

# The Impact of Machine Translation on the Development of Tourism Translation From the Perspectives of Translators and Experts in Saudi Arabia

Ali Albashir Mohammed Alhaj\*

Department of English, College of Sciences and Arts, Dhahran Aljanoub, King Khalid University, Saudi Arabia

**Abstract**—Regardless of its distinction for touring and tourism communication, the subject of machine translation has not been dealt with regarding tourism investigation. This study aims to bridge this gap in knowledge by exploring machine translation (MT) technology in the development of tourism translation from the perspectives of translators and translation experts in Saudi Arabia. To attain the three objectives of the study, the researcher applied the quantitative approach. For data gathering, a 12-item opinion poll was disseminated among a random sample group that consisted of 80 translators and translation experts who were selected at random from several Saudi universities, top translation services companies, and tourism organizations during the current academic year 1445/AH/2024 CE. The findings of this study discovered that many translators and translation experts had positive perspectives on utilizing machine translation (MT) technology in the development of tourism translation around the world today in general and Saudi Arabia in particular. Moreover, the perspectives of these translators and translation experts on the difficulties and intricacy confronted in applying machine translation (MT) technology in the tourism translation industry were highly positive. Over half of the participants (51.42%) perceived that machine translation (MT) can help overcome obstacles encountered by translators in the field of tourism. The findings revealed that translators and translation experts in the realm of the tourism industry have a promising future thanks to the relationship between machine translation (MT) and tourism translation.

**Index Terms**—machine translation, tourism, perspectives, development, impact

## I. INTRODUCTION

During the latter half century, tourism has grown into one of the globe's most efficacious, economic, and social forces. A greater number of people have gained methods, means, and resources, indeed, the right to take a trip. Moreover, not merely has tourism become more and more commonplace, but it has also inevitably grown both in extent and impact (Hall, 2005; Sheller & Urry, 2004). Moreover, the tourism industry has become one of the biggest and fastest-growing international industries and an influential contributor to both the national and regional economies around the globe (WTO, 1997). Tourism is described by the World Trade Organization (1997) as the events of people visiting and being in locations outside their familiar environment for no more than one successive year for entertainment, trade, and other different reasons. The term "tourism" also describes managing visitors through travel agencies and providing passenger transportation, vehicle rental, lodging, food and beverage, entertainment, and conference services (Woodward-Smith, 2019).

The tourism industry has a great capacity for enhancement to help promote chances for economic growth in local communities (Moscardo, 2008; Briedenhann & Wickens, 2004). Moreover, it's possible for tourism companies today to move from conventional and beneficial programs and incorporate their business into effective tourism business models (Simpson, 2008; Stoddard et al., 2012). This can lessen risk, boost their relationships with shareholders, and in many cases allow for the development of new products and commercial opportunities. However, it cannot be supposed that the same amalgam of methods will operate throughout the tourism industry (Doz & Hamel, 1998; Buhalis, 1998). Companies must consider the preferences of tourists and the customs of local communities along with a good framework for governance that will aid them in evolving into successful business models.

Tourism translation is a growth industry and a promising sector within the field of language services concentrating on the rendering of several types of texts regarding the tourism industry, travel industry, and tourism businesses. This comprises booklets, flyers, postcards, manuals, webpages, tourist guides, announcements, records, and other relevant documentation (Galán-Mañas & Hurtado Albir, 2015; Južnič, 2013). Integration of translation technology in the translation industry in general and in the tourism translation industry, in particular, facilitated the tasks of translators, interpreters, and other translation professionals and highlighted a solution for the complex relationship between

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\* Corresponding Author. Email: [alalhaj@kku.edu.sa](mailto:alalhaj@kku.edu.sa)

technology and those who were looking for a career in the tourism translation industry (Cronin, 2012; Qassem & Sahari, 2023). Moreover, these translation professionals must rely on several parameters involving the type of renderings required and the required level of quality (Drugan, 2013; Lauscher, 2014). As a result, the tourism translator sector should be competent and trained to tender higher quality translations of the target language (TL) receptors' expectations and culture to pave the way for the mapping of possible best practices. In line with the booming development of industrial tourism around the world, translation technology has become one of the most practical and useful tools for multicultural tourism promotion. Beyond question, the rendering of promotional tourist materials (PTMs) is regarded as one of the most rendered forms of text in the modern world. Nevertheless, these types of rendered materials are often criticized for their low standard of quality translations.

Technology has greatly influenced the tourism translation industry. Computer-aided translation (CAT) tools can decrease the cost of tourism translation, save time, develop quality renditions, and enhance fidelity. Moreover, the inclusion of these technologies in the tourism translation industry has plenty of benefits such as improved translation quality, consistency, and accuracy in the translation of tourism promotional materials (TPMs) along with being able to translate faster and more proficiently, thus making the costs of translation more affordable for clients.

Indeed, the impact of utilizing technology on the tourism translation industry has many opportunities and obstacles, and while there is a myriad of benefits, there are also many challenges for translators and the translation industry in the fields of tourism and hospitality.

In today's world, the tourism industry needs to acclimate quickly to ever-changing industry conditions and powerful competition. The integration of translation technology such as machine translation (MT) in the translation industry describes the present situation of tourism promotion being impacted by the advancement of technology. The major objective of this study is to investigate the perspectives of translators and translation experts in Saudi Arabia on the impact of technology in the development of tourism translation and the difficulties encountered in utilizing technological tools in the tourism translation industry. Thus, the purpose of this research is threefold: 1.) to examine the perspectives of translators and translation experts in Saudi Arabia on the impact of MT technology in the development of tourism translation; 2.) to identify the challenges and obstacles encountered in utilizing MT technology in the tourism translation industry; and finally, 3.) to determine these challenges and obstacles can be overcome from a divergent theoretical and practical perspective concerning the technological tools concerning MT technology.

## II. LITERATURE REVIEW

This section of the study is devoted to the theoretical and practical literature on the topic of the study, including machine translation (MT), tourism translation, and previous relevant studies that provide researchers and readers with a great deal of information on the subject matter of the study that helps them completely understand the issue of the study.

### A. Machine Translation Technology (MT)

The most well-known translational technology currently being utilized is machine translation technology (MT) (Way, 2018; Dew et al., 2018). Using software or algorithms, MT renders text from one language to another. The main advantages of MT are its effectiveness, efficiency, and speed which make it an impeccable choice for manipulating tremendous amounts of text (White, 2003; Rivera-Trigueros, 2022).

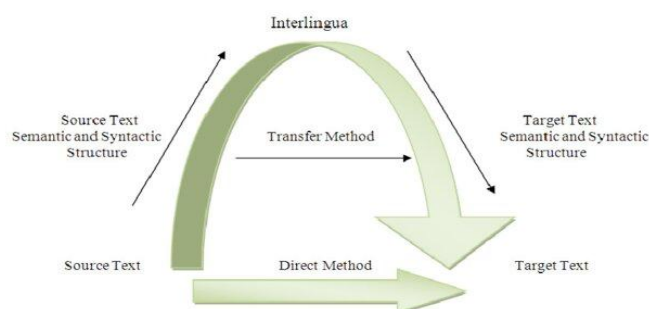


Figure 1. Different Methods of Rule-Based Machine Translation  
(Source: Madankar et al., 2016, p. 848)

These statistical MT approaches apply intricate statistical algorithms that analyze huge amounts of information and produce a monoglot language paradigm for each of the two specific languages (Deumert, 2014; Solorzano, 2009) and a translation paradigm for the translation of words and expressions from one language into another (Fernandes, 2010; Khatib & Ziafar, 2012). A decoder then utilizes these paradigms to interpolate the possibility of the said phrase or the specified expression being rendered from Arabic into English and vice versa, (Koehn, 2009; Hassan, 2009). Moreover, these paradigms take into consideration that new languages are included without the requirement for grammatical rules once synchronous data for the languages are obtainable and at hand (Koehn, 2009; Goutte, 2009). Nevertheless, there are drawbacks and difficulties to using MT such as the systems being constructed by their connected incompetence of

linguistic knowledge and their reliance on their data. Accordingly, any modern terms and formulas will be arduous to render accurately if they are not even close to the data paradigm.

MT is a type of language technology in the area of application computing that contends with the handling of mortal languages for numerous purposes (Kenny & Doherty, 2014; Strzalkowski, 1999). Little research has been carried out on the influence of language technology on tourism translation. However, the current prevalent development in large language paradigms such as ChatGPT has placed language technology as a key issue of the tourism research lineup (Garcia & Pena, 2011; Ducar & Schocket, 2018). Such large language paradigms are predisposed to convert tourism business, paradigms, occupations, businesses, and tourists' decision-making (Carvalho & Ivanov, 2023; Garcia Pena, 2011). As language technology is becoming progressively widespread, MT merits particular focus in the tourism industry.

MT characterizes computer-based proceedings regarding translation. More particularly, computer-aided translation may comprise both hybrid machine translation and technology-enhanced human translation (Tekwa, 2024; Hutchins, 1995; Slocum, 1985). Nevertheless, MT centers on digitizing all language conversion methods and is akin to data processing machines that make translations (Trujillo, 1999; Folaron, 2019). Moreover, Neural MT has become a common method built on artificial neural networks and a large neural computer with an adeptness for effective algorithms (Evans & Aceves, 2016; Reber, 2019).

Translating many text types into the various languages of the tourism industry in general and English language in particular is possible nowadays because of analog-digital conversion and worldwide technological development, associated with innovations in statistical machine translation and the attainability of MT tools like Google Translate, DeepL, Systran, Babylon, Microsoft Translator, Yandex Translate, and Bing among others (Fuentes-Luque & Urbieta, 2020; Neugebauer, 2019; Somers, 2011).

MT is prevalent in business, commercialism, tourism, and education as well as in the learning and teaching of English as a Foreign Language. Moreover, in tourism courses, automatic machine translation can be a beneficial source for students to review their output (Lee, 2020; Niño, 2008). Within the context of tourism, MT facilitates access to advertising communication, promotional tourist materials (PTMs) on webpages, and booklets and bulletins in various languages.

Media platforms, e-tourism, and travel-related platforms have integrated MT, aspiring to improve effectiveness, cross-cultural communication, and intercultural understanding (Lee, 2016; Cenni, 2019). MT is generally employed in translating tour guide material, menus, and tourist guidebooks into English and the like (Míšenský, 2008; Poncini, 2002) in addition to automated question-answering (QA) models for wayfarers, tourists, and travelers to serve specialists, experts, professional staff, and travel guides when dealing with tourists during day-to-day activities (Moubtahij, 2023). In association with other analytical instruments, MT can be extremely valuable for the industrial tourism and hospitality industries when considering business reviews and investor behavior (Levy et al., 2013; Tsiotsou & Ratten, 2010; Chang & Katrichis, 2016). To conclude, MT is not only beneficial for tourist attractions, tourist resorts, and agencies but also for tourists, passengers, and voyagers who can make use of machine-generated translation to translate messages into their native languages.

### *B. Tourism Translation and Machine Translation*

Whether it is discussing traveling from one country to another or simply rendering a restaurant menu, tourism translation is commonly employed throughout the tourism and hospitality industries. What is more, it enhances a whole international community because language can positively influence a tourist's itinerary and travel arrangements if they do not particularly speak the language of the country they are visiting.

Moreover, machine translation technology (MT) has had a considerable influence on the tourism translation industry. In today's world, getaways have become more effective as tourists hold a certain feeling of power over their expertise (Clifford, 1997; Robinson, 2019; Holloway & Humphreys, 2022) that is the byproduct of technological applications found in their smartphones, laptops, and tablets. The apps and devices have become like travel companions for tourists, scheduling full tours and allowing for an easier, more enjoyable, and more flexible time visiting tourist attractions. Furthermore, tourists can now even change their whole experience through a geographic positioning system (GPS) technology which also ensures that they will never go missing (Steckman et al., 2017; Zoetewey, 2005). Machine translation technology (MT) apps have also substantially decreased causes of miscommunication, particularly in short-trade and investment-related communication. However, the use of smart devices may also lead to a decrease in the demand for communicating with the natives and make it extremely easy for tourists to become detached from the native surroundings (Stewart, 2019; Ennis & Petrie, 2019; Cravotta, 1990). Nevertheless, for now, social connections remain a significant aspect of tourist excursions and guided tours.

Conversely, machine translation technology (MT) may ease and promote contact with residents by removing the need for travel guides. Furthermore, it may also allow for discussions about ideas for activities and opinions that may be difficult to clarify solely through pantomime and nonverbal communication (Quah, 2006; O'Hagan, 2016; Morrissey, 2008). Moreover, electronic image processing found in applications like Google Lens also enables tourists to scrutinize the surroundings and the lingua scape (Pencarelli, 2020; Gajdošík, 2018; Peceny et al., 2019).

To conclude, machine translation technology (MT) may ease and promote smarter tourism. The latest technological developments in cloud-based computing, geographic positioning systems GPS apps, virtual and artificial reality, and the

comprehensive implementation of social networking websites and smartphone technology have pushed intelligent and innovative technology into tourism translation.

### C. *Previous Studies*

There is a gap in research regarding the impact of machine translation technology in the development of tourism translation around the world. Moreover, the perspectives of translators and translation experts on the impact of MT and its role in the development of translation in the tourism industry in Saudi Arabia have not been explored either. It is especially relevant to recognize how these translators and translation experts perceive MT, as this will crystallize and shed light on the role of MT in creating tourist excursions and tourist attractions. However, up until now, no particular investigation has been carried out to study the perspectives of translators and translation experts on the impact of MT and its role in the development of tourism translation in Saudi Arabia. For that reason, it is very significant to conduct probes that address these perspectives. In addition, the author believes that this study can help pave the way for machine translation (MT) to play more fundamental roles in developing the tourism translation industry in Saudi Arabia in light of Saudi Vision 2030.

Once again, it is especially useful to illustrate that a multitude of researchers have investigated the impact of technology on translation and perceptions toward quality machine translation, machine translation in tourism translation, the translation of tourism-related webpages as well as the local challenges and modern perspectives on the incorporation of machine translation technology into tourism translation.

For example, in their study, Carvalho et al. (2023) found that the respondents who have a more positive perspective on MT are apt to be more inexperienced and less knowledgeable, and have limited language proficiency. The respondents who gauge MT as of little import are more than likely to have officially mastered language skills, more than likely to have taken part in cultural programs, and more than likely to have close communication with natives in their language during their trips. Recognizing the role played by MT during their journey is neither connected with a more adverse outlook towards the role played by language in the tourist industry nor with the perceived reduced trip effects.

Fuentes-Luque and Urbieto (2020) stated that MT mechanisms would need to be customized so that they can detect expressions and recognize subtle variations, tropes, and everyday expressions which are generally found in promotional tourism materials in the languages of the tourists.

Hazbavi (2015) found that participants had extremely low levels of acceptance and a very keen interest in learning about Machine translation (MT) in addition to the positive attitudes shown by translators and translation experts toward machine translation.

Pencarelli (2020) stated that tourism 4.0 technologies must be oriented toward the enhancement of the quality of the tourism industry, presuming intelligence and practicability as the right model for enhancing the standards of living and the cultural values and core beliefs of both travelers and native residents.

Hamood and Tuma (2023) found that people in the domain of translation incongruously consider the prevailing situation and contrastingly think about the future of the relationship between translation and technology. Additionally, they also found that the precision of machine translation, the demand for continuing learning and practicing, and the ethical concerns with the utilization of translation technologies are significant concerns among mundane translators and interpretation professionals.

Giampieri and Harper (2022) found that machine translation does well with communicative and expository tourism texts where phrases and clauses are plainer and inarticulate with no colorful language included or required. Nevertheless, it would be unlikely that these would be regarded as indicative or reflective of tourism texts as an integral whole. The paper advocates for developments in MT algorithms to tackle particular lexicological and lexical relation difficulties. Additionally, it is the view of the researchers that MT in the tourism sphere should best be left to translators who are more knowledgeable about how to appropriate word utilization based on the context.

Liu (2022) introduced the features of technology-enhanced instruction and examined the application of computer technology in teaching tourism English from two facets: instituting the computer index system of job training methods for tourism English and rationally employing computer translation software, aspiring to afford an analogous reference for teaching tourism English in academic circles.

Finally, Çolak (2023) found that utilizing GPT technology in the tourism industry can tender better tourist communication, better decision-making, and better customized guided tours. ChatGPT highlights innovative technologies such as machine translation. Moreover, GPT and MT have the potential to mold and enhance the overall travel knowledge of tourists from the earliest stages of planning to the true trip itself.

## III. METHODOLOGY

### A. *Questions of the Study*

To reach the three main objectives of the study previously mentioned in the introduction, the following questions must be answered:

- 1) What are the perspectives of translators and translation experts on the impact of machine translation (MT) technology on the development of tourism translation in Saudi Arabia?

- 2) What are the challenges and obstacles encountered when utilizing Machine translation (MT) technology in the tourism translation industry?
- 3) How can these challenges and obstacles be tackled from a divergent theoretical and practical perspective concerning machine translation technology (MT)?

### B. Experimental Subjects

The purposive sample of the present study consisted of 80 translators and translation experts in Saudi Arabia who were selected at random from selected Saudi Universities and top translation services companies and tourism organizations in Saudi Arabia,

TABLE 1  
DISTRIBUTION OF STUDY SAMPLE ACCORDING TO UNIVERSITY, COMPANIES AND ORGANIZATIONS

Universities / Companies/ Organizations	Frequency	Percentage
Saudi Universities	40	40.0
Top Translation Services Companies	20	20.0
Tourism Organizations	20	20.0
Total	80	80.0

### C. Instruments

Considering the three objectives of the present study and its three questions, a quantitative study approach was deemed the most suitable for investigating the perspectives of translators and translation experts on the impact of utilizing machine translation technology in the development of tourism translation. The quantitative study method assists in analyzing, comparing, and assessing large quantities of data, thus it is appropriate for this study. Using this approach, data used in this investigation were gathered employing an online questionnaire or “e-questionnaire” that focuses on a deep understanding of a problem sought. Notably, one of the key characteristics of this paradigm is that the results can be reported in quantitative terms (Creswell, 2011; Bayley, 2013). This is the reason why a qualitative analysis method would not be the correct approach for this study as it does not correspond with the examination of the issues.

The questionnaire was employed by the author in this study and predicated on a 5-point Likert Scale. The Likert scale is an extensively employed procedure for assessing the varying degree of acceptance of the statements given among questionnaire respondents.

### D. Collection of Data Techniques

The appropriate data was compiled by a 12-item opinion poll that allied with the three targets of the current study. The initial draft of the opinion poll was circulated to five professional interpreters and translators to verify the applicability of the survey items and the dimension to which they were consistent with the respondents. The final draft of the survey was enhanced after remarks, observations, and assessments were given to five professional interpreters and translators. Moreover, the questionnaire was trialed by a category of 20 translators and translation experts selected at random from some Saudi universities, top translation services companies, and some tourism organizations in Saudi Arabia. The author carried out a pilot study before handing out the questionnaire to all the experiment subjects of the study and submitted the questionnaire at random to a purposive sample of 80 respondents who reported that the items were palpable and easily understood. Additionally, the pilot research permitted the researcher to estimate the time gap between when the first responder completed the survey and when the last responder finished his/hers which was 13 minutes. The coefficient alpha reliability hits 0.88 which displayed a proper reliability level.

TABLE 2  
THE COEFFICIENT ALPHA RELIABILITY OF THE QUESTIONNAIRE (ALL SAMPLES: N=100)

The items of the survey	Numbers of items	Coefficient alpha reliability
The total reliability of the survey	12	0.88

## IV. RESULTS AND DISCUSSION

The analysis of the research data allowed the author to conclude the perspectives of translators and translation experts on the impact of machine translation (MT) technology on the development of tourism translation in some Saudi Universities, top translation services companies, and tourism organizations. Statistical quantitative data analysis was employed using IBM SPSS Statistics version 28 and was comprised of data analytics to compute the percent of each element.

TABLE 3  
 VIEWS OF TRANSLATORS AND TRANSLATION EXPERTS ON THE IMPACT OF MACHINE TRANSLATION (MT)  
 TECHNOLOGY ON THE DEVELOPMENT OF TOURISM TRANSLATION IN SAUDI ARABIA

Survey item	SA 5	A 4	N 3	SD 2	D 1	Mean	St.d.
1.I view that machine translation (MT) tools make it easier for the tourist to tour any destination, even if he/she cannot speak the language.	32.16%	30.80%	14.70%	11.65%	10.69%	3.03	1.10
2.I view that machine translation (MT) allows for the optimization of tourism around the world in general and in Saudi Arabia in particular.	37.42%	35.51%	10.80%	6.70%	10.20%	3.01	1.07
3.I perceive machine translation (MT) tools as significant in the travel context.	29.85%	23.80%	18.90%	8.95%	18.50%	3.10	1.09
4.Mobile phone apps are an excellent aid when tourists cannot speak English.	27.30%	28.40%	15.30%	16.70%	12.30%	3.2	1.15
5.I believe that machine translation (MT) has played a crucial role in the most important language tours for tourists.	30.50%	30.40%	10.20%	14.30%	14.60%	3.04	1.23
6.I view that tourism translation can utilize machine translation (MT) to provide bilingual and plurilingual data and facilities to tourists such as reservations, travel, and tour guidance.	33.38%	32.60%	11.38%	10.24%	12.40%	3.04	1.20
7.I view machine translation (MT) as a paradigm of language technology which is a domain of computing that manipulates human languages for the many different objectives of tourism.	25.40%	25.10%	16.10%	17.08%	16.32%	3.01	1.10
8.I believe that language technology is becoming progressively widespread, and machine translation (MT) merits particular focus from the tourism industry.	28.01%	26.90%	16.70%	15.69%	12.70%	3.01	1.25
9.I believe that machine translation (MT) can dispose of the limitations of translators of tourism translation.	25.60%	25.82%	16.25%	15.23%	17.10%	3.03	1.12
10.I view that because of the widespread availability of artificial intelligence machine translation, challenges and impediments of machine translation accuracy for tourism translation are successfully addressed.	25.07%	25.80%	20.70%	14.69%	13.74%	3.06	1.30
11.I view that tourism translators must tender meaning in various languages to reach global tourists and travelers.	25.46%	26.05%	17.09%	16.12%	15.28%	3.07	1.20
12.I believe that machine translation (MT) is easily operated in tourism translation.	30.44%	30.21%	12.25%	13.30%	13.80%	3.08	1.30

In reply to survey Item 1, “I consider that machine translation (MT) tools make it easier for the tourist to tour any destination, even if he/she cannot speak the language”, 30.80 % of the respondents agreed, and 32.16% strongly agreed. This finding indicated that most participants viewed that machine translation (MT) tools make it easier for tourists to tour any destination, even if he/she cannot speak the language. This is clear in the average score of 3.03 which indicates that it surpasses the objective value of 3.00 on the 5-point Likert scale.

In reply to survey item 2 “I view that machine translation (MT) allows for the optimization of tourism around the world in general and in Saudi Arabia in particular”, 23.80% of respondents agreed, and 37.42% strongly agreed. This finding demonstrated that machine translation (MT) allows for the optimization of tourism around the world in general

and in Saudi Arabia in particular. This is manifested in the average score of 3.01 which displays that it surpasses the objective value of 3.0 in a similar vein as the earlier item on the 5-point Likert scale.

In reply to survey item 3 “I perceive machine translation (MT) tools as significant in the travel context”, 23.80 % of respondents agreed, and 29.85% strongly agreed. This finding indicated that machine translation (MT) tools are important in the travel context. The average score of this item is a little bit bigger than the other points in the table above (Table 3); however, this implies that a significant proportion of respondents are completely convinced that Machine translation (MT) utensils are important in the travel context.

In reply to survey item 4, “Mobile phone apps are an excellent aid when tourists cannot speak English”, 28.40% of respondents agreed, and 27.30% strongly agreed. This finding revealed that many of the participants believe that mobile phone apps are an excellent aid when tourists cannot speak English. This is obvious in the average score of 3.02 which shows that it surpasses the objective value of 3.00 similar to the earlier item on the 5-point Likert scale.

In reply to survey item 5, “I believe that machine translation (MT) has played a crucial role in the most important language tours for tourists”, 30.40% of respondents agreed, and 30.50% strongly agreed. This finding proved that machine translation (MT) has played a crucial role in the most important language tours for tourists. This is apparent in the average score of 3.04 which asserts that it transcends the objective value of 3.0 in the same way as the earlier item on the 5-point Likert scale.

In reply to survey item 6, “I have the opinion that tourism translation can utilize machine translation (MT) to provide bilingual and plurilingual data and facilities to tourists such as reservations, travel, and tour guidance”, 32.60% of respondents agreed, and 33.38% strongly agreed. This finding proved that most respondents view that tourism translation can utilize machine translation (MT) to provide bilingual and plurilingual data and facilities to tourists such as reservations, travel, and tour guidance. This is evidenced by an average score of 3.04 which verifies that it surpasses the actual value of 3.00 in a similar way as other points on the 5-point Likert scale.

In reply to survey item 7, “I view machine translation (MT) as a paradigm of language technology which is a domain of computing that manipulates human languages for the many different objectives of tourism”, 25.10% of respondents agreed, and 25.40% strongly agreed. This finding proved that most respondents view machine translation (MT) as a paradigm of language technology which is a domain of computing that manipulates human languages for the many different objectives of tourism. This is quite clear in the average score of 3.01 which proves that it surpasses the actual value of 3.00 in a similar way as other points on the 5-point Likert scale.

In reply to survey item 8, “I assume that language technology is becoming progressively widespread, and machine translation (MT) merits particular focus from the tourism industry”, 26.90% of respondents agreed, and 28.01% strongly agreed. This finding demonstrated that most respondents believe that language technology is becoming progressively widespread, and machine translation (MT) merits particular focus from the tourism industry. This is evident in the average score of 3.01 which attests that it oversteps the middling value of 3.00 similar to other points on the 5-point Likert scale.

In reply to survey item 9, “I think that machine translation (MT) can dispose of the limitations of translators of tourism translation”, 25.82% of respondents agreed, and 25.60% strongly agreed. This finding revealed that most respondents believe that machine translation (MT) can dispose of the limitations of translators of tourism rendition. This is manifest in the average score of 3.03 which proves that it passes the objective value of 3.00 similar to some other elements on the 5-point Likert scale.

In reply to survey item 10, “I do consider that because of the widespread availability of artificial intelligence machine translation, challenges and impediments of machine translation accuracy for tourism translation are successfully addressed”, 25.80% of respondents agreed, and 25.07% strongly agreed. This finding showed that because of the widespread availability of artificial intelligence machine translation, most respondents view the challenges and impediments of machine translation accuracy for tourism translation as successfully addressed. This is reflected in the average score of 3.06 which verifies that it passes the neutral value of 3.00 similar to some other points on the 5-point Likert scale.

In reply to survey item 11, “I view that tourism translators must tender meaning in various languages to reach global tourists and travelers”, 26.05% of respondents agreed, and 25.46% strongly agreed. This finding was evidence that most respondents had the view that tourism translators must tender meaning in various languages to reach global tourists and travelers. This is clear when noting the average score of 3.07 which proves that it surpasses the objective value of 3.00 analogous to some other items on the 5-point Likert scale.

In reply to survey item 12, “I think that machine translation (MT) is easily operated in tourism translation”, 30.21% of respondents agreed, and 30.44% strongly agreed. This finding indicated that most respondents believe machine translation (MT) is easily operated in tourism translation. This is evident in the average score of 3.08 which verifies that it transcends the objective value of 3.00 in the same way as some other items on the 5-point Likert scale.

To answer the first research question, “What are the perspectives of translators and translation experts on the impact of machine translation (MT) technology on the development of tourism translation in Saudi Arabia?” the quantitative data indicated that many translators and translation experts had positive perspectives on the impact of machine translation (MT) technology on the development of tourism translation. The results showed that many of the respondents (63.65%) agreed with the significance of MT tools in the travel context. Moreover, respondents scored

highest (72.93 %) on average for seeing that machine translation (MT) allows for the optimization of tourism around the world generally and Saudi Arabia particularly. The findings of this question confirmed the results of previous reviews that studied the impact of machine translation technology on tourism translation (Carvalho et al., 2023; Giampieri & Harper, 2022; Liu, 2022; Hazbavi, 2015).

To answer the second research question, “What are the challenges and obstacles encountered in utilizing machine translation (MT) technology in the tourism translation industry?” the perspectives of translators and translation experts on the challenges and impediments faced in utilizing machine translation (MT) technology in the tourism translation industry were notably positive. The majority of respondents (51.42%) perceived that machine translation (MT) can dispose of the limitation of translators of tourism translation.

To answer the third and final question of the study, “How can these difficulties and impediments be tackled from divergent conceptual perspectives and factual perspectives concerning machine translation (MT)?” the results suggested that many translators and translation experts (50.78%) had positive viewpoints and tended to have strong perspectives that, because of the widespread availability of artificial intelligence machine translation, challenges and impediments of machine translation accuracy for tourism translation are successfully addressed.

## V. CONCLUSION

### A. Study Findings

The findings of this study indicated that many translators and translation experts had positive perspectives on the impact of machine translation (MT) technology on the development of tourism translation. The results also revealed that many of the respondents (63.65%) agreed with the significance of MT tools in travel settings. Moreover, respondents scored highest (72.93 %) on average for seeing that machine translation (MT) can enhance tourism generally around the globe and particularly in Saudi Arabia. The findings also showed that the perspectives of translators and translation experts on the challenges and obstacles met in utilizing machine translation (MT) technology in the tourism translation industry were significantly positive. Many respondents (51.42%) viewed that machine translation (MT) can get rid of the constraints and restrictions for translators of tourism translation. Finally, the results also showed that many translators and translation experts (50.78%) had positive perspectives and strong attitudes toward the overall availability of artificial intelligence machine translation and that challenges and impediments of machine translation accurateness for tourism translation are efficiently handled.

### B. Study Implications

This study helps to fill in the gaps in the literature on the impact of machine translation technology on the development of tourism translation. In line with other authors' asserting the potential impact of machine translation (MT) utilization in changing traveling conceptions and guides, the researchers have highlighted the unique impact of MT on tourism texts, quality enhancement of the tourism industry, as well as providing bilingual and plurilingual data and facilities to tourists such as reservations, travel, and tour guidance.

### C. Recommendations for Future Studies

One recommendation that is the result of the findings was that Saudi educational institutions, Saudi universities, top translation service companies, and tourism organizations should offer future professional training on how to utilize machine translation (MT) in the tourism translation industry and raise awareness of the issue of the merits and demerits utilizing machine translation (MT) on tourism the sector.

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## REFERENCES

- [1] Bayley, R. (2013). The Quantitative Paradigm. In *The Handbook of Language Variation and Change* (eds J.K. Chambers and N. Schilling). <https://doi.org/10.1002/9781118335598.ch4>.
- [2] Briedenhann, J., & Wickens, E. (2004). Tourism routes as a tool for the economic development of rural areas—vibrant hope or impossible dream. *Tourism Management*, 25(1), 71-79.
- [3] Buhalis, D. (1998). Strategic use of information technologies in the tourism industry. *Tourism Management*, 19(5), 409-421.
- [4] Carvalho, I., Ramires, A., & Iglesias, M. (2023). Attitudes towards machine translation and languages among travelers. *Information Technology & Tourism*, 1-30.
- [5] Carvalho, I., & Ivanov, S. (2023). *ChatGPT for tourism: applications, benefits, and risks*. *Tourism Review*.
- [6] Cenni I (2019) Multilingualism 2.0: language policies and the use of online translation tools on global platforms. *Argentin J Appl Linguist*, 7(1), 79–92.
- [7] Chang, W. J., & Katrichis, J. M. (2016). A literature review of tourism management (1990–2013): a content analysis perspective. *Current Issues in Tourism*, 19(8), 791-823.
- [8] Clifford, J. (1997). *Routes: Travel and translation in the late twentieth century*. Harvard University Press.



- [9] Çolak, O. (2023). The Role of Generative Pre-trained Transformers (GPT) in Recreational Tourism: An Interview with ChatGPT. *Spor Bilimleri Araştırmaları Dergisi*, 8(3), 733-748. <https://doi.org/10.25307/jssr.1341967>
- [10] Cravotta, J. S. (1990). English for Tourism Purposes. *A new approach in the field of English for Specific Purposes*. Retrieved from <http://www.esportourism.blogspot.my/2024/1/english-for-tourism-purposes.html>
- [11] Creswell, J. W. (2011). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.
- [12] Cronin, M. (2012). *Translation in the digital age*. Routledge.
- [13] Deumert, A. (2014). *Sociolinguistics and mobile communication*. Edinburgh University Press
- [14] Dew, K. N., Turner, A. M., Choi, Y. K., Bosold, A., & Kirchoff, K. (2018). Development of machine translation technology for assisting health communication: A systematic review. *Journal of Biomedical Informatics*, 85, 56-67.
- [15] Doz, Y. L., & Hamel, G. (1998). *Alliance advantage: The art of creating value through partnering*. Harvard Business Press
- [16] Ducar, C., & Schocket, D. H. (2018). Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate. *Foreign Language Annals*, 51(4), 779-795.
- [17] Drugan, J. (2013). *Quality in professional translation: Assessment and improvement* (Vol. 9). A&C Black.
- [18] Ennis, M., & Petrie, G. (Eds.). (2019). *Teaching English for tourism: Bridging research and praxis*. Routledge.
- [19] Evans, J. A., & Aceves, P. (2016). Machine translation: Mining text for social theory. *Annual review of sociology*, 42, 21-50.
- [20] Fernandes, A. B. (2010). Between words and silences: Translating for the stage and the enlargement of paradigms. *Scientia traductionis*, (7), 119-133.
- [21] Fuentes-Luque, A., & Urbieta, A. S. (2020). Machine translation systems and guidebooks: an approach to the importance of the role of the human translator. *Onomázein*, 63-82.
- [22] Gajdošík, T. (2018). Smart tourism: Concepts and insights from Central Europe. *Czech Journal of Tourism*, 7(1), 25-44.
- [23] Galán-Mañas, A., & Hurtado Albir, A. (2015). Competence assessment procedures in translator training. *The Interpreter and Translator Trainer*, 9(1), 63-82.
- [24] Garcia I, Pena MI (2011) Machine translation-assisted language learning: writing for beginners. *Comput Assist Lang Learn*, 24(5), pp. 471-487. <https://doi.org/10.1080/09588221.2011.582687>
- [25] Giampieri, P., & Harper, M. (2022). Tourism Translation: from Dictionary to Corpus to Machine Translation (and back). *Umanistica Digitale*, (14), 119-135.
- [26] Goutte, C. (Ed.). (2009). *Learning machine translation*. MIT Press.
- [27] Hall, C. M. (2005). *Tourism: Rethinking the social science of mobility*. Pearson Education.
- [28] Hamood, F. & Tuma, M.M. (2023). The impact of technology on Translation. *Journal of Language Studies, Published by Tikrit University, 2023, Volume 7, Issue 2, Pages 377-395*.
- [29] Hassan, H. (2009). *Lexical syntax for statistical machine translation* (Doctoral dissertation, Dublin City University).
- [30] Hazbavi, A. A. (2015). Perception and Implementation of Machine Translation Applications by the Iranian English Translators. *International Journal of Cognitive and Language Sciences*, 9(4), 1115-1120.
- [31] Holloway, J. C., & Humphreys, C. (2022). *The business of tourism*. Sage.
- [32] Hutchins WJ (1995) Machine translation: a brief history. In: Koerner EF, Asher RE (eds) *Concise history of the language sciences: from the Sumerians to the cognitivists*. Pergamon Press, Oxford, pp. 431-445.
- [33] Južnič, T. M. (2013). Assessment feedback in translator training: A dual perspective. *New Horizons in Translation Research and Education*, 1, 75-98.
- [34] Kenny, D., & Doherty, S. (2014). Statistical machine translation in the translation curriculum: overcoming obstacles and empowering translators. *The Interpreter and Translator Trainer*, 8(2), 276-294.
- [35] Khatib, M., & Ziafar, M. (2012). Contrastive lexical approach and teaching second language literature: Tran lexemes facilitate translation and language teaching. *International Journal of English and Education*, 1(2), 17-30.
- [36] Koehn, P. (2009). *Statistical machine translation*. Cambridge University Press.
- [37] Lauscher, S. (2014). Translation quality assessment: Where can theory and practice meet? In *Evaluation and Translation* (pp. 149-168). Routledge.
- [38] Lee, C. (2016). *Multilingualism online*. Taylor & Francis.
- [39] Lee, S. M. (2020). The impact of using machine translation on EFL students' writing. *Computer-assisted language learning*, 33(3), 157-175.
- [40] Legassie, S. (2017). *The Medieval Invention of Travel*. University of Chicago Press.
- [41] Levy, S. E., Duan, W., & Boo, S. (2013). An analysis of one-star online reviews and responses in the Washington, DC, lodging market. *Cornell Hospitality Quarterly*, 54(1), 49-63.
- [42] Liu, Y. (2022). The application of computer technology in tourism English teaching. In *2nd International Conference on Artificial Intelligence, Automation, and High-Performance Computing (AIAHPC 2022)* (Vol. 12348, pp. 971-976). SPIE. <https://doi.org/10.1117/12.2641407>
- [43] Madankar, M., Chandak, M. B., & Chavhan, N. (2016). Information retrieval system and machine translation: a review. *Procedia Computer Science*, 78, 845-850.
- [44] Mišenský, P. (2008). *Tourism and Terminology: Translating Travel Brochures*.
- [45] M Folaron, D. (2019). Technology, technical translation, and localization. *The Routledge handbook of translation and technology*, 203-219.
- [46] Morrissey, S. (2008). *Data-driven machine translation for sign languages* (Doctoral dissertation, Dublin City University).
- [47] Moscardo, G. (2008). Community capacity building: an emerging challenge for tourism development. In *Building community capacity for tourism development* (pp. 1-15). Wallingford UK: CABI.
- [48] Moubtahij, A. (2023). *Query-focused extractive summarization for sentiment explanation* (Doctoral dissertation, École de technologie supérieure).
- [49] Neugebauer, R. (Ed.). (2019). *Digital transformation*. Springer Berlin Heidelberg.

- [50] Niño, A. (2008). Evaluating the use of machine translation post-editing in the foreign language class. *Computer Assisted Language Learning*, 21(1), 29-49. Vauquois, B., & Boitet, C. (1985). Automated translation at Grenoble University. *Computational Linguistics*, 11(1), 28-36.
- [51] O'Hagan, M. (2016). Translations| Massively Open Translation: Unpacking the Relationship Between Technology and Translation in the 21st Century. *International Journal of Communication*, 10, 18. pp. 929–946.
- [52] Peceny, U. S., Urbančič, J., Mokorel, S., Kuralt, V., & Ilijaš, T. (2019). Tourism 4.0: Challenges in marketing a paradigm shift. In *Consumer behavior and marketing*. IntechOpen.
- [53] Pencarelli, T. (2020). The digital revolution in the travel and tourism industry. *Information Technology & Tourism*, 22(3), 455-476.
- [54] Poncini, G. (2002). *Exploring common ground in multilingual brochures for mountain areas in Lombardy, Italy*. Università della Svizzera italiana.
- [55] Quah, C. K. (2006). *Translation and technology*. London: Palgrave MacMillan.
- [56] Qassem, M., & Sahari, Y. (2023). Translator Trainees' Performance on Arabic–English Promotional Materials. *Open Cultural Studies*, 7(1), 20220184, pp.1-17.
- [57] Reber, U. (2019). Overcoming language barriers: Assessing the potential of machine translation and topic modeling for the comparative analysis of multilingual text corpora. *Communication methods and measures*, 13(2), 102-125.
- [58] Rivera-Trigueros, I. (2022). Machine translation systems and quality assessment: a systematic review. *Language Resources and Evaluation*, 56(2), 593-619.
- [59] Robinson, D. (2019). *Becoming a translator: An introduction to the theory and practice of translation*. Routledge
- [60] Sheller, M., & Urry, J. (2004). *Tourism mobilities: Places to play, play places*. Routledge.
- [61] Simpson, M. C. (2008). Community benefit tourism initiatives—A conceptual oxymoron? *Tourism Management*, 29(1), 1-18.
- [62] Slocum, J. (1985). A survey of machine translation: Its history, current status, and prospects. *Computational linguistics*, 11(1), 1-17.
- [63] Solorzano Jr, R. (2009). *From "Spanish choices" to Latina/o voices: Interrogating technologies of language, race, and identity in a self-serving American moment*. University of Massachusetts Amherst.
- [64] Somers, H. (2011). Machine translation: history, development, and limitations. In: Malmkjær K, Windle K (eds) *The Oxford Handbook of translation studies*. Oxford University Press, Oxford, pp. 427–440. <https://doi.org/10.1093/oxfordhb/9780199239306.013.0029>.
- [65] Steckman, L. M., & Andrews, M. J. (Eds.). (2017). *Online around the world: A geographic encyclopedia of the Internet, social media, and mobile apps*. Bloomsbury Publishing USA.
- [66] Stewart, D. (2019). English for tourism in the non-native English classroom: machine translation and corpora. In: Ennis MJ, Petrie GM (eds) *Teaching English for tourism: bridging research and praxis*. Routledge, Amsterdam, pp. 114–130. <https://doi.org/10.4324/9780429032141>.
- [67] Stoddard, J. E., Pollard, C. E., & Evans, M. R. (2012). The triple bottom line: A framework for sustainable tourism development. *International Journal of Hospitality & Tourism Administration*, 13(3), 233-258.
- [68] Strzalkowski, T. (Ed.). (1999). *Natural language information retrieval* (Vol. 7). Springer Science & Business Media. References.
- [69] Tekwa, K. (2024). *Machine Translation and Foreign Language Learning*. Springer Nature.
- [70] Trujillo, A. (1999). *Translation engines: techniques for machine translation*. Springer Science & Business Media.
- [71] Tsiotsou, R., & Ratten, V. (2010). Future research directions in tourism marketing. *Marketing intelligence & planning*, 28(4), 533-544.
- [72] Way, A. (2018). Quality expectations of machine translation. *Translation quality assessment: From principles to practice*, 159-178.
- [73] White, J. S. (2003). How to evaluate machine translation. *Benjamins Translation Library*, 35, 211-244.
- [74] Woodward-Smith, E. (2019). Tourism, translation, and advertising. In *The Routledge Handbook of Spanish translation studies* (pp. 402-416). Routledge
- [75] WTO. (1997). *International Tourism: A Global Perspective (English version)*. World Tourism Organization.
- [76] Zoetewey, M. W. (2005). *Mobile writing technologies and the dis/location of the computer classroom*. Purdue University.



Formerly at Jazan University, Drs. **Ali Albashir Mohammed Alhaj** is currently a faculty member at King Khalid University in Saudi Arabia. Drs. Alhaj received his first Ph.D. in English Literature from the University of Khartoum in 2003, his second Ph.D. in Translation Studies from Omdurman Islamic University, in 2014, his third Ph.D. in Applied Linguistics from Sudan University of Science and Technology in 2018, and his fourth Ph.D. in Pure Linguistics was obtained from Bahri University. Drs. Alhaj has published 170 papers in indexed journals and 50 books, 12 of which have been translated into ten languages internationally. Drs. Alhaj received the King Khalid University Award for Scientific Research Excellence (First Rank) in 2020.