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Measuring the Translation Quality of Bilingual Commercial Web in Indonesian: The Urgency of Avoiding Machine Translation

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Abstract

This research discusses the translation quality between human translation and machine translation particularly in the Indonesian - English language on a commercial website called Garudafood. This study employs a descriptive qualitative method to examine the cultural categories, TQA, and translation techniques which applied on the Garudafood product names. The process of data collection uses a purposive sampling method with cultural categories theory by Newmark (1988). It is found that there are 39 data or names of foods that are categorized into material culture. Using Molina & Albir (2002) translation techniques framework, the researcher found out that the most frequently used type of technique by HT is Established equivalent, while DeepL and Google Translate mostly used borrowing. Following the goal of this study, the researcher also uses the translation quality assessment (TQA) theory by Nababan (2012). The result shows that the TQA of Garudafood product translation is averaging a 2.65 score. Furthermore, the Machine Translations tested by the researcher only reached the total average score of 2.01 and 2.18. By comparing with the analysis of using machine translation such as DeepL Translation and Google Translate, the researcher concludes that human translation produces a better-quality translation due to the translator's understanding of various contexts compared to machine translation which generates more objective translation. This statement is also supported by comparing with previous studies related to post-editing, machine translation, and human translation.

Keywords: *Commercial Websites, Cultural Aspect, Cultural Categories, Translation Quality Assessment, Translation Techniques*

1. Introduction

In the vast expansion of technology, online media exists to connect humans around the globe. Many online media have distinct purposes: entertainment, education, law, business, and promotion. Furthermore, the development of technology can also be combined with language, which can enhance translation. According to Castilho et al. (2018), translation is a complex process that covers linguistic, social, cultural, and technological fields. Translation conveys the original meaning from the source language to the target language. According to Guo (2012, as cited in Ghithrif & Asmarani, 2023) culture is a unique pattern in society that consists of tradition, social habits, values, beliefs, and language in society. In translation, culture plays an important role when transferring ideas from one language to a different language. W & Asmarani (2016) state that language and culture are related. It means that every language has its own culture and uniqueness. In the context of translation, the connection between language and culture is known as intercultural translation. Ginting (2022) stated that the process of translation can be challenging for translators. These challenges come from the inseparable connection between language and culture. Different cultures from both source language and target language require translators to spend more time finding the equivalents as well as seeking the most suitable translation strategy. Cultural contents that contain typical dish from certain place, traditions, or even unique terms often don't have direct equivalents. This can lead to mistranslations if generated by machine such as Google translate and DeepL Translation without human post-editing process.

A study on post-editing in translation by Rivera-trigueros (2021) shows that human translation (HT) is ahead of (MT) in generating more fluent and accurate translations, although MT is much more efficient. Machine translation struggles to interpret the context and cultural nuances that human translators possess. This leads to machines generating unreliable translation work when the context relates to complex text in specific fields. Ismajli & Maliqi (2021, p. 326) stated that until today, no computer-aided tool or machine translation has been proven to be a reliable accessory, mainly when translating complex text such as poetry, idioms, or figurative speech. The most noticeable thing that differentiates humans from machines is that humans have common sense and logical deduction to conclude meanings, regardless of the complex ideas (Ismajli & Maliqi, 2021).

One common use of translation today can be found in commercial websites, which serve as a platform for sharing information to various regions, including overseas, through internet. On this matter, evaluating translation is necessary to maintain the consistency of high-quality translation to the target text. This allows translators as well as learners to develop their skills in transferring ideas from the source language to the target language, ensuring the target reader's convenience. Therefore, the researcher uses the translation quality assessment by Nababan et al. (2012) to evaluate the accuracy, acceptability, and the readability of target language on the Garudafood website. Since garudafood features many food related-terms that are unfamiliar to foreign audiences, it is chosen as the data source. This aspect is compelling, as the products contain traditional food that are commonly known by Indonesians but it is rarely found in other countries, and sometimes foods related terms cannot be translated directly because their equivalences don't exist. For example, *abon*, which is a popular Indonesian meat in a form that similar to candy floss. Transferring ideas or culturally rich terms like *abon* is very crucial due to the differentiation of cultures in each region.

Generating high-accuracy of translation is not an easy thing to do. This kind of translation difficulty commonly occurs when translating cultural aspects such as names of food, customs, traditional activities, and places Pham et al. (2022). Assessing the translation quality can help translators achieve the desirable result in the target language. Consequently, target text readers can easily catch the original ideas from the source text.

To briefly describe the assessment, the researcher took samples of HT and MT websites. The HT is taken from the official Indonesian information portal website that can be accessed through the link: https://indonesia.go.id/kategori/budaya/9035/tradisi-sadranan-warga-lereng-merapi?lang=1. On the other

hand, the sample of MT is taken from the Blora district government website, which can be accessed through the link: https://www.blorakab.go.id/index.php/public/berita/detail/6920/refleksi---janur-kelapa--lebaran-ketupat-dan-filosofinya. The researcher took two words or phrases that represent cultural content, which is translated to English, as explained in tables below:

Example of Human translation in the Indonesian information portal website

SL	TL	Trans technique	(TQA)		
			Acc	Acp	Read
Tenong	Tenong (round or flat tube-shaped woven bamboo food container)	Description	3	3	3
Ingkung ayam	Ingkung ayam (whole roasted chicken)	Description	3	3	3

Example of Website that uses machine translation (auto-translation by Google Translate)

SL	TL	Trans techniques	TQA)		
			Acc	Acp	Read
Selongsong Ketupat dan lepet	Ketupat and lepet **casings**	**Calque**	2	1	2
Tali silaturahmi	Ties of friendship.	Discursive creation	1	2	3

According to the examples above, the average score of TQA for HT is 3, while the MT only reaches 1.67 on average. Furthermore, translation techniques used in the human translation is different compared to machine translation. In those examples, HT uses a description technique in order to describe the form of dishes from the source language to the target language. In the field of translation, the description technique can be used to convey content or ideas in different languages, making it easier for target readers to fully grasp about what is the form or the function of the original idea from the source language. On the other hand, MT uses a variety of techniques namely calque and discursive creation. The issue with the example above, MT mistakenly uses calque to translate the word *"selongsong"* into "casings." The word "casings" feels unnatural, which can be replaced by using the word "wrapper." The second example of MT, the discursive creation technique is not the best option to translate *"tali silaturahmi."* In the source language, *"tali silaturahmi"* means to strengthen the relation between family, friends, and relatives (Setiawan, Kamus Besar Bahasa Indonesia (KBBI)), which is contradictory with the machine translation that exclusively translated it into friendship only relation or "ties of friendship," hence, it is rated as not accurate. Although these results are just examples and may not represent the whole result, they are enough to be a rough estimation or description for the researcher to see why it is urgent to avoid using machine translation.

A previous study that covers MT systems, structures, and translation quality was conducted by Rivera-Trigueros (2021). Different from the current study, Rivera-trigueros (2021) focuses on English–Spanish translation, while the present study focuses on Indonesian – English translation. Through qualitative method and evaluation method, this research was mainly focusing on systematic review of 27 studies on machine translation evaluation. Unlike the current study that uses TQA framework by Nababan et al.

(2012) to directly examine HT and MT, the research done by Rivera-Trigueros (2021) did not direct involve data analysis, but rather on reviewing past literatures.

The research entitled "Adequacy in Machine vs. Human Translation: A Comparative Study of English and Persian Languages" aims to examine the translation adequacy between machine and students when transferring seven different texts from English to Persian. Farahani (2020) uses both quantitative and qualitative methods. Using technical texts and reference translation, Farahani (2020) measure the difference between MT and HT output. In contrast, the current research evaluates not only the adequacy, but also the acceptability, and readability of MT and HT through the framework by Nababan et al. (2012).

Moreover, a past related study entitled "Post-Editing of Machine Translation: Creating a Better Translation of Cultural Specific Terms" conducted by Pudjiati et al. (2024) also guide this research field. Through semantic analysis to identify mistranslations, their study aimed to improve MT through post-editing in the context of Indonesian – English translation of cultural specific items (CSI). On the contrary, the present study compares the quality of MT and HT without going through post-editing, using TQA framework by Nababan et al. (2012). Both studies highlight issues in translating cultural content, through different methods and assessment process.

Lastly, the most recent research that compares human translation with machine translation was conducted by Haseeb et al. (2025). Different from the current study, their evaluation focused on accuracy, fluency, cultural sensitivity, and contextual understanding using human judgement. The subject for this comparative study was literary, technical, legal, and colloquial Urdu – English texts. On the other hand, the current study focuses on culturally rich texts using Nababan et al.'s (2012) theory to evaluate accuracy, acceptability and readability of Indonesian – English translation.

Based on the translation issues as well as the debate between human and machine translations, this study is guided by the following statement of the problems:

1. How many material culture – related products can be found on the Garudafood website?
2. Which translation technique is most frequently used by HT and MT when translating products on the Garudafood website?
3. Which translation techniques is rated highest in terms of translation quality?
4. How do HT and MT translate Garudafood products text compare based on the accuracy, acceptability, and readability?

2. Literature Review

2.1 Translation

The translation is defined by Larson (1984) as a process of transferring the source language into the target language without changing the meaning from the source language. According to Newmark (1988), translation is a process of rendering ideas from one language to another in the way the writer intended. It is an act to change the form of ideas without changing the meaning from the source language into the target language. Translation can be in the form of written text and even spoken utterances. Furthermore, not only that translation covers the meaning of a certain text or language, but it also covers the structure value, equivalences, and a variety of contexts. The goal of translation is to find the most equal meaning and structure from one language to another (Normalita & Nugroho, 2023).

2.2 Cultural Categories

According to the theory of cultural categories which was proposed by Newmark (1988), 5 cultural words differentiate one another, namely Ecology, Material Culture, Social Culture, Organisations, and Gestures and Habits.:

1. Ecology. According to Newmark (1998), numerous concepts referring to organisms and their habitats can be categorized into this category if they are not associated with value and political matters.
2. Material Culture. This category mostly includes 'artifacts' or physical products of a culture, with the most common examples being food, clothes, houses, and transportation. However, Newmark discovered that food phrases are the most sensitive since they are subject to the most diverse translation techniques, making them challenging to translate.
3. Social Culture. This category is defined by Peter Newmark as phrases that are related to the kind of jobs, sports, entertainment, political hierarchy, and other social aspects without a physical form.
4. Social Organization. In this context, the social organization refers to something that is addressed and it is appropriate in the target language. Newmark described this category as statements on labor, sports, politics, and other social issues that lack a physical shape.
5. Gesture and Habits. This type of cultural category can be found when there is a difference in activities or events between their description and function particularly that happen in ambiguous cases for the target language or culture.

The classification of cultural categories by Newmark (1998) shows that translators need to pay extra attention and even give additional information for target readers to understand the original idea from the source text.

2.2 Cultural Categories

To determine the original meaning in the target language from the source language, the researcher aims to investigate the translation approach used by the translator. In this study, the researcher used the translation approaches specified by Molina and Albir (2002), which include 18 different methods. For more explanation, here are the explanations including the application example on English – Indonesian content taken from Utami & Satyaningrum (2022):

1. Adaptation is a translation approach that matches the cultural characteristics of the source and target languages.
   SL: “on Thursday at half-past twelve.”
   TL: “pada hari Kamis pukul 12:30”
2. Amplification is a strategy for providing more precise information about something that is not expressly expressed in the original language.
   SL: “Baghdad had been destroyed by the Mongols.”
   TL: “Baghdad telah dihancurkan oleh pasukan Mongol.”
3. Borrowing is the process of absorbing a term or phrase from the original language. There are two types: pure borrowing and naturalized borrowing.
   Pure borrowing:
   SL: “harddisk”
   TL: “harddisk”
   Naturalized borrowing:
   SL: “Computer”
   TL: “Komputer”
4. Calque is a direct translation consisting of words or phrases from the source language to the target language.
   SL: “She is the new assistant manager.”
   TL: “Dia adalah asisten manajer yang baru.”
5. Compensation is a method that moves the message to another area of the text to be translated.
   SL: “Never did he visit his wife.”
   TL: “Pria itu benar-benar tega tidak menemui istrinya.”
6. Description. The goal of this technique is to develop the shape or function of the thought or statement in the target text.

SL: "I don't like to eat panettone."
TL: "Saya tidak suka memakan panettone, kue tradisional Italia yang dimakan pada saat tahun baru."

7. Discursive creation. Establishing out-of-context translation.
   SL: "Husband for A Year (Rebecca Winters)"
   TL: "Suami sementara"
8. Established equivalent is using terminology from dictionaries or daily languages.
   SL: "Sincerely yours."
   TL: "Hormat saya."
9. Generalization is the use of generic terminology in the target language to generalize specific text in the source language.
   SL: "Her penthouse was destroyed by a storm."
   TL: "Tempat tinggalnya dihancurkan oleh badai."
10. Linguistic amplification is the addition of linguistic elements to a text in the target language.
    SL: "Let me take it."
    TL: "Biar saya saja yang mengangkat teleponnya."
11. Linguistic compression. Synthesizing linguistic elements is the opposition to linguistic amplification.
    SL: "Are you thirsty?"
    TL: "Haus?"
12. Literal translation. Translating an expression through a word-for-word method.
    SL: "Grandfather gave the book to John yesterday."
    TL: "Kakek memberi buku itu ke John kemarin"
13. Modulation. Changing the point of view, focus or cognitive category of the source text.
    SL: "You are going to have a grandchild."
    TL: "Anda akan menjadi seorang kakek."
14. Particularization. Using precise terms, which is the opposite of generalization.
    SL: "air craft."
    TL: "pesawat."
15. Reduction. Suppressing or reducing information from the source language to the target language.
    SL: "He got into a car accident."
    TL: "Dia mengalami kecelakaan."
16. Substitution. Changing paralinguistic elements that are related to intonation, gestures, etc.
    SL: "He shakes his head."
    TL: "Dia tidak setuju."
17. Transposition. Changing the grammatical category.
    SL: "You must protect the key."
    TL: "Kunci itu harus kamu lindungi."
18. Variation. Changing either linguistic or paralinguistic elements that affect linguistic variation.
    SL: "Give it to me right now!"
    TL: "Kasih ke gue sekarang!"

2.3 Translation Quality Assessment

Translation Quality Assessment (TQA) is a systematic evaluation of the accuracy, acceptability, and readability of translated text. The purpose of this method is to ensure the final work of translation is conveyed smoothly with the aimed objectives. Not only does TQA evaluate the linguistic accuracy of a text, but it also covers cultural aspects, contextual meaning, and even the coherence of the target text. According to the translation quality assessment theory proposed by Nababan et al. (2012), there are three main aspects to evaluate the work of translation as explained below:

Table 1 Translation Accuracy Assessment Instrument

Category	Score	Qualitative Parameter
Accurate	3	The original idea or meaning from the source language is transferred accurately into the target language. A score of 3 also indicates that there are no distortions or significant changes in meaning in the target language.
Less Accurate	2	Most of the original ideas and meaning of text from the source language are conveyed accurately, however, some double meanings or ideas aren't fully transferred into the target text.
Inaccurate	1	Most of the original ideas and meanings from the source language are missing and inaccurately transferred into the target language.

Source: Nababan et al. (2012)

Table 2 Translation Acceptability Assessment Instrument

Category	Score	Qualitative Parameter
Acceptable	3	The translation feels natural to be read in the target language. Not only that, a third score translation often uses general phrases or vocabulary that are used daily by readers in the target language.
Less Acceptable	2	The translation is generally easy to understand but minor errors such as grammatical mistakes can be found in the target language.
Unacceptable	1	The translation feels unnatural. Usually, an unacceptable translation uses phrases that are rarely found in the target language.

Source: Nababan et al. (2012)

Table 3 Translation Readability Assessment Instrument

Category	Score	Qualitative Parameter
High Readability	3	The translation is easy to understand and read by the target reader in the target texts. This includes the words, technical terms, phrases, clauses, sentences, or text.
Medium Readability	2	Although the translation is readable to the target readers, some parts need to be fixed to enhance the clarity.
Low Readability	1	The translation is hard to understand.

Source: Nababan et al. (2012)

3. Research Methods

3.1 Research Design

The method used in this research is a descriptive qualitative method. Moleong (2010) defines descriptive qualitative research as an in-depth comprehension of a subject's behavior, perception, motivation, and action, as well as the use of language to describe the results. As stated by Sugiyono (2008), research that uses descriptive qualitative gathers data in the form of words. Moreover, since qualitative research aims to study humans through a phenomenological approach, qualitative research analyzes words and human actions and is written narratively or descriptively (Maykut & Morehouse, 1994).

3.2 Source of Data

The primary source of data for this study comes from the page that covers brands or products of Garudafood company. It can be accessed through the link https://garudafood.com/produk. Each product that is presented on the page has a unique name of food, which is rare to find in the English language. The source data covers the whole name of foods that are usually difficult to translate. Furthermore, the unit analysis of this research is each word or phrase within product names, as listed on the Garudafood

website. These words that are analyzed word for word to identify the translation techniques as well as to measure the translation quality.

3.3 Instruments

To collect the data, the researcher employed a purposive sampling method. According to Sugiyono (2018), purposive sampling is a type of technique that is used under a certain consideration that has the desired criteria to collect data. This means that researchers intentionally collect data with certain criteria which as food products that contain material culture on the Garudafood website. The data were collected through a series of steps. In the first step the researcher accessed both Indonesian and English versions of the product or brand list section through the link https://garudafood.com/produk and https://garudafood.com/our-brands. At the time this research was conducted which was in 2024, there were only two sections namely Garuda and Gery food Product Sections. Furthermore, the researcher collected the data particularly that were classified into material culture, which include both Indonesian and English version of food products that were listed on the website. These website translations were treated as Human Translation Data. Lastly, the same Indonesian text of Garudafood products were input into DeepL Translation and Google Translate to produce English version by machine translations. This step was done to see the difference between Human Translation and Machine Translation in terms of Translation Quality, particularly in the field of material culture.

3.4 Data Analysis

Upon collecting the data that contain cultural aspects on the Garudafood website, the analysis was continued by analyzing the translation techniques. First, the researcher made sure that all of the data are classified into material culture based on the classification of cultural categories by Newmark (1988). Next, the researcher also explored the translation techniques employed by the website translator or the human translation as well as the machine translation. To do that, the researcher examined two specific translation tools which are DeepL Translation and Google Translate. As a comparison between HT and MT, these tools are used to translate the collected data. Lastly, the data which includes the translation generated by DeepL and Google Translate is analyzed using translation quality assessment (TQA) by Nababan to see how well the quality of the translation of product names that contain cultural aspects on the Garudafood website. The scoring of the translation quality of both HT and MT were conducted by the researcher.

In order to produce reliable analysis results toward the quality of the translations, 10 raters were selected to review the assessment of accuracy, acceptability, and readability of translations by HT and MT. Although the raters did not involve in scoring the translations, they reviewed the result and confirmed that score is reasonable. The raters were chosen following the criteria as explained below:

1. Understand the basic translation theories including translation quality assessment and translation techniques framework.
2. Have relevant academic background in translation studies.
3. Have experience in evaluating translation texts especially Indonesian – English texts.
4. Fluent in both Indonesian and English.
5. Willing to provide objective feedback on the researcher's TQA scoring.

4. Results

According to the analysis result, the researcher found 39 names of products that contain cultural aspects on the Garudafood website. By using Peter Newmark's classification of cultural categories, all of the 39 data are categorized into material culture. This result is not surprising at all because anything related to food is included as a cultural aspect, which automatically makes it a part of material culture.

4.1 Translation Techniques Result

Additionally, the researcher also analyzed the 39 data using the translation technique theory by Molina and Albir. The researcher found a total of 86 techniques used by the translators in transferring 39

names of foods from Indonesia (SL) to English (TL). Not only that, MT 1 or DeepL Translation uses a lot fewer translation techniques with a total of 73 techniques. The MT 2 or Google Translate is similar to MT 1 with a total of 76 techniques only.

Table 4 Translation Techniques Findings

No	Types of Translation Techniques	Frequencies			Percentage		
		HT	MT 1	MT 2	HT	MT 1	MT 2
1	Adaptation						
2	Amplification						
3	Borrowing	24	38	36	28%	52%	47%
4	Calque	4	8	9	5%	11%	12%
5	Compensation		1	2		1%	3%
6	Description	5			6%		
7	Discursive Creation	2			2%		
8	Established Equivalent	26	20	25	30%	27%	33%
9	Generalization						
10	Linguistic Amplification	5			6%		
11	Linguistic Compression	1			1%		
12	Literal Translation	2	5	4	2%	7%	5%
13	Modulation						
14	Particularization	1	1		1%	1%	
15	Reduction	16			19%	1%	
16	Substitution						
17	Transposition						
18	Variation						
Total		86	73	76	100%		

According to Table 4, the most frequently used type of translation technique by the Garudafood translator or the human translator is the established equivalent. This means that the translator tries to transfer the original idea or meaning from the source language to the target language, using the right equivalences that can be easily understood by the target readers.

Furthermore, the researcher also analyzed the translation of garudafood by humans (HT) and machines (MT) such as DeepL and Google Translate. Using the translation quality assessment (TQA) by Nababan, the assessment shows that the overall average score of translation quality for HT is 2.65. On the other hand, the average TQA score for the translation generated by DeepL Translation is 2.01 score and 2.18 for Google Translate. The explanation about the data analysis and the measuring of accuracy, acceptability, and readability, are presented in the examples below:

4.1.1 Accuracy

As explained in the beginning, number 3 represents the highest score of accuracy. The score 3 also shows that the translation is accurately transferred from the source language to the target language with no distortion of meaning. In the aspect of accuracy, the human translation is able to translate the garuda food products using 86 translation techniques with the result of 55 accurate, 29 less accurate, and 2 inaccurate translations. Meanwhile, the quality of translation techniques used by DeepL Translation is 25 accurate, 30 less accurate, and 18 inaccurate translations out of 73 total techniques. Moreover, Google Translate generates translation using 76 techniques with the result of 33 accurate, 27 less accurate, and 16 inaccurate translations.

Excerpt 1

Human Translation

SL	TL	Trans techniques	Translation quality assessment (TQA)		
			Acc	Acp	Read
Kacang Kulit Rasa Bawang dan Kacang **Biga** *atau* kacang dengan tiga butir isi	Onion-flavored shelled peanuts and **biga** shelled peanuts, *which are* peanuts with three nuts.	1. Established Equivalent **2. Borrowing** *3. Particularization*	3 2 3	3 2 3	3 2 3

Machine Translation 1 (DeepL Translation)

SL	TL	Trans techniques	Translation quality assessment (TQA)		
			Acc	Acp	Read
Kacang Kulit Rasa Bawang dan Kacang **Biga** *atau kacang dengan tiga butir isi*	Onion-flavored skin beans and **Biga** beans *or beans with three grains of filling*	1. Calque **2. Borrowing** ***3.** literal translation*	1 2 1	1 2 1	2 2 2

Machine Translation 2 (Google Translate)

SL	TL	Trans techniques	Translation quality assessment (TQA)		
			Acc	Acp	Read
Kacang Kulit Rasa Bawang dan Kacang **Biga** *atau kacang dengan tiga butir isi*	Onion flavored peanuts and **Biga** *peanuts or peanuts with three gains of filling*	1. Established equivalent **2. Borrowing** *3. literal translation*	3 1 1	3 1 1	3 2 2

Same as all of the products on the Garudafood website, the example above is categorized into material culture. Between the HT, MT 1, and MT 2, there are some noticeable differences, particularly in the type of translation technique that are used. In the HT, the phrase "***Kacang kulit rasa bawang dan kacang...***" is translated to "Onion-flavored shelled peanuts and.." using an established equivalent technique and the result is accurate with a 3 score. On the other hand, MT 1 uses a different approach. The MT 1 uses calque, transferring the term "*kacang kulit*" into "skin beans" which is inaccurate. This will create confusion among the target reader about what type of product is the company selling, the reader may think that the Garuda company only sells peanut skin, not the actual peanut.

Besides that, the last phrase which is "*...atau kacang dengan tiga butir isi.*" is properly translated by the HT into the target language "which are peanuts with three nuts" using established equivalent. Meanwhile, both MT 1 and MT 2 use literal translation, conveying the source language into "or beans with three grains of filling" and "or peanuts with three grains of filling." Although both of them are generally accurate and acceptable, however, the translation seems to be stiff and they both use unfamiliar terms for a snack product which is "grains." These results affect the readability of the translation in the target language.

Table 5 Findings on the Accuracy of Translation Techniques

No	Types of Translation Techniques	TQA – HT			TQA – MT 1			TQA – MT 2		
		3	2	1	3	2	1	3	2	1
1	Adaptation									
2	Amplification									
3	Borrowing	15	9		12	21	5	14	16	6
4	Calque	3	1		1	1	6	2	2	5
5	Compensation					1			1	1
6	Description	5								
7	Discursive Creation			2						
8	Established Equivalent	25	1		11	6	3	15	8	2
9	Generalization									
10	Linguistic Amplification	2	3							
11	Linguistic Compression		1							
12	Literal Translation	1	1		1	1	3	2		2
13	Modulation									
14	Particularization	1			1					
15	Reduction	3	13							
16	Substitution									
17	Transposition									
18	Variation									
Total		55	29	2	26	30	17	33	27	16

4.1.2 Acceptability

Similar to the aspect of accuracy, the acceptability aspect also has the same scoring system. Translation that achieves a 3 score of acceptability must be natural and easy to understand for readers in the target language. In this research, the human translation produces 60 acceptable translations, 26 less acceptable translations, and 0 unacceptable translations. Meanwhile, the DeepL machine translation generates 17 acceptable, 30 less acceptable, and 26 unacceptable translations. While the other MT, which is Google Translate is able to generate 24 acceptable, 32 less acceptable, and 20 unacceptable translations.

Excerpt 2

Human Translation

SL	TL	Trans technique	Translation quality assessment (TQA)		
			Acc	Acp	Read
Garuda Ocorn Rasa Asin Gurih	**Garuda Ocorn** Butter Flavour	**1. Borrowing** 2. Establish equivalent	3 3	3 3	3 3

Machine Translation 1 (DeepL Translation)

SL	TL	Trans technique	Translation quality assessment (TQA)		
			Acc	Acp	Read
Garuda Ocorn Rasa Asin Gurih	**Garuda Ocorn** Salty Savory Flavor	**1. Borrowing** 2. Literal Translation	3 2	3 2	3 2

Machine Translation 2 (Google Translate)

SL	TL	Trans technique	Translation quality assessment (TQA)		
			Acc	Acp	Read
Garuda Ocorn Rasa Asin Gurih	**Garuda Ocorn** Salty Savory Flavor	**1. Borrowing** 2. Literal Translation	3 2	3 2	3 2

From the example above, the difference between the HT and MT can be found on the translation of the word *"Asin"* from the SL. The human translator decides to translate "*asin"* into "butter" for an easier understanding in the TL. In English-language countries such as the USA, butter is commonly used as a glaze to make food taste salty and flavourful. Hence, why the acceptability score of HT is 2. On the other hand, both DeepL translation and Google Translate use the same phrase which is "salty savory". This translation is acceptable and can be understood by the target reader, however, it can be changed into "buttery flavour" for a better and acceptable equivalence.

Table 6 Findings on the Acceptability of Translation Techniques

No	Types of Translation Techniques	TQA – HT			TQA – MT 1			TQA – MT 2		
		3	2	1	3	2	1	3	2	1
1	Adaptation									
2	Amplification									
3	Borrowing	8	15		4	19	15	5	18	13
4	Calque		4			3	5	2	3	4
5	Compensation				1			1	1	
6	Description	5								
7	Discursive Creation	2								
8	Established Equivalent	26			11	7	2	14	10	1
9	Generalization									
10	Linguistic Amplification	6								
11	Linguistic Compression	1								
12	Literal Translation	2			1	1	3	2		2
13	Modulation									
14	Particularization	1					1			
15	Reduction	9	7							
16	Substitution									
17	Transposition									
18	Variation									
Total		60	26	0	17	30	26	24	32	20

4.1.3 Readability

The score of 3 in the readability aspect shows that a work of translation has high readability which is easily understood by target readers. According to Nababan, this aspect refers to how well is the readability of the equivalence in the target text.

Excerpt 3

Human Translation

SL	TL	Trans technique	(TQA)		
			Acc	Acp	Read
Garuda Pilus Rasa Abon Sapi	Round Crackers Snack With Beef Floss Flavor	**1. Reduction** 2. Description 3. Established Equivalent	2 3 3	2 3 3	3 3 3

Machine Translation 1 (DeepL Translation)

SL	TL	Trans technique	(TQA)		
			Acc	Acp	Read
Garuda Pilus Rasa Abon Sapi	**Garuda Pilus** Flavored with Beef Abon	**1. Borrowing** 2. Calque	2 1	1 1	1 2

Machine Translation 2 (Google Translate)

SL	TL	Trans technique	(TQA)		
			Acc	Acp	Read
Garuda Pilus Rasa Abon Sapi	**Garuda Pilus** Beef Floss Flavor	**1. Borrowing** 2. Established equivalent	2 3	1 3	1 3

The word *"Pilus"* is rarely found in English native countries. Therefore, the translator decided to use translation techniques called description and transfer it into "Round Crackers Snack." The purpose of this technique is to transfer ideas from the source language that don't have direct equivalence in the target language. Due to the application of description translation techniques, the translator deletes the word "Garuda" to maintain clarity and the readability using reduction technique. Furthermore, the translator used established equivalent to transfer the phrase *"Rasa Abon Sapi"* and change it into "Beef Floss Flavor." Although the translation above doesn't have a score of 3 for accuracy because of the deletion of the word "Garuda", the translator successfully produces a translation with 3 scores of acceptability and readability. Meanwhile, the machine translations generate translation using different techniques. DeepL Translation uses calque to translate SL "*abon sapi"* into "beef abon" with calque. This makes the translation in the target language hard to understand and read for the target reader, because not many people in the English-speaking country know what *abon* is. On the other hand, Google Translate is able to generate better equivalence using the same technique as the HT which is established equivalent.

Table 7 Findings on the Readability of Translation Techniques

No	Types of Translation Techniques	TQA – HT			TQA – MT 1			TQA – MT 2		
		3	2	1	3	2	1	3	2	1
1	Adaptation									
2	Amplification									
3	Borrowing	12	11		10	17	11	11	18	7
4	Calque	2	2		1	4	3	3	3	3
5	Compensation					1		1	1	
6	Description	5								
7	Discursive Creation	2								
8	Established Equivalent	24	2		11	6	3	17	7	1
9	Generalization									
10	Linguistic Amplification	6								
11	Linguistic Compression	1								
12	Literal Translation	2			1	3	1	1	3	
13	Modulation									
14	Particularization	1					1			
15	Reduction	11	5							
16	Substitution									
17	Transposition									
18	Variation									
Total		66	20	0	23	31	19	33	32	11

4.2 Translation Quality Assessment Result

Upon analyzing the three aspects of translation quality (accuracy, acceptability, readability), the researcher calculated the translation quality of the Garudafood website products to find the average score using the formula taken from Nababan et al. (2012).

$$\text{TQA} = \frac{\big((\text{Average accuracy score x } 3) + (\text{Average acceptability score x } 2) + (\text{Average readability score x } 1)\big)}{\text{Sum of each aspects value } (3 + 2 + 1)}$$

Figure 1 Overal Formula for Translation Quality Assessment

According to the formula, the calculation is as explained below:

a. Human Translation

$$\text{TQA} = \frac{\big((2.58 \text{ x } 3) + (2.70 \text{ x } 2) + (2.77 \text{ x } 1)\big)}{3 + 2 + 1}$$

$$\text{TQA} = \frac{7.74 + 5.4 + 2.77}{6}$$

$$\text{TQA} = \frac{15.91}{6}$$

$$\text{TQA} = 2.65$$

b. Machine Translation 1 (DeepL Translation)

$$TQA = \frac{\big((2.10 \text{ x } 3) + (1.84 \text{ x } 2) + (2.05 \text{ x } 1)\big)}{3 + 2 + 1}$$

$$\text{TQA} = \frac{6.3 + 3.68 + 2.05}{6}$$

$$\text{TQA} = \frac{12.03}{6}$$

$$\text{TQA} = 2.01$$

c. Machine Translation 2 (Google Translate)

$$TQA = \frac{\big((2.22 \text{ x } 3) + (2.05 \text{ x } 2) + (2.29 \text{ x } 1)\big)}{3 + 2 + 1}$$

$$\text{TQA} = \frac{6.66 + 4.1 + 2.29}{6}$$

$$\text{TQA} = \frac{13.05}{6}$$

$$\text{TQA} = 2.18$$

According to the calculation above, it shows that the translation quality of the name of foods on the Garudafood website is 2.65 which is made by a human translator. The researcher also did an analysis with two different machine translations namely DeepL Translation and Google Translation as a comparison. This result reveals that the translation of Indonesian food names on the Garudafood website is considered to be well since it has a 2.65 score, compared to both of the MT which only reached 2.01 and 2.18 average scores. A score of 2.65 means that the accuracy of the translation is less accurate, acceptable, and readable because many terms need to be deleted or reduced by the translator so that the target readers easily understand the original meaning from the source language. However, most of the time, the translator of the Garudafood website can maintain the original idea from the source language in the target language.

5. Discussion

With the findings of TQA and translation techniques presented in the result section, it can be seen that HT is ahead of MT in terms of translating material culture terms names which in this context are mostly food product names, listed on the Garudafood website. The overall translation quality assessment (TQA) score for HT is 2.65. On the other hand, the two different MT that were chosen to conduct a translation on the same source texts into English produces quite less in terms of quality. The MT 1 or DeepL Translation has a total average score of 2.01 and the average score for translation generated by MT 2 or Google Translate is 2.18. Based on these scores, the researcher determines that MT isn't capable enough to replace HT, at least in translating material culture terms such as food related items. However, the difference between HT and MT aren't that far and Machine has a lot of potential to improve more in the upcoming times. According to the analysis done by the researcher, it is found that the most used type of translation techniques in HT is established equivalent techniques. Not only that, HT uses established equivalent a lot more than the machines. According to Molina and Albir (2002), established equivalent is when translators use terminology from dictionary or daily languages. On the other hand, both DeepL and Google translate mostly uses borrowing translation techniques, with over 30 findings on each of them. According to Molina and Albir (2002), borrowing is a type of technique that uses a term from the original language. It means that the translator uses the exact terms from the source text as the equivalent of that terms in the target text.

The overall results of this study show that the translation quality specifically in terms of accuracy, acceptability, and readability is higher in human translation than in machine translation. This finding aligns with Rivera-Trigueros (2021), who examined 27 research articles comparing the performance of MT and HT. According to this systematic review study, machine translation has improved a lot, particularly the latest generation which is neural machine translation (NMT). However, the new systems still lack of quality when compared to human translation. Machine translation also produces objective and requires fewer resources. Based on Rivera-Trigueros (2021), MT struggles with longs sentences, idioms, or natural contexts. Not only that, the usage of MT still needs to be reviewed through post-editing. Similar to the current study, this study found that human translation is a lot more reliable due to its flexibility in many contexts and its subjectivity. This can be seen from the variety of translation techniques used by HT, namely established equivalent, borrowing, reduction, linguistic amplification, description, calque, literal translation, discursive creation, linguistic compression, and particularization.

Another previous study that compares MT and HT is research done by Faraharani (2020). The finding of his study shows that there is no significant difference in terms of adequacy between HT and MT in translating English – Persian texts. Compared to this study, the translation quality output between HT and MT has a noticeable gap, especially in terms of accuracy, acceptability, and readability of Indonesian – English language pair. This difference between the two studies may come from the subject of the research, where Farahani focused on technical texts. In contrast, the present study examines cultural texts that relate to traditional or typical Indonesian food, which require more contextual and cultural understanding.

The findings of this study also align with research conducted by Pudjiati et al. (2022). Their study that focuses on machine translation in translating cultural specific-items (CSI), shows that MT often generate mistranslations. Cultural specific-items such as *gubug* and *tempayan*, were mistranslated or even untranslated by the machine translations. Not only that, MT also struggles to generate accurate social-cultural terms and figurative language in the target texts. Both studies agree that to produce the most accurate, acceptable, and readable translation, MT requires human supervision, especially when translating culturally rich texts.

The analysis result of the comparative study of machine and human translation across various texts by Haseeb et al. (2025), is also similar to the present research. Machine struggles with fluency, cultural sensitivity, and idiomatic expressions. A related example from the current study is when both DeepL and Google translate tried to translate the phrase *asin gurih* into "salty savory," applying literal translation which sounds awkward and unnatural in English. While the HT translated the phrase *asin gurih* into "butter," using established equivalent technique, which is a lot more fluent and natural for the target audience. Although both studies emphasize the limitations of MT in translating cultural content, Haseeb et al. examined a broader texts types including literary, technical documents, legal, and conversational language, whereas the current study only cover food related-terms.

6. Conclusion

In conclusion, there are 39 data set of material culture of Garudafood product names. The translation quality assessment analysis between HT and MT shows that human translation has better translation quality against machine translations (DeepL Translation and Google Translate), in terms of accuracy, acceptability, and readability. The translation quality of HT is considered to be quite good, averaging a 2.65 score with 86 total translation techniques. This means that the translator can transfer the names of foods on the Garudafood website well enough to be understood by the target readers. On the other hand, the translation quality of DeepL Translation only reaches a 2.01 average score with a total of 73 translation techniques. Furthermore, Google Translate generates a better result than DeepL, reaching a 2.18 average TQA score with a total of 76 translation techniques. This result shows that machine translation such as DeepL and Google Translate can be used to translate material culture terms from Indonesia to English but it can only produce less accurate, less acceptable, and less readable than HT. Moreover, the highest rating of translation technique toward accuracy, acceptability, and readability can be found in the translation produced by HT or the translator of the Garudafood website which is established equivalent. The total score of accuracy is 77, averaging the total quality assessment of 2.96 scores. The total score of acceptability is 78, averaging a total of 3 scores. Lastly, the total score of readability is 76, averaging a total of 2.92 scores.

Since the advancement of technology is always moving forward rapidly, this research represent basic examination of this topic. With all of the other limitations of this research, further investigation on comparative analysis of machine translation and human translation is highly recommended. Further researcher may dive deeper into this matter with different type of texts and contexts. The researcher also suggests future researchers to apply translation quality assessment framework by Nababan et al. (2002) to find the quality of translation in terms of accuracy, acceptability, and readability.

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