A survey on Google translation (En to Per/Per to En)

A survey on the satisfaction of EFL learners towards Google machine translation (English to Persian, Persian to English) and its accuracy as perceived

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Abstract

To investigate the satisfaction of EFL learners towards Google machine translation (English to Persian, Persian to English) and its accuracy as perceived, a questionnaire of twenty questions were designed. Descriptive method was used to find out; firstly, whether Google translator is successful in satisfying the EFL learners in translating different sorts of documents and whether there is a relationship between the age and the sex of users and their satisfaction towards the subject. Secondly, the perceived accuracy of Google machine translation was investigated in different areas of English to Persian and Persian to English, areas such as idioms, context and grammar. A five-point Likert Scale was used for rating the Google machine translation. Then, the researcher evaluated and described the findings through his observation of the answers of the participants to said questions and then after analyzing the “chi-square” assessment findings and charts using SPSS version 23, the researcher figured out that whether there is a relationship between the age and the sex of users and their satisfaction towards the Google machine translation (English to Persian, Persian to English), and some information about the perceived accuracy of Google machine translation were found.

Keywords: Google translator; machine translator; perceived accuracy, satisfaction of EFL learners

Introduction

Machine translation is The translation of text by a computer, with no human involvement. Pioneered in the 1950s, machine translation can also be referred to as automated translation, automatic or instant translation. The idea of machine translation can be traced back to the 17th century. In 1629, René Descartes described a universal language, with the same ideas in different languages sharing a specific symbol. Machine translation on the internet started in 1996 providing free translation of small texts, followed by AltaVista Babelfish, which had up to 500,000 requests a day (1997). In 2012 Google announced that Google Translate translates roughly enough text to fill 1 million books in one day.

For a better understanding of machine translation, first there is a need for understanding the human translation. The translation process done by humans can be described like this: first decoding the meaning of the source language; and then Re-encoding the meaning in the target language. There is a sophisticated and complex cognitive operation going on behind this procedure which may seem really easy. For decoding the meaning of the text from the source language in its full state of meaning, the translator must interpret and analyze all the areas and features of the text, this process requires an in-depth knowledge of the grammar, syntax, idioms. He also must know the culture of the source language. The translator needs also need all this knowledge in the target language. And this is the most important thing in machine translation, the programming of a computer that will understand and encode a text as a human does and creates a lingual structure in the target language as a human does.

Ana Nino (2009) in her article *Machine translation in foreign language learning: language learners' and tutors' perceptions of its advantages and disadvantages* explains that there are some positive aspects and strengths as to why EFL learners might want to use machine translations such as Google translation, such as:

- It is easily available online and it is free
- It is instant and easy, with just selecting the source language and the target language, cutting and pasting of the text and clicking, the output is provided.
- It is available in multiple language pairs and that it allows users to translate a single text into several languages.
- It translates short lexical units reasonably well.

She also points out some negative aspects and weaknesses as to why EFL learners might want to use machine translations such as Google translation, such as:

- It involves instances from the literal translation of proper names, terms and collocations, prepositions, determiners or connectives, to nonsense phrases or sentences, the selection of the wrong sense or a different meaning for a certain word, and different word order errors.

- It has many grammatical inaccuracies and this is one of the problems with machine translation systems. The grammatical inaccuracies include various kinds of errors with prepositions, determiners, agreement, pronouns, verb form, verb tense, verb mode, number and sentence structure.
- Machine translation systems work best when translating individual sentences; however, when translating texts they produce many discursive inaccuracies especially in relation to connectives and co-reference.
- In machine translation systems, spelling errors are produced when entering terms into the system's dictionaries. Although they are becoming less and less frequent thanks to the integration of spellcheckers in machine translation systems, other machine translation output errors can be found such as punctuation and capitalization errors, letter omissions or unnecessary letters.
- It is unable to account for cultural references and is unable to provide cultural equivalents in the target language unless these are previously identified and entered into the system's dictionaries.

This paper tries to analyze Google translate and its performance as perceived by EFL learners.

According to Wikipedia, Google Translate is a free multilingual machine translation service developed by Google, to translate text. Google Translate supports over 100 languages at different levels and as of May 2017, over 500 million people use this machine translation system daily. It launched in April 2006 as a statistical machine translation service.

Statistical machine translation tries to generate translations using statistical methods based on bilingual text corpora. Google Translate used United Nations and European Parliament transcripts to gather linguistic data. Where such corpora are available, good results can be achieved translating similar texts, but such corpora are still rare for many language pairs. In 2005, Google improved its internal translation capabilities by using approximately 200 billion words from United Nations materials to train their system; translation accuracy improved. Google Translate and similar statistical translation programs work by detecting patterns in hundreds of millions of documents that have previously been translated by humans and making intelligent guesses based on the findings. During a translation, it looks for patterns in millions of documents to help decide on the best translation. Generally, the more human-translated documents available in a given language, the more likely it is that the translation will be of good and acceptable quality.

In November 2016, Google has transitioned its translating method to a system called "Neural Machine Translation." It uses Deep Learning techniques to translate the whole sentences at a time and ensures greater accuracy of the context. As of 2018, it translates more than 100 billion words a day.

The process of translation in a statistical machine translation system like Google machine translation is under the influence of the units of the texts entered by the user, units based on: words, phrases and syntax

In word-based translation, the fundamental unit of translation is a word in some natural language. Typically, the number of words in translated sentences are different, because of compound words, morphology and idioms.

In phrase-based translation, the aim is to reduce the restrictions of word-based translation by translating whole sequences of words, where the lengths may differ. It has been shown that restricting the phrases to linguistic phrases decreases the quality of translation.

Syntax-based translation is based on the idea of translating syntactic units, rather than single words or strings of words.

Google Translate does not translate from one language to another ($L1 \rightarrow L2$). Instead, it often translates first to English and then to the target language ($L1 \rightarrow EN \rightarrow L2$)

Bozorgian, M., & Azadmanesh, N. (2014) in their article *A survey on the subject-verb agreement in Google machine translation* explained that Machine translation technology like human translation was brought to Iran because of the rapid and fast growth of needs to know about modern life and modern technologies. Therefore, many scholars, professors and computational linguists in Iran and other countries devised and analyzed English to Persian machine translation systems. They have already constructed several machine translation systems for the English/Persian language pair to meet the requirement of the people. Most of those machine translation systems were purely and only rule-based. Accordingly, different scholars both in Iran and other countries have done lots of researches regarding machine translation and agreement structures of translated sentences in machine translation. Consequently, different researchers voiced different opinions regarding machine translation.

Some people may believe that studies of any kind around machine translation is useless and a impractical attempt because machine translator does not have the ability of translating different literary texts like those of Shakespeare, Dickens and other literary figures. However, translating literary text is not within the goal of machine translation, because it does not have the qualification and the ability as that of a human.

This research's target is to determine to what extent the Google Machine Translation output is accurate as perceived by EFL learners and what is the relationship between the age and the sex of EFL learners and their satisfaction towards the subject.

Hence, the present study seeks to find out the answers to the two following research questions:

1. to what extent the Google Machine Translation output in different areas of English to Persian and Persian to English, areas such as idioms, context and grammar is accurate as perceived by EFL learners?
2. what is the relationship between the age and the sex of EFL learners and their satisfaction towards the Google Machine Translation output?

Accordingly, the researcher devised the following hypothesis:

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1. Google Machine Translation is perceived to have a very low level of accuracy.
2. There is not a relationship between age and sex of EFL learners and their satisfaction towards the Google Machine Translation output.

Methods

This is a descriptive research. The researcher tries to find out the relative level of EFL learners' satisfaction towards Google translation machine (English to Persian, Persian to English) and its accuracy as perceived by EFL learners, and the researcher also tries to find out whether there is a relationship between the age and the sex of users and their satisfaction towards Google translation machine (English to Persian, Persian to English) as perceived. For this research, the researcher was provided with some instruments, a lap top and an internet connection, and a questionnaire of twenty questions which was answered by over a hundred participants. The questions of the questionnaire was designed in five different parts and it tried to analyze different parts of the translating process done by Google machine translation.

The first four questions try to find out whether Google machine translation service (English to Persian, Persian to English) is perceived generally accurate and without errors. The questions in this first part are shown in the table below.

1	Google Translation's Persian to English translation is generally accurate and without errors.
2	Google Translation's English to Persian translation is generally accurate and without errors.
3	Google translation's translation could be used without having to second check.
4	Google translation's translation can be used in an academic environment and are linguistically correct.

Questions, Part 1

The second part of the questions which includes six questions tries to figure out the relative accuracy of Google machine translation system, as perceived by EFL learners, in three different areas of language and translation; idiom, context and grammar, in both English to Persian and Persian to English machine translation. The questions of this part are listed in the table below.

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5	Persian to English idiom translations done by Google Translate are accurate.
6	Persian to English context translations done by Google Translate are accurate.
7	Persian to English grammar translations done by Google Translate are accurate.
8	English to Persian idiom translations done by Google Translate are accurate.
9	English to Persian context translations done by Google Translate are accurate.
10	English to Persian grammar translations done by Google Translate are accurate.

The third part of the questions, which includes two questions, tries to find out the different possible causes to a bad and inaccurate translation from Google machine translation. The questions of this part are listed in the table below.

11	Google's allowance for people to contribute in translations causes most of the inaccurate translations.
12	Google's random online data collection in translations causes most of the inaccurate translations.

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The fourth part of the questions, which includes seven questions, tries to find out the different ways that a translation output can be improved, different methods such as, editing, putting less amount of academic words in the input section and etc. The questions of this part are listed in the table below.

13	The translation edits done by a human party improve the translation quality to a great extent.
14	The translation edits done based on random online collected data improve the translation quality to a great extent.
15	Less amount of academic words in a text result in better translations.
16	Less amount of complex structure results in better translations.
17	The translations of specific texts, such as academic texts, are more accurate than regular texts.
18	It was better if Google used a categorized data collection of formal/informal Persian words when translating into English.
19	It was better if Google used a categorized data collection of formal/informal English words when translating into Persian.

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The last part of the questions, which includes only one question asks whether google translation should be recommended to EFL learners. The questions of this part are listed in the table below.

20	Google translation could be generally recommended to EFL learners in a beginner level.
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These questions were made into a questionnaire and uploaded on Google Forms by the researcher. A five-point Likert Scale was used for rating the Google machine translation. The scale (1) was assigned for a the option of “Strongly disagree’ and (5) for the option of “Strongly Agree.’ The questionnaire was distributed using different social media platforms to EFL learners both male and female and between the ages of eighteen and thirty-eight. Most of the participant were EFL learner who also were students of language and literature. After the data of the answers were gathered, the data was entered in SPSS version 23, and then a chi-square assessment were extracted using the software and through that some information came to light (which will be explained thoroughly in the next part.)

The research investigates the kind of relationship between the following variables:

- Age and sex of participants
- All the questions including analyses for different parts of translation

The first score is the dependent variable and the second score is the independent variable.

Results

After analyzing the data which was extracted from SPSS different results came to light and the researcher was able to analyze each question based on the answers of the participants and the information gotten from SPSS and the chi-square assessment. The analyses done individually for each question are shown below. For the purpose of preventing repetition, the researcher only analyzes some of the question in this section.

The result from the first four questions, which try to find out whether Google machine translation service (English to Persian, Persian to English) is perceived generally accurate and without errors, are shown along with the chi-square table and a bar chart related to the question and an observational analysis from the researcher.

Google Translation's Persian to English translation is generally accurate and without errors. * Gender and Age

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Gender			
Pearson Chi-Square	4.247 ^a	3	.236
Likelihood Ratio	4.307	3	.230
Linear-by-Linear Association	1.159	1	.282
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 1.92.

Bar Chart

Google Translation's Persian to English translation is generally accurate and without errors.

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Chi-Square Tests

			Asymptotic Significance (2- sided)
Age	Value	df	
Pearson Chi-Square	102.843 ^a	48	.000
Likelihood Ratio	77.232	48	.005
Linear-by-Linear Association	3.289	1	.070
N of Valid Cases	100		

a. 62 cells (91.2%) have expected count less than 5. The minimum expected count is .04.

Bar Chart

Google Translation's Persian to English translation is generally accurate and without errors.

A survey on Google translation (En to Per/Per to En)

Based on the last two bar charts, the researcher can conclude that the majority of EFL users believe that the general accuracy of google machine translation system, in translating Persian to English is low and unacceptable. This belief actually intensifies as the age of the users increases.

Google Translation's English to Persian translation is generally accurate and without errors. * Gender and age

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.098 ^a	3	.552
Likelihood Ratio	2.107	3	.551
Linear-by-Linear Association	.364	1	.546
N of Valid Cases	100		

a. 1 cells (12.5%) have expected count less than 5. The minimum expected count is 4.80.

Chi-Square Tests

Age	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	97.363 ^a	48	.000
Likelihood Ratio	91.554	48	.000
Linear-by-Linear Association	.698	1	.403
N of Valid Cases	100		

a. 62 cells (91.2%) have expected count less than 5. The minimum expected count is .10.

A survey on Google translation (En to Per/Per to En)

A survey on Google translation (En to Per/Per to En)

Based on the last two bar charts, the researcher can conclude that the majority of EFL users believe that the general accuracy of google machine translation system, in translating English to Persian is low and unacceptable. This belief actually intensifies as the age of the users increases.

Google translation's translation could be used without having to second check. * Gender and age

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Gender			
Pearson Chi-Square	1.639 ^a	3	.650
Likelihood Ratio	2.026	3	.567
Linear-by-Linear Association	.170	1	.680
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .48.

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Age			
Pearson Chi-Square	86.905 ^a	48	.000
Likelihood Ratio	60.952	48	.099
Linear-by-Linear Association	.100	1	.752
N of Valid Cases	100		

a. 62 cells (91.2%) have expected count less than 5. The minimum expected count is .01.

Based on the last two bar charts, the researcher can conclude that the majority of EFL users believe that the output of google machine translation system can't be used without having to second check. This belief also intensifies as the age of the users increases.

The result from the second part of the questions, which try to find out the relative accuracy of Google machine translation system, as perceived by EFL learners, in three different areas of language and translation; idiom, context and grammar, in both English to Persian and Persian to English machine translation, are shown along with the chi-square table and a bar chart related to the question and an observational analysis from the researcher. The chi-square test and bar charts of parts idiom and context are shown.

Persian to English idiom translations done by Google Translate are accurate.*** Gender and age****Chi-Square Tests**

			Asymptotic Significance (2- sided)
gender	Value	df	
Pearson Chi-Square	.215 ^a	2	.898
Likelihood Ratio	.215	2	.898
Linear-by-Linear Association	.032	1	.859
N of Valid Cases	100		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.16.

Chi-Square Tests

			Asymptotic Significance (2- sided)
age	Value	df	
Pearson Chi-Square	63.186 ^a	32	.001
Likelihood Ratio	55.799	32	.006
Linear-by-Linear Association	8.380	1	.004
N of Valid Cases	100		

a. 46 cells (90.2%) have expected count less than 5. The minimum expected count is .17.

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Persian to English context translations done by Google Translate are accurate. * Gender and age

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
gender			
Pearson Chi-Square	1.874 ^a	3	.599
Likelihood Ratio	1.879	3	.598
Linear-by-Linear Association	.250	1	.617
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.40.

Chi-Square Tests

	Value	df	Asymptotic Significance (2- sided)
Age			
Pearson Chi-Square	89.293 ^a	48	.000
Likelihood Ratio	63.909	48	.062
Linear-by-Linear Association	4.616	1	.032
N of Valid Cases	100		

a. 62 cells (91.2%) have expected count less than 5. The minimum expected count is .05.

A survey on Google translation (En to Per/Per to En)

Based on the bar charts of the last two questions, the researcher can conclude that the majority of EFL users believe that google machine translation system idiom and context translation is not accurate and not acceptable. This belief sometimes intensifies as the age of the users increases.

The results from third part of the questions, which tries to find out the different possible causes to a bad and inaccurate translation from Google machine translation, are shown along with the chi-square table and a bar chart related to the question and an observational analysis from the researcher.

Google's allowance for people to contribute in translations causes most of the inaccurate translations. * Gender and age

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
gender			
Pearson Chi-Square	1.722 ^a	4	.787
Likelihood Ratio	1.734	4	.784
Linear-by-Linear Association	.100	1	.751
N of Valid Cases	100		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.44.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Age			
Pearson Chi-Square	45.020 ^a	64	.966
Likelihood Ratio	45.456	64	.962
Linear-by-Linear Association	.001	1	.973
N of Valid Cases	100		

a. 79 cells (92.9%) have expected count less than 5. The minimum expected count is .03.

A survey on Google translation (En to Per/Per to En)

Google's allowance for people to contribute in translations causes most of the inaccurate ...

A survey on Google translation (En to Per/Per to En)

Crosstab

		Gender		Total
		Male	Female	
Google's allowance for SD people to contribute in translations causes most of the inaccurate translations.	Count	4	5	9
	% within Gender	8.3%	9.6%	9.0%
	D Count	15	17	32
	% within Gender	31.3%	32.7%	32.0%
	UD Count	21	17	38
	% within Gender	43.8%	32.7%	38.0%
	A Count	7	11	18
	% within Gender	14.6%	21.2%	18.0%
	SA Count	1	2	3
	% within Gender	2.1%	3.8%	3.0%
Total		48	52	100
		100.0%	100.0%	100.0%

Based on the last two bar charts and crosstab, the researcher can conclude that the majority of EFL users are undecided about whether the allowing of the people in changing the translations and editing causes inaccurate translations, however a large number of participants believe that this is not true and it can actually help the translation process.

The result from the fourth part of the questions, which tries to find out the different ways that a translation output can be improved, different methods such as, editing, putting less amount of academic words in the input section and etc., is shown along with the chi-square table and a bar chart related to the question and an observational analysis from the researcher.

The translation edits done by a human party improve the translation quality to a great extent. * Gender and age

A survey on Google translation (En to Per/Per to En)

Crosstab

			Gender		Total
			Male	Female	
The translation edits done by a human party improve the translation quality to a great extent.	SD	Count	1	6	7
		% within Gender	2.1%	11.5%	7.0%
	D	Count	0	5	5
		% within Gender	0.0%	9.6%	5.0%
	UD	Count	14	15	29
		% within Gender	29.2%	28.8%	29.0%
	A	Count	25	15	40
		% within Gender	52.1%	28.8%	40.0%
	SA	Count	8	11	19
		% within Gender	16.7%	21.2%	19.0%
Total	Count	48	52	100	
	% within Gender	100.0%	100.0%	100.0%	

Chi-Square Tests

Gender	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.197 ^a	4	.056
Likelihood Ratio	10.145	4	.038
Linear-by-Linear Association	5.809	1	.016
N of Valid Cases	100		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is .96.

Chi-Square Tests

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Age	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	50.855 ^a	64	.883
Likelihood Ratio	52.466	64	.848
Linear-by-Linear Association	.152	1	.696
N of Valid Cases	100		

a. 80 cells (94.1%) have expected count less than 5. The minimum expected count is .02.

Less amount of complex structure results in better translations. * Gender and age

A survey on Google translation (En to Per/Per to En)

Crosstab

		Gender		Total
		Male	Female	
Less amount of complex SD structure results in better translations.	Count	2	5	7
	% within Gender	4.2%	9.6%	7.0%
	D Count	4	5	9
	% within Gender	8.3%	9.6%	9.0%
	UD Count	21	17	38
	% within Gender	43.8%	32.7%	38.0%
	A Count	16	19	35
	% within Gender	33.3%	36.5%	35.0%
	SA Count	5	6	11
	% within Gender	10.4%	11.5%	11.0%
Total		48	52	100
		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.009 ^a	4	.734
Likelihood Ratio	2.050	4	.727
Linear-by-Linear Association	.107	1	.743
N of Valid Cases	100		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 3.36.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	74.382 ^a	64	.176
Likelihood Ratio	70.754	64	.263
Linear-by-Linear Association	.083	1	.774
N of Valid Cases	100		

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a. 79 cells (92.9%) have expected count less than 5. The minimum expected count is .07.

It was better if Google used a categorized data collection of formal/informal Persian words when translating into English. * Gender and age

Crosstab

		Gender		Total
		Male	Female	
It was better if Google used a categorized data collection of	SD	0	4	4
	Count	0.0%	7.7%	4.0%
		% within Gender		

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formal/informal words when translating into English.	Persian D	Count	0	1	1
		% within Gender	0.0%	1.9%	1.0%
	UD	Count	7	3	10
		% within Gender	14.6%	5.8%	10.0%
	A	Count	22	25	47
		% within Gender	45.8%	48.1%	47.0%
	SA	Count	19	19	38
		% within Gender	39.6%	36.5%	38.0%
Total	Count		48	52	100
	% within Gender		100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
gender			
Pearson Chi-Square	6.642 ^a	4	.156
Likelihood Ratio	8.609	4	.072
Linear-by-Linear Association	1.285	1	.257
N of Valid Cases	100		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .48.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
age			
Pearson Chi-Square	46.291 ^a	64	.953
Likelihood Ratio	44.765	64	.968
Linear-by-Linear Association	1.352	1	.245
N of Valid Cases	100		

a. 79 cells (92.9%) have expected count less than 5. The minimum expected count is .01.

Based on the bar charts of the questions of this part, the researcher can conclude that the majority of EFL users believe that google machine translation system can be improved using different methods, methods such as, translation edits done by a human party, translation edits done based on random online collected data, putting less amount of academic words in a text, less amount of complex structure, Google's using a categorized data collection of formal/informal Persian and English words when translating.

The results from the last part of the questions, which asks whether Google translation should be recommended to EFL learners, are shown along with the chi-square table and a bar chart related to the question and an observational analysis from the researcher.

Google translation could be generally recommended to EFL learners in a beginner level. * Gender and age

Crosstab

			Gender		Total
			Male	Female	
Google translation could be generally recommended to EFL learners in a beginner level.	SD	Count	10	19	29
		% within Gender	20.8%	36.5%	29.0%
	D	Count	14	9	23
		% within Gender	29.2%	17.3%	23.0%
	UD	Count	15	14	29
		% within Gender	31.3%	26.9%	29.0%
	A	Count	6	9	15
		% within Gender	12.5%	17.3%	15.0%
	SA	Count	3	1	4
		% within Gender	6.3%	1.9%	4.0%
Total	Count	48	52	100	
	% within Gender	100.0%	100.0%	100.0%	

Chi-Square Tests

Gender	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.363 ^a	4	.252
Likelihood Ratio	5.460	4	.243
Linear-by-Linear Association	.992	1	.319
N of Valid Cases	100		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.92.

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Chi-Square Tests

Age	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	97.619 ^a	64	.004
Likelihood Ratio	82.432	64	.060
Linear-by-Linear Association	3.706	1	.054
N of Valid Cases	100		

a. 81 cells (95.3%) have expected count less than 5. The minimum expected count is .04.

Based on the bar charts of this question, the researcher can conclude that the majority of EFL users believe that google machine translation system shouldn't be recommended to EFL learners in beginner levels.

Conclusion

To investigate the satisfaction of EFL learners towards Google machine translation (English to Persian, Persian to English) and its accuracy as perceived, a questionnaire was distributed and the answers were entered into SPSS software and with the help of chi-square assessment and bar charts, the researcher could conclude that the majority of EFL users believe that google machine translation system isn't accurate and shouldn't be used for important and academic subjects.

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