

Perception and Implementation of Machine Translation Applications by the Iranian English Translators

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Abstract—The present study is an attempt to provide a relatively comprehensive preview of the Iranian English translators' perception on Machine Translation. Furthermore, the study tries to shed light on the status of implementation of Machine Translation among the Iranian English Translators. To reach the aforementioned objectives, the Localization Industry Standards Association's questionnaire for measuring perceptions with regard to the adoption of a technology innovation was adapted and used to investigate the perception and implementation of Machine Translation applications by the Iranian English language translators. The participants of the study were 224 last-year undergraduate Iranian students of English translation at 10 universities across the country. The study revealed a very low level of adoption and a very high level of willingness to get familiar with and learn about Machine Translation, as well as a positive perception of and attitude toward Machine Translation by the Iranian English translators.

Keywords—Translation Technology, Machine Translation, Perception and Implementation.

I. INTRODUCTION

THE history of Machine Translation (MT) dates back to the early 1950s when the first computer came into being [1]. Since the invention of computer, MT has always been among the first goals of computer science, especially in the field of artificial intelligence. As defined by [2], MT is fully automated translation of text or speech from one language into a different language.

During the past few decades and with the development of the interdisciplinary field of computational linguistics, many researchers including computer engineers, linguists and translation scholars has focused their attempts on MT and brought about significant advances to the field. Although MT has made a great progress, but it still has a lot to do to get to the goals it had from beginning. Today, outputs of MT systems are relatively satisfactory in some fields, while they need to be thoroughly edited in some other fields.

The first Persian MT system named Pars Translator was launched by Mabnasoft® in September 1997 [3]. Thenceforth, there have been many MT systems that support Persian language. Today, Persian language is supported by many well-known online MT systems such as Google Translate®, Babylon® and Worldlingo®.

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Machine Translation is gaining more attention and more researchers are convinced to conduct a research project on it day by day. Today, researches on MT are considered as a well-recognized branch of research among researchers of both computer science and translation studies. Although MT has a long history and an established ground in translation studies and marketplace in most parts of the globe, the Iranian translators and translation market still seem to be unaware or at least unfamiliar with potentials of MT.

In this paper, the findings are reported of the first phase of a countrywide research project administered at 10 universities, set up to investigate familiarity with and implementation of MT systems among future Iranian translators of English language. The main purpose behind this research project was to provide a relatively comprehensive preview of MT perceptions of future Iranian English translators. More specifically, the objectives of current MT study can be summarized as:

- To find out the rate of familiarity with MT among future Iranian translators of English
- To understand MT perceptions among future Iranian translators of English
- To know the rate of MT systems implementation among future Iranian translators of English
- To help understand the reasons behind any probable low level of MT systems implementation in the task of translation by the future Iranian translators of English
- To uncover user satisfaction levels for existing MT systems

Taking into account the aforementioned objectives, the study was mainly focused on gaining information from potential users on their familiarity with and implementation of MT systems.

II. DESIGN OF THE STUDY

Since conducting a questionnaire survey allows the collection of data from a large number of subjects, in this case, from last-year Iranian undergraduate students of English translation at 10 universities, a questionnaire survey was deemed appropriate as data collection instrument in the first step of the study. Beside the aforementioned benefit, conducting a questionnaire survey could provide enough data for quantitative analysis in the testing of inferences, leading to the presentation of an overview of a broad section of the Iranian translator of English through generalising the findings.

Furthermore, there is an established body of research literature in which questionnaires have been used to study technology adoption in a variety of different contexts [4]-[6].

Such studies provided a valuable source of ideas and insights on design and development of the questionnaire formulated to be used in this study. Having investigated various questionnaires, the questioner for measuring perceptions with regard to the adoption of a technology developed by the Localization Industry Standards Association's was finally found to be appropriate as data collection instrument for the present study.

Having refined the questionnaire, a pilot study exercise was undertaken at Payame Noor University of Bandar Abbas among 14 last-year students of English translation, which provided valuable insights into the likely response rate and analytical implications for the full survey. The pilot study was done in order to make sure that the questionnaire is clear with no ambiguous question so that the participants of the survey would later have no difficulty in responding to. Other measures taken into considerations in order to mitigate the above risks were:

- The use of as little technical jargon as possible in the questions
- Ordering the questions in such a way that a question does not influence the response to subsequent questions
- The suggestion of options i.e. use of five-items likert scale (added as a recommendation from the participants of the pilot study)
- An effort was also made to avoid lengthy and irrelevant questions (the average time needed to complete the survey was only 3 minutes)

As a requirement for established approaches to conducting a questionnaire survey, participants of both the pilot and the real surveys, were provided with clear explanation on the purpose of the study as well as instructions for filling out the questionnaire.

III. QUESTIONNAIRE LAYOUT

The questionnaire was organised into the following sections:

A. Participants Profile

This section contained three items on gender of the participants, level of translation competence and participants' level of computer literacy.

B. Implementation of MT Applications

In this section, participants were provided with three items, one item on familiarity of participants with MT, one item on any previous training that they might have received on MT, and the last item on the implementation of MT systems in translation tasks by the participant.

C. Perceptions of MT

This section of the questionnaire consisted of seven items, four items on translators' perceptions about the implementation of MT systems in their translation tasks as well as three items on their willingness to get familiar with and learn about MT.

IV. DISCUSSION OF SURVEY FINDINGS

Having finished conducting the questionnaire survey at 10 universities across the country, a total 224 usable responses were analysed from the questionnaires given out. Table I shows the distribution of survey participants according to the institute where they study.

TABLE I
DISTRIBUTION OF PARTICIPANTS BY UNIVERSITY

Name of Institution	Number of Participants
Islamic Azad University of Bandar Abbas	26
Imam Reza University of Mashad	23
Applied Sciences University of Yazd	26
Islamic Azad University of Abadan	22
University of Kazerun	23
Payam Noor University of Shiraz	18
Hamedan University	18
Khorasgan University	27
Bahonar University of Kerman	21
Islamic Azad University of Tonekabon	20

A. Participants Profile

As illustrated below, the findings of the survey show that survey participants -of that 43% were male and 57% were female- had good translation competence as only 6% of them responded that their level of competence in translation was below average. This 6% is composed of two parts, 4% as less competent and 2% as not competent in translation. Furthermore, 46% of respondents evaluated their competence in translation as average. Of the remaining respondents, 11% were almost competent in translation and 37% said they are competent in translation.

In addition, only 14% of the survey participants stated that their level of computer literacy is below average, with 13% as low and 1% as very low level of computer literacy. Besides, 49% of respondents said that they have average level of computer literacy. However, 23% of respondents declared themselves as having high level of computer literacy and the remaining 14% were of very high level of computer literacy.

Since computer literacy is defined by the US Congress of Technology Assessment as "*the knowledge and ability to utilize computers and related technology efficiently*" the abovementioned percentages that indicate the overall satisfactory ability of the sample unit in using computer, can be used as evidence to the fact that translators have reached a certain maturity in using computers; therefore, one can expect them to feel more confident in implementing MT systems to their translation tasks.

B. Implementation of MT Applications

The findings of the second section of the questionnaire, which are illustrated below, reveal that level of familiarity with MT was low, and most of participants seemed unfamiliar with MT as only 20% of them responded that their level of familiarity with MT is above average, of which 11% declared themselves as almost familiar with MT and 9% said that they are familiar with MT.

Furthermore, 25% of respondents stated that their level of familiarity with MT is about average.

However, 55% of the respondents stated that their level of familiarity with MT is below average, of which 4% were of little familiarity and 51% were unfamiliar with MT.

The reason for such a low level of familiarity with MT might be discovered from the responses received on the fifth item of the questionnaire, which showed that only 14% of respondents have stated that they have received much or very much training on MT.

More specifically, 8% of respondents stated that they have received much training and 6% of respondents said that they have received very much training on MT.

While 13% of respondents declared that, they have received average training on MT, 17% of respondents stated that they have of 56% said they have received no training on MT received little training on MT and the remaining majority of 56% said they have received no training on MT.

In line with the low level of familiarity with MT, level of adoption of MT systems by the Iranian students of English translation was very low, as 28% of participants responded that they seldom implement MT systems in translation tasks. Moreover, 67% of respondents stated that they rarely implement MT systems in translation tasks.

However, 5% of respondents declared that they sometimes implement MT systems in translation tasks. Predictably, no participant who often or always implements MT systems in translation tasks was found.

C. MT Perception

Since it was probable that some participants –of course not as much as the findings revealed later- would respond that they do not implement MT systems in translation tasks, four items were developed to ask the perception of participants about MT in order to discover the reason behind not implementing MT systems in translation tasks.

Therefore, the participants were asked to answer items 7, 8, 9 and 10 if their response to the frequency of implementation of MT systems in translation tasks is sometimes, seldom or rarely.

Regarding the low level of implementation of MT systems in translation tasks, the survey findings showed that the most probable reason behind such a low level of adoption of MT systems might be unawareness, as stated by 52% of the participants. This total of 52% includes both 27% of respondents who agreed with the below-illustrated item and 25% of respondents who strongly agreed with it.

In addition, 19% of respondents were neutral about the proposed reason for not implementing MT systems in translation tasks. However, 11% of respondents stated that they disagree with the item and the remaining 18% said they strongly disagree with it.

Although the analysis of responses collected from the previous item of the questionnaire showed that most respondents are relatively unaware about MT, the study revealed a very positive perception of and attitude towards MT among the Iranian students of English translation, as 59% of respondents believed that MT could bring real benefits to translation tasks.

This 59% includes both the 30% of respondents who disagreed with the item and the 29% of respondents who strongly disagreed with the item that MT systems do not bring real benefit to translation tasks.

Moreover, according to the findings, 29% of respondents were neutral on the item, which is another indicator to the fact that lack of benefit is not a real matter for not implementing MT systems in translation tasks by the Iranian students of English translation. However, 12% of respondents agreed with the item and believed that MT systems are not beneficial to translation tasks. Furthermore, as illustrated below, no respondent strongly agreed with the item.

Analyzing the responses on the ninth item of the questionnaire, it was found that only 22% of respondents believe that MT systems are expensive.

This 22% is composed of two parts, a 19% who agreed with item that it costs them a lot to get a MT system and a 3% who strongly agreed with the item. Among the remaining 78% of respondents, 32% were neutral, 28% disagreed with the item and 18% strongly disagreed with the aforementioned item.

These findings indicate that expensive prices might not be considered as a main reason for not implementing MT systems in translation tasks by the Iranian students of English Translation.

The analysis of responses collected on the tenth item of questionnaire showed that majority of survey participants had positive perception of and attitude toward MT systems being suitable for their work. This majority is formed of 30% of respondents who disagreed with the item that MT systems are not suitable for their translation task and 23% who strongly disagreed with the item. In addition, 39% of respondents were neutral on the item, which might be due to having no experience with MT systems.

However, a total of 8% of responses were supporting the item, as 6% of respondents agreed with the item and 2% strongly agreed with the item that MT systems are not suitable for their translation task. The findings of the study on this item indicate that MT systems' lack of efficiency in certain fields is not the reason for not implementing MT systems in translation tasks by the Iranian students of English translation.

One of the most significant findings to be emerged from this study is the high level of willingness - as high as 62% - among the Iranian students of English translation to get familiar with and learn about MT. The aforementioned 62% includes 54% of respondents who stated that they are interested to get familiar with and learn about MT and 8% of respondents who declared that they are almost interested to get familiar with and learn about MT. In addition, 19% of respondents expressed their interest to get familiar with and learn about MT as about average. However, there were 9% of respondents who were less interested to get familiar with and learn about MT and 10% of the respondents who said they are not interested to get familiar with and learn about MT.

The findings of the present research clearly show that most participants of the survey indicated their satisfactions on two items put forth in questionnaire as suggestions for promoting

familiarity with MT among future Iranian translators of English. The findings on these two items are another indicator of positive perceptions of and attitudes toward MT among future Iranian translators of English.

Regarding the first item, 63% of respondents strongly agreed with the suggestion that the university should offer an academic course on MT. Furthermore, there were 28% of respondents who agreed with the item while the respondents who were neutral formed 5% of respondents. However, 3% of respondents disagreed with the proposed suggestion and only 1% of respondents strongly disagreed with the item.

With regard to the second item that proposes workshops should be organized by universities in order to make translators familiar with MT, 68% of respondents strongly agreed with the item, 22% of respondents agreed with the item, 6% of respondents were neutral, 3% of respondents disagreed with the item and the remaining 1% of respondents strongly disagreed with the item.

V.CONCLUSION

With regard to the objectives of the present study, it can be concluded from the findings of the questionnaire survey that most of future Iranian translators of English are neither familiar with MT nor are aware of the advantages; benefits and assistance MT can provide them with. Furthermore, in contrast to many translators around the world who use MT systems in translation, the study shows that MT systems are not utilized in translation by most of the potential Iranian translators of English.

Moreover, an important conclusion that can be derived from the present study is the positive perceptions of and attitudes toward MT among the future Iranian translators of English, as the findings of the second section of the questionnaire revealed. This conclusion in turn might be considered as a strong motivation for MT developers to pay more attention to the relatively virgin Iranian translation marketplace.

In addition, the high level of willingness among the future Iranian translators of English to get familiar with and learn about MT is another conclusion resulted from the present study, which should be taken into consideration by the Iranian translator trainers and the professional bodies for translators. As proved by the study, an academic course on MT offered at universities and workshops on MT are widely accepted options for promoting MT implementation in the Iranian translation marketplace.

Furthermore, it is concluded from the study that lack of efficiency in certain fields and financial issues i.e. expensive prices are not the reason for not implementing MT systems by the future Iranian translator of English.

Besides, the results of the present study provide suggestions for future research in MT as those for establishing the ways by which MT might gain greater acceptance among the translators as well as researches on identifying the reasons behind such a drastic low level of familiarity with and implementation of MT systems among the future Iranian translators of English.

APPENDIX

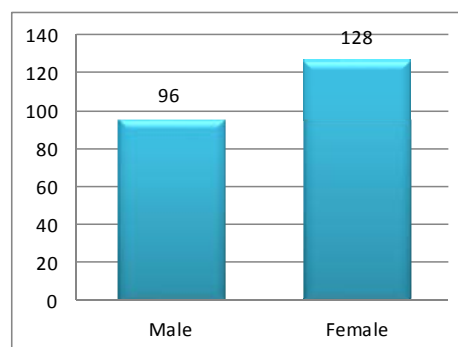


Fig. 1 Please indicate your gender

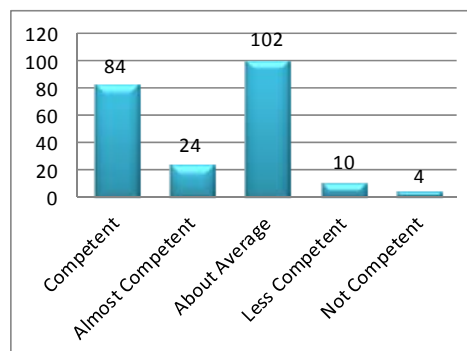


Fig. 2 How competent are you at translation

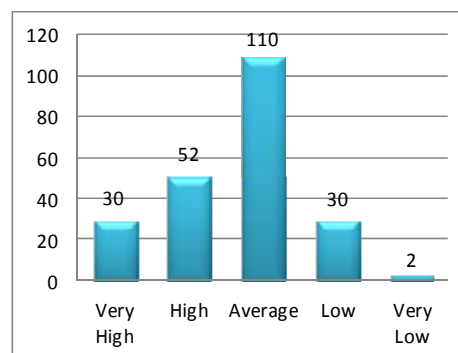


Fig. 3 What is your level of computer literacy

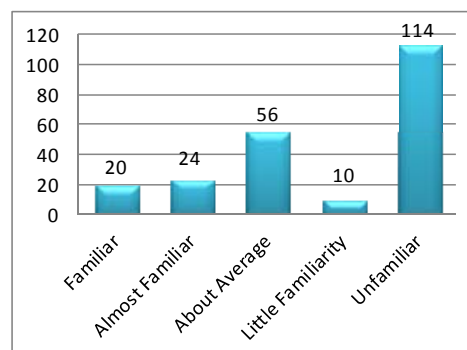


Fig. 4 How familiar are you with MT

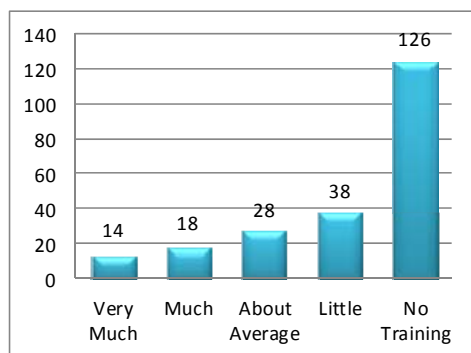


Fig. 5 How much training you have received on MT

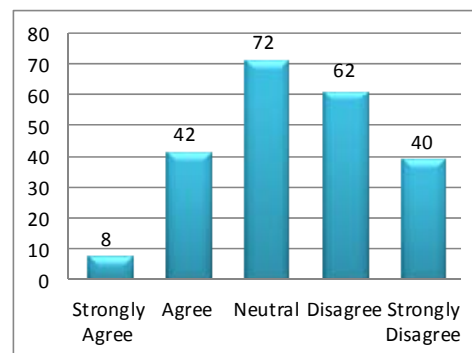


Fig. 9 I think it costs me a lot to get a MT system

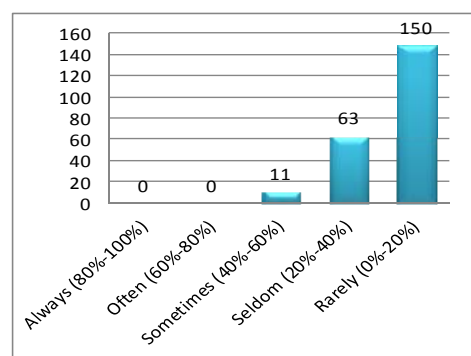


Fig. 6 How often do you implement MT systems in translation tasks

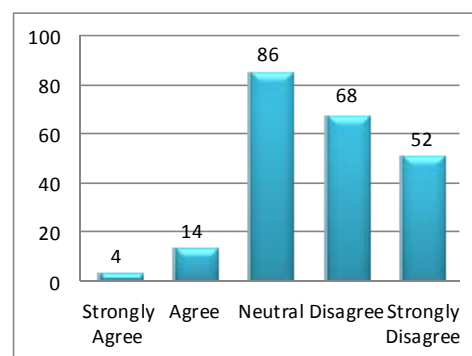


Fig. 10 I have tried MT systems but they are not appropriate for my translation tasks

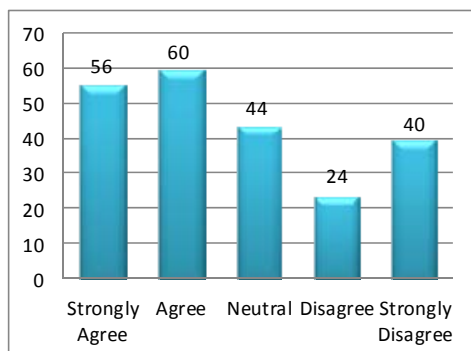


Fig. 7 I have heard nothing about MT systems

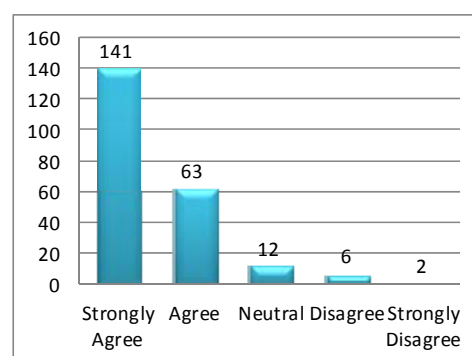


Fig. 11 How interested are you to get familiar with and learn about MT

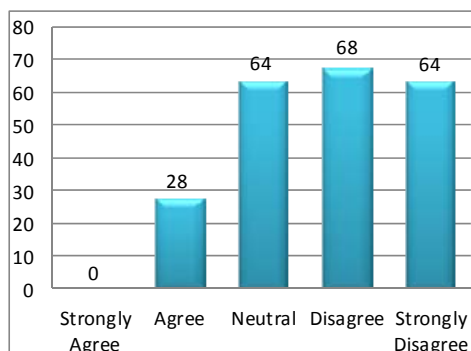


Fig. 8 I think MT systems do not bring real benefits to my translation tasks

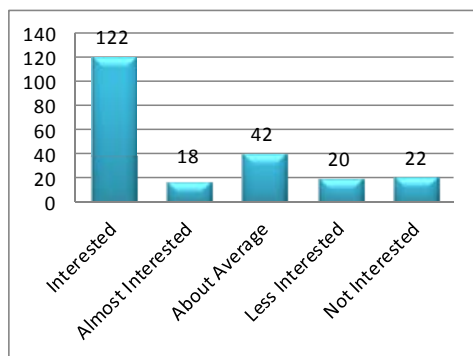


Fig. 12 I believe that the university should offer an academic course to make translators familiar with MT

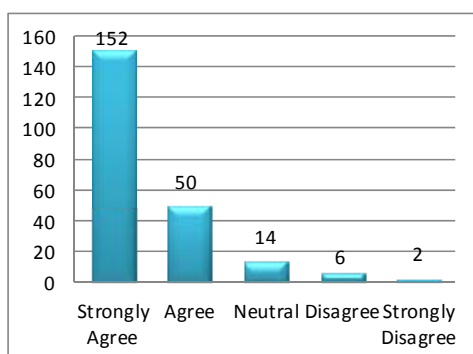


Fig. 13 I believe that the university should organize workshops to make translators familiar with MT

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