lack of awareness of professional translation skills negatively affects training in universities and the translation market. The findings of the study also highlighted that a large number of organizations in Saudi Arabia are unaware of the working standard provided in the ISO report. This low awareness and lack of professional translators in Saudi Arabia have made it difficult for the country to adopt the working standard provided in the ISO report. People do not have professional training in translation services, but the lack of high-quality English courses also hampers the nation's growth. The low desire of organizations to adopt these ISO standards suggests that one of the barriers to adopting them is internal resistance. Moreover, lack of expertise and the high cost of implementing ISO standards are other challenges in ISO

implementation. These challenges hamper the overall quality of translation services offered by Saudi Arabia (Al-Mijrab and Elwalda, 2020).

This theme also examined the extent to which the Saudi Chamber of Commerce supports the use of CAT tools for someone looking for a job in the translation market. The majority of professional translators interviewed said the Saudi Chamber of Commerce did not support the use of CAT tools, highlighting a lack of professional consultancy in the translation market.

Previous studies have similarly shown that the Saudi Chamber of Commerce does not promote the use of CAT tools in translation services (Almutawa and Izwaini, 2015, pp. 382-414). The cost associated with the use of CAT tools is very high, which may be one of the reasons for its low use in the public and private sectors of Saudi Arabia. Along with this, Arabs are resistant to the adoption of CAT tools even today when translators across the world are using them to strengthen their communications. As the Arabic script goes from right to left, Arabic translators face difficulties translating texts with the help of Western-designed CAT tools, limiting their use and application in the translation services of Saudi Arabia and other Arabic-speaking nations (Alotaibi, 2020, pp. 1-13).

Furthermore, a more effective adoption of CAT tools requires trained staff and technicians who can help translators working in Arab countries to translate texts. The overall implementation of CAT tools requires high costs, which may hamper their use in some countries. The cost associated with these tools restrict universities and schools in Saudi Arabia and other Arab nations from using them from the beginning level for training purposes. All these challenges associated with CAT tools have increased the resistance of Arab nations to adopt them. Students at the university level are not provided with training in CAT tools, which negatively shapes their perception about the adoption of these tools in their professional carrier (Mohammed et al., 2020, pp. 1084-1095).

8.3.3 Theme 3: Procedures for Translator Certification

Theme 3 addressed the sixth and seventh interview questions, evaluating the procedures to become certified in the private and public sectors. The following are interviewee responses:

> Interviewee 1: “In my opinion, in order to become a certified translation agency in the private sector of Saudi Arabia, one needs to have a certificate degree in the English language. On the other hand, in the context of requirements for the public sector, being certified as bilingual is enough to work as a translator.”

> Interviewee 2: “Being bilingual is enough to work as a translator.”

Interviewee 3: “I believe that you need an academic degree like BA, MA in English or in any other language subject in order to work as a translator in both the private and public sector of the Saudi translation market.”

Interviewee 4: “I believe that in order to work as a translator in the private sector, one needs to have three years of experience after graduation from a non-Arabic language programme, and the applicant must be over 21 years old, while in the public sector, one needs to have a translation certificate with any degree like BA, MA, and PhD.”

Interviewee 5: “For the private sector, the applicant needs to apply to two public institutions: the Saudi Chamber of Commerce and the Saudi Ministry of Labour. There is a common requirement for both of them to get a work permit, as mentioned on their website. [If seeking] to become a translator in the public sector, one needs to pass the theory test and must hold a minimum of three years’ translation experience.”

Interviewee 6: “In order to become a translator in Saudi Arabia in the private sector, there is no requirement of CAT tools to meet the condition of certification, and being bilingual is enough to be certified to work in the Saudi translation market. In the context of the public sector, the individual needs to be more than 21 years [of age] and must have at least three years’ work experience.”

Interviewee 7: “The private sector requires bilingual individuals to work as translators in the private sector firms and the requirements for translators slightly differ in the public sector.”

Interviewee 8: “I think that the certificate of bilingual is enough to work for the position of a translator.”

Interviewee 9: “I believe that there are no unified terms and conditions for public sectors, and for sure they do not use translation technology that is being used in the professional translation market yet.”

Interviewee 10: “The person applying for the post of the translator must have a degree in any language and sometimes the private firms also conduct a test in order to assess the capabilities of the applying candidates.”

The general view of interviewees was in order to work as a translator in the private sector, one is required to have a degree in any language subject and must be bilingual. On the other hand, the majority of participants also believed that to become a translator in the public sector, one must have work experience and pass an eligibility test. Eligibility or recruitment criteria for translators in the public and private sectors

have some features in common, but others are different. Overall, the responses show the lack of professional requirements to become translators in Saudi Arabia.

8.3.4 Theme 4: Opportunities to Use CAT Tools

Theme 4, constructed in light of Interview Questions 5 and 9, considered the opportunities for graduate students to use CAT tools and the extent to which these tools were used in localization. A major issue was a lack of translation service providers in Saudi Arabia. The following are relevant replies:

> Interviewee 1: "A lot of work needs to be done related to localization, but there is no translation specialist [who] can cover all the Saudi translation market needs. Localization in Saudi translation market is not yet [common]."

> Interviewee 10: "Saudi translation market does not have this kind of service yet. I think I can make use of it in future work. Also, I can find non-Saudi translators to help since Saudi universities do not offer any courses related to localization. Besides, there is no training session in this regard."

> Interviewee 5: "We do not have Saudi translator specialists in this professional field yet."

Interviewees 2, 3, 7, 8, and 9 were not even aware of localization and translation tools. Regarding opportunities for graduate students to use CAT tools during translation, the interviewees gave the following replies:

> Interviewee 1: "Saudi students who graduated from Saudi universities are not given the opportunity to develop the use of technology during [the] translation process."

> Interviewee 9: "There is no specific training centre in Saudi Arabia that offers training workshops on the use of CAT tools during translation in the Saudi market. They may find these workshops available online or outside sources as self-learning. However, nowadays we have some professional academic translators that graduated from [the] USA and UK. They are familiar with CAT tools and machine translation, but they are not yet authorized to offer training courses outside their academic institutions."

> Interviewee 10: "Most of the graduated Saudi translator applicants from Saudi universities are unable to use the needed programmes related to translation studies."

These responses show that interviewees did not believe there were opportunities for graduate students to develop their use of CAT tools. However, they also

recommended crucial ways to develop the use of these tools among Saudi Arabian graduate students:

> Interviewee 8: "Self-learning or outside sources as private training session online."
>
> Interviewee 4: "They have to develop the use of technology during the translation process."
>
> Interviewee 6: "There are some training sessions that might be offered by our professional translators but not in [an] advanced level and it is for our translators' groupwork as a project to develop translation quality in terms of translation market competitions."

Graduate students from Saudi Arabian universities were thus identified by the interviewees as lacking opportunities to use CAT tools. However, there are ways this problem could be remedied. The interviewee findings revealed the ineffective use of CAT tools in the translation sector of Saudi Arabia. Previous findings have shown that the teachers who guide students in translation studies do not have practical knowledge of translation pedagogy. The students are just taught English when they enrol for a bachelor's or master's degree in English. The teachers believe that providing knowledge about English will help the students become professional translators.

Moreover, the course content and the low level of practical work in this field have decreased the use of CAT tools in Saudi Arabia (Al-Ahdal et al., 2017, pp. 45-53). Students enrolled in translation studies in Saudi Arabia are aware of the overall low translation standards of the nation. These low standards of translation services and the resistance in the country to adopt CAT tools will greatly reduce the overall career opportunities for professional translators in the future. Despite various advancements in CAT tools in recent years and their increased efficiency in editing and translating Arabic, the translation sector of Saudi Arabia suffers from a lack of practical implementation of these tools (Alotaibi, 2020, p. 10).

8.3.5 Theme 5: Nature of Translation and Familiarity with CAT Tools

Constructed in light of Questions 8, 10, and 11, Theme 5 highlighted the focus of Saudi Arabian translators on the nature of the translation process, the current level of translators who graduated from an English department (see Section 5.9), and students' familiarity with CAT tools. The analysis showed graduate students had a wide range of expectations:

> Interviewee 3: "Being able to act as professional translators. Being able to access very common online dictionaries. Being able to use the needed technology during

> translation, such as search engines, and machine translation, such as Google. Being able to use technology to save translated documents. Translators need to be ready to improve [their] translation skills."
>
> Interviewee 7: "My expectation is to have training sessions inside public sectors such as court, police, and companies dealing with embassies and international schools in Saudi Arabia."
>
> Interviewee 8: "My expectation from Saudi universities is to meet the professional translation levels which are already being applied in Western translation studies."
>
> Interviewee 10: "Recently, Aramco established their own translation centre to [use] translation memory and machine translation to unify their translation product in all market industries around the world. In fact, my expectation is to have [an] internship for our novice translator at that centre to develop a Saudi translation programme in order to meet the professional translation market needs to be adopted in Saudi Arabia by 2030."

The majority of responses highlighted the greater use of translation theory in contrast to practice during training. The views of Interviewees 1, 3, 4, 5, 8, 9, and 10 aligned with this, and Interviewee 8 provided a further insight:

> On translation theory, and it is hard to convince them to learn about the use of CAT tools or machine translation. Some of them were surprised when they started using technology during translating and some of them could not believe the way the use of machine translation during the translation process is helpful.

Interviewees mentioned various tools that students should be familiar with to compete in the Saudi Arabian translation market:

> Interviewee 1: "SDL Trados, OCR to make documents readable and modify PDF files."
>
> Interviewee 2: "They should be familiar with computer use, Windows features or Mac [operating] system. Being able to translate different file formats."
>
> Interviewee 5: "There is a need for a localization [expert], web translator, video game translator, audio translation, and conference translator using technology. These means are still not available in most Saudi universities. There is a need for courses related to the ability to use technology by professional translators worldwide."

Interviewee 6: “Being able to create translation memory, update translation memory, use translation memory, familiar with machine translation, able to learn how to convert unreadable documents and being able to use email in groupwork.”

These views reflected a need in Saudi Arabia for greater familiarity with different CAT tools.

8.3.6 Theme 6: Obstacles to Using CAT Tools in Practice

The sixth theme of the study analysed the views of the participants about the significant challenges faced in the implementation of CAT tools in the translation sector of Saudi Arabia:

Interviewee 1: “I have felt that the lack of the correct type of translation software is the main challenge for me that has deteriorated the present condition of the language translators in Saudi Arabia.”

Interviewee 2: “The difference in the culture has created problems for the Saudi Arabian workers to translate the foreign language in the correct manner.”

Interviewee 3: “The issue of lack of interest for technological advancement in the Saudi Arabian translator community is the major challenge.”

Interviewee 4: “Saudi Arabian translators require formal training regarding the different types of pronunciation and grammatical rules that are followed in the different types of languages such Saudi Arabian and Western language.”

Interviewee 5: “The gender differences in the Saudi Arabian community that has caused a critical challenge for the translators to adopt new techniques.”

Interviewee 6: “I believe that the translation industry of Saudi Arabia is experiencing challenges in terms of lack of capital investment towards the purchasing of the advanced linguistic databases.”

Interviewee 7: “Saudi Arabian translators do not have enough knowledge regarding computer technology for translating the Arabic piece of text into the targeted foreign language.”

Interviewee 8: “A lack of communication-related competencies among the instructors is a major challenge.”

Interviewee 9: “I feel that the teaching ideology of the trainers in the translation industry is not common, and this leads to the challenge of developing less professionally skilled translators.”

Interviewee 10: “The Saudi Arabia-based translation market experiences challenges in terms of the level of professional training programmes.”

The interview responses revealed that gender stereotypes, lack of technological advancements, communication, and ineffective training programmes are significant challenges witnessed in the Saudi Arabian translation market. The literature supports these findings, stating that neglect by the country and low investment in the translation sector are major barriers to growth in this sector; furthermore, there are few or no skilled teachers or professionals who can guide new students in translating a text using CAT tools at a Saudi university (Omar et al., 2020, pp. 287-292). Further evidence of this can be seen in Section 2.9.3, Section 2.9.4, Section 2.9.5, Section 2.9.6, and Section 2.9.8.

The participants' comments suggested that in order to improve translation technology use among Saudi Arabian translation students, students should have more training and internship opportunities involving CAT tools. Effective training sessions, professional guidance, and cultural training are all steps that could increase the quality of translation services.

8.3.7 Theme 7: Steps Needed to Improve Translation Services

The seventh and last theme of the study analysed the steps that need to be taken by Saudi Arabia to improve its translation services:

> Interviewee 1: "The introduction of computer-aided translation, abbreviated as CAT tool, will improve the translation proficiency of the Saudi organizations."
>
> Interviewee 2: "There is a need to establish the translator training programmes within the Saudi Arabic language."
>
> Interviewee 3: "The only thing that can improve the current condition of the Saudi Arabian translation market is the implementation of advanced translation software such as Trados Studios."
>
> Interviewee 4: "…online graduate programmes [should be] required to […] improve the professionalism as well as language interpretation and translation competence among the graduates in the Saudi Arabian translation institutions."
>
> Interviewee 5: "For improving the translation efficiency, the grammatical details and rules of Saudi Arabic and foreign languages must be clearly explained to the translation graduates."
>
> Interviewee 6: "The use of computer systems must be increased for handling the translation process in Saudi Arabia."
>
> Interviewee 7: "For improving the efficiency of the Saudi Arabian language translation market, it is essential to offer cultural training to the graduate translators."

> Interviewee 8: “For improving the effectiveness of the translation process of the Saudi Arabian institutions, it is essential to enforce a collective work culture where the males, as well as females, are capable of having opportunities to excel in the translation sector.”
>
> Interviewee 9: “Inclusion of advanced translator software will help in enhancing the scope of CAT tools in Saudi Arabia.”
>
> Interviewee 10: “The use of computer-mediated communication to enhance the flow of innovation and new ideas.”

The interviewees’ comments suggested that in order to enhance the operations of the translation sector, the government of Saudi Arabia should focus more on computer-mediated communication, which could help meet Saudi Vision 2030 goals. Effective training sessions, professional guidance, and cultural training are other steps that could increase the quality of translation services.

8.4 Quantitative and Qualitative Findings

The researcher examined the results through situation analysis, which involves analysing all the factors involved in a situation, using the rhetorical formula “Who is saying what to whom, why, how, by what means, for what purpose?” as proposed by Nord (1991, p. 8). The researcher also employed thematic analysis, which involves analysing “chunks” of data. These chunks could “consist of several paragraphs, a sentence, a phrase or even single words or terms. Answers to open-ended questions might refer to more than one idea (or ‘theme’) and so multiple codes might be assigned to one response” (Saldanha and O’Brien, 2013, p. 190). The researcher employed keywords from responses, and second-level coding was used to look at emerging patterns. After this process, the researcher examined “the data to cross-examine the codes applied, identifying overlap between coding categories or grey areas” (p. 190). For more details on this process, see Section 8.3.1, Section 8.3.2, Section 8.3.3, Section 8.3.4, Section 8.3.5, Section 8.3.6, and Section 8.3.7.

8.5 Chapter Summary

This chapter discussed the data collected through a questionnaire, training session, follow-up questionnaire, and observation cards involving Saudi Arabian BA, MA, and PhD students (see Section 8.2). The researcher also interviewed their instructors and freelance Saudi Arabian translators (see Section 8.3). The results showed a lack of applied translation courses and training in the public and private sectors. The majority of instructors did not have a background in employing translation software at

universities. Instead, they were mostly academics who had trained in other fields and intended to subsequently train to use CAT tools to meet market needs (see Section 2.9.4 and Section 2.9.5).

Chapter 9
Conclusion

9.1 Introduction

This study evaluated the extent to which pedagogy and translator training in Saudi Arabian universities prepares translators to use CAT tools in the local translation market. This chapter directly answers each of the research questions (see Section 9.2), offers implications for translation and teaching practice (see Section 9.3), and recommendations for future research (see Section 9.4) based on the findings and limitations of the study.

9.2 Answers to Research Questions

9.2.1 Answer to Research Question 1

Research Question 1 asked, "What are the current gaps between Saudi Arabian universities and the needs of the Saudi Arabian translation market in terms of intention to use CAT tools?" The results showed a significant positive relationship between attitude toward translation technology and intention to use it (see Section 6.4.6), and universities showed an intention to use CAT tools in the future (see Chapter 7). Nevertheless, these tools were normally not provided to Saudi Arabian undergraduate students at the time of the study. In other words, the study did not find a gap between universities' intention to use these tools and market needs, answering the first research question, but the study did find a gap between market needs and the actual use of these tools in the classroom.

9.2.2 Answer to Research Question 2

Research Question 2 asked, "How can a translation technology user in Saudi Arabia develop awareness of modern CAT tools?" The participants suggested that in order to increase the use of CAT tools among Saudi Arabian translation students, more training and internship opportunities involving those tools should be provided. Steps that might improve translation services in this regard include effective training sessions, professional guidance, and cultural training. This finding supports previous research exploring Western translation studies. For more details, see Section 2.9.3, Section 2.9.4, Section 2.9.5, Section 2.9.6, and Section 2.9.8.

9.2.3 Answer to Research Question 3

Research Question 3 asked, "Are Saudi Arabian undergraduate students trained to use appropriate CAT tools to meet the needs of the Saudi Arabian translation market?" According to the data, for the most part, Saudi Arabian universities were not training

undergraduate students to use CAT tools that would help students meet market needs once they graduated (see Section 2.2, Section 2.8, Section 2.9.2, Section 7.3, and Section 9.3).

9.2.4 Answer to Research Question 4

Research Question 4 asked, "Are professional translators trained to apply appropriate CAT tools to meet the needs of the Saudi Arabian translation market?" The data suggested that, unlike undergraduate university students, professional translators were being trained in Saudi Arabia to use appropriate CAT tools to meet market needs (see Section 2.12.7 and Chapter 8).

9.2.5 Answer to Research Question 5

Research Question 5 asked, "How effectively are CAT tools used in Saudi Arabian universities and the Saudi Arabian translation market?" According to the data collected by the present study, universities in Saudi Arabia were not providing students with access to professional CAT tools, unlike universities in the United Kingdom and United States (see Section 5.11). Some interviewees working in the industry reported using CAT tools, while others reported not using them. Additionally, they could not find novice translators qualified to use these tools. This absence of new translators entering the market with CAT tool skills was likely due to the above-mentioned lack of training at universities.

9.3 Implications for Practice

The results of this study have several implications for translation studies, CAT tool training, and the Saudi Arabian translation market. The study analysed professional Saudi Arabian translators' private work as freelance translators, public work for the government, and CAT tool awareness. The results revealed a need for unified Arabic terminology to keep up with ISO terminology standards (see Section 8.3.2). This finding confirms claims by previous researchers, such as Pym (2013), of the need to examine translators' experiences with CAT tools at a basic level.

The relationship between user attitude and behavioural intention to use CAT tools was investigated in this research in two ways (see Section 8.2.1). One was through a questionnaire, the results of which were analysed quantitatively, regarding the acceptance of CAT tools in Saudi Arabia (see Chapter 6). The fact that the research focused on statistical rather than qualitative analysis (i.e., not combinations occurring by chance) meant there are no highlighted coincidental co-occurrences of status for the use of translation technology in Saudi Arabia in the public or private sector. The views of Saudi Arabian translators were also sought through interviews (see Chapter

5). Lines were copied into Microsoft Excel and filtered to perform quantitative and qualitative descriptive analysis of the data sample.

A mixed-methods approach was employed to investigate CAT tool acceptance (see Chapter 4). The quantitative analysis of the questionnaire with the UTAUT (see Chapter 6) provided reliable results and informed the qualitative analysis (see Chapter 7). Finally, the use of quantitative measurements in allocating the UTAUT (evaluative and discourse) to translation nature terms based on the highest percentage of meaning in their level of awareness of using technology provided a means to measure the congruency of the selected items of the model in this research. This supports previous research exploring Western translation studies (see Section 2.10.3, Section 2.10.4, and Section 2.11).

The findings highlighted the need for accuracy and consistency in translation, which could be improved by using CAT tools such as translation memories and machine translation (see Section 5.5). Suggestions for how CAT tools could meet the needs of the Saudi Arabian translation market were identified through thematic analysis (see Section 8.3).

The curricula in undergraduate applied translation studies in most Saudi Arabian universities were found to be insufficiently challenging (see Section 1.2 and Section 2.9.4). Most Saudi Arabian course objectives are not only ill-designed but also not relevant to CAT tools. In addition, there is not enough practical training focusing on being competitive internationally or keeping up with contemporary developments. Courses have insufficient length, variety, CAT tools, and e-learning resources (see Section 2.4 and Section 2.9.2).

In relation to market needs, this study has discussed the five most prominent discourse patterns regarding the acceptance of CAT tools (see Section 4.3.2). It has provided examples of technology in which these meanings were uncovered and linguistically analysed via frequency function without measuring the quality assurance of the translated text. It has also considered the impact of applied translation studies from existing literature to support the researcher's observations of Saudi Arabian translation needs. For example, undergraduate students could use free open-source CAT tools, such as MateCat or SmartCat, for an assignment.

This study has proposed CAT tools that could be useful in future research and practice. The first are computer application courses, as offered at the University of Leeds, to meet the needs of English-Arabic translators and employers in Saudi Arabia. The study assessed the experience of translation graduates (see Section 6.2) and their overall satisfaction with their CAT tool training to find out which skills and tools introduced by the programme were most useful, for example, which websites,

organizations, dictionaries, directories, and centres the programme introduced; whether graduates found their acquired CAT skills to be useful in translation; and which CAT skills were required by the translation job market (Al-Jarf, 2017, p. 2). For more details, see Section 2.11, Section 2.4, Section 2.7, and Section 2.8.

Translation students at Prince Sattam Bin Abdulaziz University in Saudi Arabia take two courses on computer applications, but the interviews indicated these courses were inadequate to prepare graduates for the job market (see Section 8.3.4). An introductory course discussed what students could do in the industry in general. Typically, students are merely introduced to computer basics and software such as Microsoft Word, PowerPoint, and Excel (Al-Jarf, 2017, p. 1). For more information, see Section 4.6 and Section 4.9.

Third, it is recommended that Saudi Arabian universities and professional translation organizations cooperate to offer placements to trainee translators so they have real-life opportunities to work with CAT tools, in keeping with the recommendations of Al-Khatib (2005, p. 105).

9.4 Suggestions for Future Studies

This study showed the importance of the UTAUT as a measure of accuracy and consistency for CAT tools and translation studies, which could open up new avenues for research (see Section 6.4). The findings could be further explored and applied in prescriptive translation studies. In practical terms, this research suggests that translators should conduct a basic technological exploration of CAT tools before using them in actual translations to achieve better accuracy and consistency. For more details, see Section 2.3, Section 2.4, and Section 2.12.

Future studies could apply the theoretical framework of this study to explore the use and acceptance of CAT tools among language service providers in Saudi Arabia. Studies could adopt the functionalism of the UTAUT to account for the acceptance of CAT tools in their quantitative analysis and interpret the qualitative analysis of factors and items (e.g., behavioural intention).

This study could also be revisited by altering some of the choices it made, such as the process in a given translation project, the association criteria employed, and the CAT tools investigated in the Saudi Arabian translation market. Another suggestion is to add more natural phenomena to the proposed list of nature-related translation technology criteria for using CAT tools, since ISO standardization for translated terminology could be introduced as a database or unified translation terms in Saudi Arabia. Then, researchers could apply the same methodology to yield more patterns

of translation technology features in the translation project and provide more insights into the Western translation technology features within this theme.

This study's mixed-methods approach to analysing the use of translation technology could be useful to future studies on quality assurance and language service provider recruitments in Saudi Arabia as two of the UTAUT items (Venkatesh et al., 2003). The same pre-methodology and methodology tasks could also be applied to other themes (e.g., the UTAUT as a major theme, as adopted from Venkatesh et al., 2003).

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Appendix

Questionnaire Factor and Variable Formulation

A. Performance Expectancy

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Computer assisted translation (CAT) tools are useful in my job.					
2	Translation software other than CAT tools is useful in my job.					
3	CAT tools are useful to identify translation time and costs.					
4	Translation software other than CAT tools is useful to identify translation time and costs.					
5	CAT tools are useful for translation project management.					
6	Translation software other than CAT tools is useful for translation project management.					
7	CAT tools enable me to work more quickly.					
8	Translation software other than CAT tools enables me to work more quickly.					
9	CAT tools increase my productivity.					
10	Translation software other than CAT tools increases my productivity.					
11	CAT tools help save time and costs on a translation project.					
12	Translation software other than CAT tools helps save time and costs on a translation project.					

B. Effort Expectancy

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
13	CAT tools are easy to understand					
14	Translation software other than CAT tools is easy to understand.					
15	I have a strong mastery of CAT tools.					
16	I have a strong mastery of translation software other than CAT tools.					
17	I think that CAT tools are simple.					
18	I think that translation software other than CAT tools is simple.					
19	I think mastery of techniques for using CAT tools is easy to acquire.					
20	I think mastery of techniques for using machine translation is easy to acquire.					

C. Social Influence

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
21	My colleagues think that I should use CAT tools.					
22	My colleagues think that I should use translation software.					
23	My translation teachers think that I should always use CAT tools in my translation work.					
24	My translation teachers think that I should always use translation software other than CAT tools in my translation work.					

25	My translation project supervisor supports me using CAT tools.					
26	My translation project supervisor supports me using translation software other than CAT tools.					
27	Experts in the translation industry in Saudi Arabia encourage others to use CAT tools.					
28	Experts in the translation industry in Saudi Arabia encourage others to use translation software other than CAT tools.					
29	My translation teachers provide content that uses CAT tools.					
30	My translation teachers provide content thatuses translation software other than CAT tools.					

D. Facilitating Conditions

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
31	I have used CAT tools during at least one translation project.					
32	I have used translation software other than CAT tools during at least one translation project.					
33	I have made significant use of CAT tools in practising translation.					
34	I have made significant use of translation software other than CAT tools in practising translation.					
35	I have been trained to use CAT tools at my Saudi university.					
36	I have been trained to use translation software other than CAT tools at my Saudi university.					
37	I have been taught about the use of translation memory in theory.					
38	I have been taught about the use of translation memory in practice.					
39	I make use of online open-source translation tools, such as MateCat, during the translation process.					
40	I have received practical training in the use of translation memory.					

E. Behavioural Intention to Use

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
41	I intend to use CAT tools in the future.					
42	I intend to use translation software other than CAT tools in the future.					
43	I am planning to use CAT tools in my next training session, in order to be able to use them in the future.					
44	I am planning to use translation software other than CAT tools in my next training session, in order to be able to use it in the future.					
45	I intend to use CAT tools in my next translation project.					
46	I intend to use translation software other than CAT tools in my next translation project.					
47	I intend to get practical training in the use of CAT tools.					
48	I intend to get practical training in the use of translation software other than CAT tools.					

F. Attitude

Item		5	4	3	2	1
		Very Good	Somewhat Good	Neither Bad nor Good	Somewhat Bad	Very Bad
49	Using CAT tools is a bad/good idea.					

Item		5	4	3	2	1
		Very Wise	Somewhat Wise	Neither WisenorFoolish	Somewhat Foolish	Very Foolish
50	Using CAT is a foolish/wise idea.					

Item		5	4	3	2	1
		Very Much Like	Somewhat Like	Neither LikenorDislike	Somewhat Dislike	Very Much Dislike
51	I dislike/like the idea of using CAT tools.					

Item		5	4	3	2	1
		Very Much Pleasant	Somewhat Pleasant	Neither Pleasant nor Unpleasant	Somewhat Unpleasant	Very Unpleasant
52	Using CAT tools is unpleasant/pleasant.					

G. Perceived Behavioural Control

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
53	Whether or not I use CAT tools is entirely up to me.					

Item		5	4	3	2	1
		Complete Control	A Lot of Control	A Middling Amount of Control	A Little Control	No Control
54	How much personal control do you feel you have over using CAT tools?					

Item		5	4	3	2	1
		Complete Control	A Lot of Control	A Middling Amount of Control	A Little Control	No Control
55	How much do you feel that using CAT tools is under your control?					

H. Self-Efficacy (Ability)

Item		5	4	3	2	1
		Definitely	Largely	To Some Extent, to Some Extent Not	Largely Not	Definitely Not
56	I believe I have the ability to use CAT tools.					

Item		5	4	3	2	1
		Very Incapable	Somewhat Incapable	Neither Capable nor Incapable	Somewhat Capable	Very Capable
57	To what extent do you see yourself as being capable of using CAT tools?					

Item	5	4	3	2	1

		Very Unconfident	Somewhat Unconfident	Neither Confident nor Unconfident	Somewhat Confident	Very Confident
58	How confident are you that you will be able to use CAT tools?					

Item		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
59	If it were entirely up to me, I am confident that I would be able to use CAT tools.					

I. Experience

Item		5	4	3	2	1
		Very High Experience	Fairly High Experience	Neither High nor Low Experience	Fair Experience	Low Experience
60	Compared to students who study translation, how much experience do you have using CAT tools?					

Item		5	4	3	2	1
		Very High Experience	Fairly High Experience	Neither High nor Low Experience	Fair Experience	Low Experience
61	Compared to other translators in general, how much experience do you have using CAT tools?					

J. Demographics

62 Number of years working in traditional translation (academic or other work).

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years
- 6 years
- 7 years
- More than 7 years

63 Number of courses taken in applied translation or computer-assisted translation.

- 1 course
- 2 courses
- 3 courses
- 4 courses
- 5 courses
- More than 5 courses

64 Study level

- Bachelor's
- MA
- PhD

65 Gender

- Male
- Female

66 Saudi university that you graduated from

- King Saudi University
- Princess Nora bint Abdul Rahman University
- Al-Imam Mohammad Ibn Saud Islamic University
- Prince Sattam bin Abdulaziz University
- Qassim University
- King Abdulaziz University
- King Khalid University
- Other

K. Interview Questions

1) Based on your experience, would you please outline the Saudi translation market for a given project?
2) In terms of translation and project management, are translators and their clients the only stakeholders during the translation process in the Saudi market?
3) To what extent can the Saudi Ministry of Commerce and Investment apply the ISO 17100 report, which details the international standard operating procedure for translation service providers?
4) To what extent is the Saudi Chamber of Commerce able to support the use of computer-assisted translation (CAT) tools?
5) To what extent is the Saudi Chamber of Commerce able to support training in the use of translation software programmes for the Saudi translation market?
6) To what extent do you think translators should be able to use translation software and/or CAT tools during localization?
7) Would you please provide me with details of recruitment procedures for your relevant private sector to ensure that translators are properly certified?
8) Would you please provide me with details of the translation service provider's recruitment in the public sector in terms of using technology?
9) What are your expectations from a Saudi translation student who graduates from an English department as a beginner Saudi translator?
10) What do you expect the Saudi Ministry of Culture to do to encourage the use of CAT tools by Saudi translators?
11) To what extent do you expect graduating Saudi translation students will have an opportunity to develop the use of translation technology during the translation process in the market?
12) What kind of technology tools do you think students should be familiar with to become good competitors in the Saudi translation market?

Addressing the Gaps between the Translation Industry and Translation Pedagogy in Saudi Arabia

Consent to take part in:

Addressing the Gaps between the Translation Industry and Translation Pedagogy in Saudi Arabia by using Technology to translate from English <> Arabic: Saudi Students of Translation by using Computer-assisted Translation (CAT) tools

	Add your initials next to the statement if you agree	
I confirm that I have read and understood the information sheet dated 01/09/2019 explaining the above research project and I have had the opportunity to ask questions about the project.		
I understand that my participation is voluntary and that I am free to withdraw in two weeks after the participation without giving any reason and without there being any negative consequences. In addition, if I do not wish to answer any particular question or questions, I am free to decline. As a result of withdrawal, the data provided will not be used against my will.		
I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified in the report or reports that result from the research. I understand that my responses will be kept strictly confidential.		
I agree for the data collected from me to be stored and used in relevant future research in an anonymised form.		
I understand that other genuine researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form		
I understand that other researchers may use my words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.		
I understand that relevant sections of the data collected during the study, may be looked at by auditors from the University of Leeds where it is relevant to my taking part in this research. I give permission for these individuals to have access to my survey or records.		
I agree to take part in the above research project and will inform the lead researcher with my contact details during the project and, if necessary, afterwards.		

Name of participant	
Participant's signature	
Date	
Name of lead researcher	
Signature	
Date*	

*To be signed and dated in the presence of the participant. Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/ pre-written script/ information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be kept with the project's main documents which must be kept in a secure location.

Ethical approval Form:

The Secretariat
University of Leeds
Leeds, LS2 9JT
Tel: 0113 343 4873

Email: ResearchEthics@leeds.ac.uk

UNIVERSITY OF LEEDS

Hamad Aldossary

School of Languages, Cultures and Societies

University of Leeds

Leeds, LS2 9JT

Faculty of Arts, Humanities and Cultures Research Ethics Committee

University of Leeds

17 October 2023

Dear Hamad

Title of study	**Addressing the Gaps between the Translation Industry and Translation Pedagogy in Saudi Arabia**
Ethics reference	**FAHC 18-067 response 2**

I am pleased to inform you that the above research application has been reviewed by the Faculty of Arts, Humanities and Cultures Research Ethics Committee and following receipt of your response to the Committee's comments, I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date
FAHC 18-067 Required_summary_how each point has been addressed.docx	2	02/08/19
FAHC 18-067 summary showing how each point has been addressed.docx	1	27/03/19
FAHC 18-067 Aldossary_application_ethical_27.7.19.doc	3	02/08/19
FAHC 18-067 Aldossary_email for participants_25-7-2019 RE 1.8.19.docx	3	02/08/19
FAHC 18-067 Aldossary_Sample email for participants_interview_REV 31.1.19.docx	2	27/03/19
FAHC 18-067 Aldossary_Information_Sheet REV 1.8.19.doc	3	02/08/19
FAHC 18-067 Aldossary_Participant consent form 26.3.19.doc	2	27/03/19
FAHC 18-067 Aldossary_Interview_questionnaires_26.3.2019.docx	2	27/03/19
FAHC 18-067 Aldossary_Low-Risk-Fieldwork-25-7-2019.doc	3	02/08/19
FAHC 18-067 Survey_translator_training_programmes	1	01/03/19

Committee members made the following comments about your application:

- Reviewers suggest removing the final sentence of section 3 on the information sheet so as not to confuse participants.

Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval as all changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation and other documents relating to the study, including any risk assessments. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited. There is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Jennifer Blaikie

Senior Research Ethics Administrator, the Secretariat

On behalf of Prof Robert Jones, Chair, AHC FREC

CC: Student's supervisor(s)

Participant Information Sheet

The title of the research project

Addressing the Gaps between the Translation Industry and Translation Pedagogy in Saudi Arabia

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

1. What is the purpose of the project?

The main aim of the present study is to analyse the gaps between translation pedagogy at Saudi universities and the needs of the professional translation market in Saudi Arabia. The study will mainly focus on determining the methods and techniques that can be offered by Saudi university translation programmes and the use of technology in the Saudi translation market. The study will also seek to identify different training courses for translation technology offered to both Saudi universities and the translation market.

The main objectives of this study are as follows:

1. To evaluate the existing training for translation technology offered by Saudi universities.
2. To identify and address the gaps between translation pedagogy at Saudi universities and the needs of the translation industry in Saudi Arabia.
3. To investigate new methods and techniques for translation education which could be employed at Saudi universities translation training.
4. To examine the implementation of translation pedagogy in the translation industry and universities in Saudi Arabia.

2. Why have I been chosen?

This is a PhD research project conducted by Hamad Aldossary who is currently a student at the University of Leeds, United Kingdom. As I currently study translation, your participation will help me to improve the performance of Saudi translation. It will help me become a good competitor in the translation field and enable me to meet

the professional level. Your participation will provide confidential result for my research.

3. What do I have to do? / What will happen to me if I take part?

The interviews will address the status of the Saudi translation Market.

Students: Each session will take 25 Minutes.

Saudi undergraduate and graduate students in both a Saudi university and Leeds University will participate in five sessions which will include the following activities:

1- Survey research. This will allow the researcher to decide whether the student is eligible for the training course (the selection will be based on the students' academic history in translation; the selected students will be informed about their eligibility at the end of the survey.)

2- Training course. This will be divided into three sessions. The first session is theoretical; the researcher will present the Computer-Assisted Translation (CAT) tools. The second session will demonstrate the way one of the CAT tools called MateCat can be used as an intervention step. The third session will be practical, where the students will be allowed to put into practice what they learned in the two first sessions. At the end of this session, the researcher will collect observation cards.

3- Follow up survey.

Professional translators: The interview will take 15 Minutes.

Saudi professional translators will participate in an interview of their choice - by either filling in a questionnaire or answering the same questions in a recorded interview.

- **In addition to presenting and training the students,** the researcher will observe the way students interact and engage in the training sessions for the using of CAT tools. The unified theory of acceptance and use of technology (UTAUT) will be used in the analysis of the relationship between the participation and the contribution of using technology in the translation process outside the classroom.

4. What are the possible disadvantages and risks of taking part?

There are no disadvantages or risks for taking part in this study, but your opinions and experiences are valuable since they will help to make a significant change in the

current status of the Saudi translation market and translation training programmes at some Saudi universities.

5. What are the possible benefits of taking part?

This study will explore the notion that translation software that can promote relevant translation technologies for Saudi translators. It aims to facilitate making this technology available for undergraduate translation programmes at Saudi universities.

This study will also provide information on translation technology to companies engaged in the language industry in Saudi Arabia. It will help inform companies to adopt strategies that can improve the performance of their translators.

As part of this research data collection each, participant will be asked to sign a consent form for the training course to use an online open-source CAT tool. After being surveyed, intervention steps may be considered to benefit you as a participant and enable you to use such technology as a translator.

6. Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part, you will be allowed to keep this information sheet and will be asked to sign a consent form. You can withdraw in the two first weeks of the fieldwork period, which will take place from September to November, with no need to give a reason.

7. Will my taking part in this project be kept confidential? / What will happen to the results of the research project?

Once the interviews are completed, the responses are evaluated and anonymised, and the results will be presented in the thesis. Participants will be asked to sign up to the following: “As a participant, I agree for the data collected from me to be stored and used in relevant future research in an anonymised form.”

Withdrawing

Participants will be allowed to withdraw from the study in the first two weeks of the fieldwork period (September-November). They can inform the researcher of the withdrawal or write a note in their given survey sheets during the participation time. Once the results have been written up for data analysis and published, the participant will no longer be able to withdraw from the study. Anonymity will be kept based on the ethical policy.

Once an interview is completed, the interviewee will be able to contact the researcher (myself) to ask to withdraw their interview data. I will immediately bring this information to the notice of my supervisor. Withdrawals are welcome in the first two weeks of the fieldwork period.

However, during the interview process if any of the participants wants to withdraw and not to proceed further, the researcher will cooperate with the participant as detailed on the consent form.

1. Who is organising/funding the research?

Prince Sattam Bin Abdullaziz University presented by The Saudi Arabian Cultural Bureau, UK.

2. Will I be recorded, and how will the recorded media be used?

If you give your permission for your interview to be recorded, I will do so. Any audio/video recordings of your activities which is made during this research will be used only for analysis and for illustration in conference presentations and lectures. No other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings.

3. Contact for further information

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Intervention Materials:

The training session employed part of a text translated by Professor James Dickins

> For any political party to succeed it must be prepared to stand up for freedom of expression and human rights, to protect the weak, to oppose corruption, to set itself the highest standards, and to act according to these standards. Any party which supports and defends the people will find that it is supported and defended by the people (2016, P. 64).

Contents of Training Session lecture taken from:
This study's researcher presented the video lecture using Microsoft PowerPoint.

> Massimo explains in this video what CAT Tools (Computer-Assisted Translation) are and how this translation software can speed up and improve the quality of translations https://www.youtube.com/watch?v=5GhX1XA_vsA Translation 101- What is a CAT tool? (Access 2019/1/1).