TRANSLATION MISMATCHES BETWEEN GOOGLE TRANSLATE AND HUMAN TRANSLATIONS OF SAMPLED KISWAHILI/ENGLISH NEWSPAPER HEADLINES

ESTHER KISILU, M.A (English and Linguistics**)**
C50/27823/2019

A RESEARCH PROJECT PRESENTED TO THE SCHOOL OF LAW, ARTS AND SOCIAL SCIENCES (LITERATURE, LINGUISTICS AND FOREIGN LANGUAGES DEPARTMENT), KENYATTA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS OF THE AWARD OF THE DEGREE OF MASTERS OF ARTS IN ENGLISH AND LINGUISTICS

JUNE, 2024.

DECLARATION

This project is my original work and has never been presented for examination in any other university or academic institution.

Signature_____ Date_____

ESTHER KISILU

C50/27823/2019

Declaration by the supervisor

This project has been submitted for review with my approval as a university supervisor.

Signature_____ Date_____

Dr. Joyce Wangia

Department of Literature, Linguistics and Foreign Languages

Kenyatta University

DEDICATION

To my dear dad. For your constant reminder that I needed to undertake this study, your effort in always making a follow up on my progress and encouragement when I seemed to hit a dead end, I dedicate this project to you. Dearest Mom, I know your prayers have brought me this far. This too, is for you.

ACKNOWLEDGEMENTS

Words cannot adequately express my gratitude to God Almighty for holding my hand every single step of the way. Without Him, I would not have come this far.

My deepest gratitude also goes to you, my dearest husband, Kennedy Kilonzo, for your financial, spiritual and moral support. You always had my back and encouraged me and even went out of your way to help me with the little ones especially when I had to leave home early and come late.

My supervisor Dr. Joyce Wangia, I am greatly indebted to you for your painstaking guidance, thought provoking insight and patience. Without you, this endeavor would not have been possible. Daktari, receive my sincere gratitude.

I would also like to most sincerely thank all the lecturers I interacted with in the course of my study. You not only imparted knowledge to me, but you were also a great blessing and inspiration to me and this has left a lasting impression in my life. I consider myself privileged to have interacted with these great minds.

Special thanks to my family and friends, thank you for always giving me a shoulder to lean on when I needed one. God bless you all.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

GT: Google Translate

HT: Human Translation

MT: Machine Translation

SL: Source Language

ST: Source Text

TL: Target Language

TT: Target Text

HT: Human Translator

OPERATIONAL DEFINITION OF TERMS

Machine Translation: The process of converting a text or message instantly from one language to a different one by using artificial intelligence.

Source Language: A language which is supposed to be converted or translated to another different language. In this case both English and Kiswahili will be the source language.

Source Text: The original text from which a translation is done into another language.

Target Audience: The people who will read and use a translation.

Target Language: The language which the text to be written will be transformed into. Again, both English and Kiswahili will be target languages.

Target Text: The text a translator produces from source text. It is what is produced after a translation.

Translation: The transposition of meaning from one language to another, whether the text is literary or non-literary.

Human translation: A translation that is done manually by human beings.

Human translator: A person who translates a text by the use of their brain power.

Translation error: Any lack of congruence between a source text and a target text.

Lexical error: Wrong word choice errors

Pragmatic error: Errors resulting from insufficient knowledge of

context and culture of a language.

Grammatical error: A contradiction the rules of grammar that govern a language.

ABSTRACT

This study sought compare human and Google Translate (GT) translations of newspaper headlines. This comparison was with the intention of determining whether or not there were any mismatches between data translated by the human translator and GT. Both Kiswahili and English newspaper headlines were used. The mismatches identified were instrumental in classifying these errors according to their type and also ascertain the extent to which translations on Google Translate are accurate. Machine Translation (MT) is a field that has generated much interest and especially in this age of heightened technological advancement. The advent of internet and globalization has seen a spike in the demand of translation services, something that the human translator cannot possibly handle. Even so, research has proven the machine may not offer quality translations the way a human translator can because unlike the human, it may not take into consideration the context surrounding the translation as well as the cultural nuances of the source text. Both the Relevance and Skopos theories were applied. The research used both qualitative and quantitative research methodology and a descriptive research design. Simple random sampling was used to select the data to be translated while Purposive sampling was used when choosing the human translators. Fifty data sets were tested, 25 of which were in Kiswahili while 25 were in English. Content analysis was thereafter applied to interpret the translation output. The study found that there were some instances in which GT differed with the human translator. In addition, some human translations were found to slightly differ from Google translations in the wording but still had the same meaning. The study focused on the communicativeness of the translated data and found that some of the items considered exhibited meaning losses. The study identified three types of translation errors and categorized into: lexical, pragmatic and grammatical errors. The study further found that overall, GT was able to accurately convey the meaning of 31/50 (62.0%) data examined, implying that GT is 62% accurate in translating Kiswahili to English and vice versa. The study concludes that there are a number of errors related to English/Kiswahili translations and these translation errors not only change the particular meaning of Source Text (ST) but also the central purpose of the ST is not conveyed and therefore miscommunication occurs.

CHAPTER ONE

1.0 Introduction

This first chapter offers the background to the research. It also states the problem of the research. Additionally, research questions and the research objectives that guided the entire research process are outlined. Later, the chapter presents a justification and significance for undertaking the research. In the end, the chapter provides the research scope and states the limitations faced during the process.

1.1 Background to the Study

Translation entails a challenging undertaking involving changing a text from one language (source language) to another (target language) by a translator (Munday, 2016). It is the responsibility of the translator to accurately deliver the meaning of the SL as well as the cultural nuances to the TL. This means that the translator must not only be competent in both languages and conversant with their culture, but also be able to correctly render ideas from SL to TL. When this does not happen, then translation errors occur.

Language is an essential communication tool for it is a representation of the ideas we have in our minds. With over 7000 living languages in existence in the world (https://www.ethnologue.com.), it may not be easy for an individual to know or understand all the languages of the world. For this reason, translation was adopted to enable communication of messages and sharing ideas among language users.

Translation entails a complex process involving high level cognition and linguistic capabilities. An individual responsible of translating ought to be at ease with the two primary languages involved. The person should also have skills and knowledge to

restructure a primary language in a particular target language which does not have an exact wording as well as structure (Poibeau, 2017). If this does not happen, then inconsistencies that emanate from the source language (SL) and target language (TL) occur. Wangia (2008) argues that, if the translator is armed with the necessary skills and knowledge, they are likely to develop a superior product as lexical knowledge is solely insufficient. Furthermore, she contends that like the wiring connections of the most powerful machine, the complexities of language constitute intricate details that have a notable significance during translation.

Languages have features that make them different from each other (Nida & Taber, 1982). As a result, information may be lost or inaccurately transmitted when transferring ideas from one language to another. Thus, it may not be possible for the target audience to receive a message in exactly the same way as the original audience. Although for a translation to be considered effective there should be some degree of equivalence, some non-equivalence may still occur. This is what brings errors in translation.

There are two possible ways of translating: humans and machines. Human translation makes use of professional human translators to render meaning from one language to another. Machine Translation on the other hand is translation of a text, speech or images by a machine. The machine uses artificial intelligence (AI) to translate ST to TT automatically without the intervention of human beings (Poibeau, 2017). Machine translation engines include Google Translate, Bing Translate, Microsoft Translator, Yandex among many others.

While a machine is fast and less expensive, chances are high that it could miss out on some details in the process. Translation requires two types of knowledge: grammatical

and extra-linguistic (Baker & Saldanha, 2009). Machines may encounter linguistic problems or fail to have real-world knowledge. As a result, there could arise mismatches in the rendering of meaning between the particular target language as well as the source language.

A perfect example is a GT translation of "*He read her a **boring** story*". It is translated to Kiswahili as "*Alimsomea hadithi ya **kuchosha***" (He/she read him/her a **tiring** story) (Wamitila & Kyallo, 2002). Here two major issues arise. The first is that because Kiswahili does not have gender marking in pronouns, it is not possible to accurately render *'he'* and '*her*'. In addition, the word *'boring'* has been translated to '*kuchosha*', which in English is '*tiring*' and so it has not been correctly rendered. The closest equivalent in Kiswahili is '*isiyofurahisha*' ***(not interesting***) or '*isiyochangamsha*' ***(not lively)***. This study therefore, compares GT translations and human translations to be able to identify errors that GT is likely to make. Four professional human translators were used while Kiswahili and English languages were used.

Data was drawn from headlines in two local dailies, the Daily Nation and its Kiswahili counterpart Taifa Leo. These two are publications from the Nation Media Group, which is the largest independent media house in East and Central Africa. It has involvements in print, digital media and broadcasting with a wide readership and viewership in Kenya, Tanzania, Uganda and Rwanda (www.nationmedia.com).

1.1.1 Google Translate

Google Translate is a translation tool that was introduced by Google Corporation in 2006. It uses predictive algorithms to guess how a text can be translated into a foreign language. GT translates sentences, documents, websites, speech and even images. It aims at translating whole phrases as opposed to single words then gathers overlapping

phrases for translation. As of March 2023, GT was able to translate 133 languages at various levels and a total of 100 billion words daily (https://translate.google.com/). It first translates a source language to English and later into the target language. When a text is submitted online, GT goes through its database and produces what it considers as the best estimate of the Target Language.

When first launched, GT greatly relied on online statistics. This means that it would scan the entire internet database in order to locate the available human translated documents in the given language and then select the most frequently used version of any expression. Since it was looking for the corresponding words or phrases, it worked perfectly for short sentences or phrases. However, when one tried translating a longer text with complete grammar, then there would be a problem because when the context and sentence structure came into the picture, GT could not construct meaningful sentences.

Initially, GT used Statistical Machine Translation. This is a rule-based method of translation that uses predictive algorithms to make guesses of foreign texts in translation (https://translate.google.com/). It translates entire phrases instead of single words after which it gathers similar phrases used for translation. Additionally, it examines bilingual texts corpora to create statistical models that translate texts from a particular language to a different one.

In September 2016, an innovative system of translation called Google Neural Machine Translation (GNMT) was developed by the Google research team (Robertson, 2019). This increased fluency and accuracy in GT. GNMT utilizes a broad end to end artificial neural network which performs deep learning particularly in short-term memory networks (https://translate.google.com/). According to Google researchers, the system

translates complete sentences at a time instead of piece by piece. Moreover, it utilizes a broader context to figure out the most relevant translation. Thereafter, it adjusts the text like a human speaking while adhering to proper grammar. It encodes the semantics of a particular sentence instead of merely memorizing phrase-to-phrase translations. It is argued that with time, GT learns to develop better and leveraged natural translations. This then implies that GNMT offers better quality translations than its predecessor. It is prudent to note that the data herein, which was translated in 2022, may to some extent differ with a current translation.

GT was then evidenced to be powerful though it has a significant variation in terms of accuracy concerning the individual languages and this may be as a result of lack of broad and qualified parallel corpora.

A lot of research has been done on MT using numerous languages, including English and Kiswahili which are being studied in this research. An example is a study done by Kathuke (2019). He studied translation errors in crowdsourced translations in Kiswahili on Facebook. However, as far as the researcher in this particular study is concerned, no research has been done to compare Google Translate translations with human translation using English and Kiswahili. This research therefore aims to bridge this gap and give some insight in that respect. Data was fed to Google Translate for translation and then the output was compared to human translations. Four professional human translators were used. Errors in Google Translate as a machine translation engine were identified and thereafter, they were categorized according to their type. This is what was used to determine the accuracy of GT.

This research aimed at comparing GT and human translations, and not the techniques that GT uses during the translation. Thus, it seeks to unearth emerging challenges that

must be addressed for optimum results because with the heightened technology, there is a projected likelihood of MT replacing the human translator in numerous ways.

1.2 Statement of the Problem

Globalization and the widespread use of the internet, especially in the last two decades, have brought about a significant amount of content that needs to be translated. The human translator may not be able to address this need, especially in terms of speed and cost. Machines are thus used to complement the human translator. However, a machine may not always translate accurately since research has shown that errors in machines sometimes occur. The machine may not apply extra-linguistic knowledge and may make some errors of grammar. It may not understand the cultural nuances presented in a certain text (Poibeau, 2017). As a result, mistranslations sometimes occur and this may lead to miscommunication with drastic consequences. This not only compromises the quality but also the credibility of a translation. This study aimed at studying Kiswahili and English translations on Google Translate and comparing them with human translations. This was with the intention of determining whether or not there were mismatches between the human and GT translations. The mismatches witnessed were categorized according to their typology and then used to determine the accuracy of GT as a machine translation engine.

1.3 Objectives of the Study

This study sought to:

1. Identify erroneously translated items in English – Kiswahili and vice versa on Google Translate.
2. Categorize the translation errors identified according to their typology.

3. Determine the accuracy of Google Translate translations against their human translated versions

1.4 Research Questions

The study was founded on the following research questions:

1. Which items are erroneously translated when English or Kiswahili data is fed on Google Translate?
2. How can the errors be classified according to their typology?
3. To what extent are translations on GT accurate when measured against their human-translated equivalents?

1.5 Research Assumptions

In this research, these assumptions were made:

1. When translations are done on Google Translate, some translation errors occur.
2. The errors that occur on GT can be categorized according to their types.
3. The accuracy of GT translation can be measured against their human-translated equivalents.

1.6 Justification and Significance of the Study

The ever-increasing need for translation services by the commercial community has grown substantially in the last decade. This has been fueled by socioeconomic changes such as industry globalization, digital improvements such as the massive use of the internet, the increase of digital businesses and growth in the application of online documents (Munday, 2016). At the same time, stakeholders who perform the translations are obligated to use high standardized translations within limited periods. Though the quality of human translators is superior to that of machines according to

various studies that have been done, humans cannot do as much work or work with the same speed as machines. It is therefore imperative to seek ways of producing quality translations within a shorter turnaround time and at a lower cost. Thus, this research aimed at identifying and analyzing linguistic errors that are encountered during such translations so that recommendations could be made to experts to improve the accuracy and reliability of Machine Translation. Moreover, because of its speed and ability to handle huge chunks of information, MT can be used to complement human translations (Robertson, 2019). With the recent technological developments, in future, MT might replace the human translator in many instances and so this study seeks to unearth emerging challenges that must be addressed for optimum results. Further, the findings of this study could offer great insight to translators when making decisions on whether to use humans or machines for translation. GT was preferred because it is widely used worldwide and is also easily accessible because one can use it even on a smart phone. Finally, this study will contribute to research that has already been done on translation and further enrich it.

1.7 Scope and Limitations

There are many languages world over which can be translated by the use of machines. There are also a variety of MT engines such as Systran, Bing, GT, Babylon etc. This study confined itself to Kiswahili and English languages and Google Translate as a translation engine. The two languages were selected because many European languages have been studied and so there was need to explore an African language. However, most African languages, and especially the minority ones, do not have adequate representation on GT database. GT can translate only about 30 African languages, some of which include Kiswahili, Hausa, Igbo, Yoruba, Kinyarwanda, Somali and Zulu (

https://translate.google.com/) . Among the African languages available on GT, the researcher is proficient written and spoken Kiswahili only, thus it was selected. Four human translators were used to translate the same data translated on GT. The researcher purposively selected four professional human translators with experience in translating both English and Kiswahili. The study identified and categorized errors as follows: lexical errors, grammatical and pragmatic errors.

1.8 Chapter Summary

In this chapter, the background to the study has been presented and the research problem stated. Objectives, research questions and research assumptions have also been highlighted. Lastly, the chapter has outlined the justification, significance and the scope and the limitations of the study. The next chapter handles the literature review as well as the theoretical framework that was adopted in the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

In this chapter, an appraisal of related literature is done. A review of translation in general comes first, a review of machine translation follows and later, a review translation errors. Finally, the theoretical framework applied in this study is presented.

2.1 Literature Review

In the sections that follow, translation, machine translation, current literature on translation and translation errors are discussed.

2.1.1 Definitions of Translation

Roman Jakobson, a prominent linguist and an expert in the field of translation, defines translation as the interpretation of verbal signs using some other language (Jakobson, 1959). Thus, a text in one language is transformed into a text in another language with the same meaning.

Catford (1965) describes translation as a critical procedure of transitioning meaning or sense from a particular language (source language) to another language (target language). He further asserts that translation involves an operation undertaken on a language that involves replicating a text or transcript in a particular language for a writing in a different language. Another definition he gives is the replacing of additional textual material in a particular source language (SL) by a corresponding text material in alternative target language (TL) and so for him, translation is basically concerned with written material. This definition is relevant to this study since it makes it concerns translation of written texts.

.

Brislin (1976) claims that the translation process is a term that refers to the transference of opinions as well as thoughts from a particular language to another different language whether both are in printed or in a verbal format. Bell (1991) defines translation as an expression in a different language of an aspect that had been expressed using another language while preserving semantic and linguistic equivalences. Translation is also said to be an interpretation of an SL transcript to the intended TL in order to ensure that the target superficial meaning and sense of both languages remain similar. Also, the expected structure and arrangement of the SL need to be preserved as much as possible, but not so profoundly to the extent that the structure and arrangement of the TL may be seriously distorted.

Translation is an interpretive process and it greatly depends on the nature of the document. For instance, technical translation is easier and demands less skill than translating a literary text. In addition to being competent in both SL and TL, a good translator should have an aptitude for writing in the target language and be conversant with the socio-cultural context on which a text is set. The translator ought to then take the lexicon, cultural context and grammatical structure into account to be able to understand the meaning and transfer it to the TL while ensuring minimum or no loss of meaning. This particular study has borrowed heavily from this definition because the major objective is to determine whether or not there is meaning loss.

When translating, it is imperative to pay attention to accuracy, clarity and naturalness of the messages from the translation. This means that the target audience should receive the message in exactly the same way the source audience received it (Newmark, 1988, p5).

Newmark (1981) notes that translation is the art of replacing a written message or statement from one language by the same message or statement in another language. If the ST outlines a situation that has elements unique to the natural sphere, environment as well as culture, there is unavoidable loss or harm on meaning. This implies that in translation, the message is more important than the words used to communicate it. If the original message is not accurately transferred to the SL, then translation errors occur. As per this definition, the current study deals with the communicativeness of the translated data.

Translation is also referred to as a transfer process that aims at transforming a written SL text to an optimally corresponding TL text that requires syntactic, semantic and pragmatic understanding as well as analytical processing of the SL. Newmark (1988) elucidates that translation of text entails replacing the message of SL by a semantically as well as pragmatically corresponding text as contained in the TL. Text translation is an action that demands considerable cultural literacy. Figurative language presents a problem because the effect in the SL may not be produced in the TL. This is the same challenge experienced in this study because GT faced difficulties when translating figurative language.

Basnett (2011) argues that text translation is the transmission of sense and meaning covered in one specified set of language through competent utilization of dictionary. It also entails the procedure involving a whole set of extralinguistic criteria. Good and substantial translations ought to be accurate, precise, natural and communicative. These factors mentioned above were used in this study to determine whether a translation was rendered correctly or not.

Translation is not only dependent on replacing words from one language to gain meaning in a different language. It constitutes transmitting the meaning or the particular idea which the translator wants to convey (Cuc, 2018).

Translation can also be said to be the act of rendering meaning of the content in a text or utterance from one language to another, while retaining the message in the original text. The word 'translation' ('translatio' in Latin) means to carry over or bring across which designates a transfer (Munday, 2016). As such, the words and structure of the SL may not be given much importance but the central idea (meaning) must be reproduced in the receptor language (Hatim and Munday 2004, p6). The emphasis here is on rendering the exact meaning of the source text as what was intended by its primary author. In a case where there is more than one equivalent, only the closest in the receptor language vocabulary and structure and the most natural is selected. There must also be some degree of equivalence in that the term used in the receptor language must exist in that language. The meaning of words in isolation is not very significant but what a word means in a given context is central. The major focus of a translator should then be reproducing meaning of the ST. This then means that style is of a secondary importance. This is the definition that was majorly applied in this study.

From the foregoing, we can rightly state that translation is a process that aims at filtering meaning equivalence in the target text. Hence, language which is used as a unit of meaning in a discourse that must be clearly comprehended by the participants of communication.

2.1.2 Machine Translation

The internet has facilitated effective access to information by all individuals from various parts of the globe. Webpages contain information that can be presented in

varied languages that can be translated. On account of this increasing demand for translation, the complexities of the process of translation and the absence of adequate competent translators, scientists and linguists have collaborated to automate translation to help the human translator by means of specially designed software programmes with inbuilt mechanisms for substituting the structures of SL to TL (Poibeau, 2017). The widespread use of internet globally has enhanced the role of translation in modern times and facilitated the use of MT in a big way.

Machine Translation, a subfield of Artificial Intelligence (AI), is the application of computers to the task of translating one natural language to another. The MT system performs an analysis of the source language input after which it prepares a meaningful internal representation. The representation is then transferred in a suitable form that is appropriate for the target language.

The idea of MT traces back to the 17th century. In 1969, Rene Descartes suggested a universal language with the same ideas in different tongues sharing one symbol. The field of MT appeared in Warren Weaver's Memorandum on Translation (1949). The first researcher in the field, Yehoshua Bar-Hillel, began his research in 1951 with a public demonstration of its system in 1954.

The overall quality achievable by MT has been a matter of much debate (Poibeau, 2017). However, it is improving fast. While fluency improves, translation errors still occur. This is because translation involves a multifaceted cognitive process. To decipher meaning of the ST in its wholeness, it is imperative for the translator to examine all the features and the attributes of a text. This process needs an exhaustive understanding of grammar, syntax, semantics and even idioms of the SL and its culture. Here then lies the challenge of MT. It may prove quite a challenge to program and

design an electronic device to comprehend a text in the exact way a human being does and also generate a new text in TL so that it appears and sounds as natural as the one translated by a human.

Natural languages are complex in nature. Each language possesses features that make it different from other languages. These features may be morphological, syntactic, discourse markers to mention but a few. Again, each language may have extensive vocabulary in various areas and fields. Consequently, the target audience may not receive the message in exactly the same way as the source audience. As a result, translating one language to another may bring about non-equivalence between the two languages as there is no perfect match between the two (Robertson, 2019). It is this non-equivalence that brings about translation errors.

Some words have various denotations. Sentences may contain multiple readings, for example, *visiting relatives can be boring*. This sentence has two possible meanings: *the act of visiting relatives can be boring* or *those relatives who come visiting can be boring*. Words may also have particular grammatical interconnections in one language which may not occur in another. What it can do is to provide a general though more often than not, an imperfect approximation of the original text. Due to such complexity of the natural languages, the MT becomes a challenging task.

2.1.3 Local studies on translation

Gimode (2006) conducted a research on mistranslations in English-Kiswahili church sermons. She does an in-depth investigation about the causes of these mistranslations and goes further to discuss the categories prone to mistranslations. She cites that translation errors occur because of lack of equivalents in some words owing to their nature and multiple meanings. Gimode's research and this study have a lot in common

because they address mistranslations in both English and Kiswahili, and the current study borrows heavily from Gimode's with respect to categorization of errors. This study, however, introduces an aspect of machine translation and compares it with the human translator to determine the accuracy of the machine while Gimode's study deals with human translators only.

Wangia (2003) studies mistranslations in the Luloogoli Bible. The mistranslations are categorized into syntactic, ambiguity or obscurity, loan words or lexical, conceptual and cultural. She also asserts that one needs to pay attention to linguistic aspects of the language, structure of the TL and the message of the ST for the translation to be effective. This particular study borrowed from Wangia's in classifying the errors identified.

Kemari (2012) conducted a study to determine the translation ability of Kiswahili undergraduate students. He examined the extent to which the students were able to produce accurate renderings of some facts and ideas from ST to TL and also looked at the problems encountered by these students. Kemari contends that understanding the ST is very important as it enables one to render the message as precisely as possible. However, this may not always be the case because sometimes, the translator may experience challenges in understanding the grammar and lexicon of the ST. Translating jargon, for instance, may prove an uphill task. His study and the current one are similar because they investigate translation errors in both English and Kiswahili. The current study however not only investigates these errors in Machine Translation and compares them to human translations, it also categorizes them.

Another study was conducted by Odinga (2016) who did an analysis of Kiswahili-English translation of sampled pesticides instruction leaflets. The study endeavored to

identify and classify the mismatches identified in translation of these leaflets in order to examine the interpretation of the TT by the target audience and thus determine the effects of these mistranslations in small scale horticultural farmers. These two studies are similar in that they not only use the same languages to study these mistranslations, but they also identify and categorize these errors. The study concludes that some of the target audience miss out on the intended message due to mistranslations or lack of competence in English.

Kandie (2010) conducted a study on translation of neologisms in Kalenjin radio broadcasters and notes that neologisms without translation equivalents are encountered during broadcasting and so broadcasters have to act as cultural bridges across the Western and Kalenjin speakers' culture. This study is relevant to the current one because they both deal with translation issues and they use the Relevance Theory, but the current one compares human and machine translations.

Onsario (2009) investigates the challenges encountered when translating English hymns into Ekegusii. He noted that challenges were experienced when translating imagery, loan words and longer strings of language. His study and the current one are similar as they highlight errors encountered during translation, but the current one focuses on translation errors only.

Nyakundi (2010) defines various forms and arrangements of a figurative language from the book of proverbs as covered in the Ekegusii bible. He concludes that there are differences in meaning between ST and TT because of the literal translation of the figurative language, using inappropriate words, vagueness as well as omission of essential objects contained in the figurative language. This study is related to the current one as they both deal with inconsistencies realized during translation. However, the two

differ in the theories used and the current study does not limit itself to figurative language.

Another study was done by Orago (2007) on meaning loss in literal translation. He cites that meaning loss in the structural errors category occur due to the translator's attempt to match words in a particular word class in Dholuo with the words that belong to the same word class in English and which can sometimes have other meanings thus making the translation syntactically wrong. Though this study and the current one are on errors in translation, this particular study does not use literal translation.

Finally, a study by Kathuke (2019) looked at errors in crowdsourced translations on Facebook. He broadly categorized these errors into three: accuracy, grammar and stylistic errors. He further discussed the translation strategies applied during the translations which resulted to some of the errors identified. That study is similar to this as they both study machine translation and the languages used are English and Kiswahili. The errors are also classified in both studies. However, Kathuke limits his study to Facebook while this study limits itself to Google Translate.

2.1.4 Translation errors

It has been often argued that it is not possible for the target audience to receive a message in exactly the same way as the source audience. This is because the historical setting and the culture may be quite different (Olk, 2003). Though for a translation to be effective there needs to be a high degree of equivalence, owing to the afore mentioned reasons, errors still occur.

The word 'error' originates from a Latin word 'errare' that means 'to wander, stray or roam' (Lennon, 1991). The meaning of error is dependent on the context and purpose,

as each word has a different meaning depending on where it is placed. Many times, an error is confused with a mistake. Even though sometimes these two terms are used interchangeably, they do not refer to one and the same thing in the linguistic context.

An error can simply be said to be something that is wrong. It is the production of incorrect forms in speech and in writing by a non-native speaker of the SL due to incomplete knowledge of the rules of that language (Lennon, 1991). This does not only change the meaning of the ST but also the purpose of the translation is not accurately delivered so the target audience may end up misunderstanding the intended meaning. Mistakes on the other hand are generally considered as faults in performance and they do not occur systematically (Pym, 1992). They are typically referred to as defects in executing an unplanned task.

Chomsky (1965) established a distinction between competence and performance that later led to identification of errors and mistakes. Competence, he asserted, is the speaker-hearer's knowhow or knowledge of his particular language while performance is the definite use or application of a language in well-defined circumstances. Errors are perceived to be hints of partial learning whereby the speaker or hearer may not have accrued a satisfactory language knowledge that can help them evade linguistic misappropriation. The competence of a speaker is judged by the errors that relate to the amount of linguistic data they have accessed. Nevertheless, performance does not represent the language knowledge that a speaker has. Thus, mistakes arise due to performance while errors are as a result of lack of competence.

Errors in translation are often as a result of the existence of some non-equivalent linguistic elements between source language and target language (Baker, 1992). Consequently, the more and the bigger the differences between two languages, the more

translation errors occur. In this study, errors were identified depending on the differences in meanings realized between the ST and TT.

Pym (1992) categorizes translation errors into two: binary errors and non-binary errors. While binary errors are described as errors on grammar (they entail incorrect translations), non-binary errors are based on pragmatics (taking the context into consideration). Non-binary errors result to ambiguity in a translated text. Thus, a translator must understand the different contextual meanings of terminologies before they are used in the TT translation. Non-binary errors may not actually be errors but different interpretations of the same text. A binary error on the other hand is simply a wrong. Thus, binary errors were used to categorize grammatical errors in this research while non-binary errors were used to classify pragmatic errors.

A translation error is a linguistic aspect or a combination of several forms that under a similar context, conditions and situations of production, is not outsourced from the native counterparts of the speaker (Lennon, 1991). Errors reflect a gap in one's knowledge and they are systematic. The gaps arise due to misunderstanding the ST or the incapability of the translator in producing TT.

A translation error can be said to be any lack of congruence between the source text and the target text. This includes inconsistencies in meaning and failure to use the target language according to standard norms (Goff-Kfouri, 2004). Translation errors can be caused by misunderstanding of the translation brief or the content of the ST. This is brought about by failure to rendering the meaning of ST accurately, through making factual mistakes and terminological or stylistic flaws and by different kinds of interferences between ST and TT. Interferences are projections of unwanted features from one language to the other and from ST to TT. They occur because of an

assumption of symmetry between the languages and/or cultures. Several levels of description are affected. Interferences can be characterized as cultural, pragmatic, text-linguistic, semantic, syntactic or stylistic errors.

As aforementioned, errors in translation mostly result from mismatches between the SL and TL (Baker, 1992) and as Basnett (2011) puts it, theorists of translation have long acknowledged the difficulty of achieving total equivalence between languages and ensuring that what carries a certain meaning in one context will have the same meaning in another. There is hardly any perfect translation.

Translation errors emanate from multiple sources such as a lack of understanding or misuse of words (Hatim & Munday, 2004). They entail the construction of unfitting arrangements in speech as well as writing by a speaker who is a non-native of the TL because of the incomplete literacy of the rules of that TL. These errors may be linguistic, stylistic and even cultural. A translation error not only changes the key meaning and sense of the ST but also the central concept and purpose pertaining to the ST will not be produced and therefore miscommunication occurs. Since translation encompasses the transfer process of meaning from a SL to a TL, this must be done in the best manner possible in order to convey meaning as accurately as possible (Munday, 2007, 2016). If this does not happen, translation errors occur and these lead to miscommunication.

Larson (1984) asserts that in translation, a translator should not only understand the lexicon and grammar, they must also know the communication situation and also the cultural context of both languages. This helps in analyzing the meaning in ST and rearrangement of the similar meaning, utilizing lexicon as well as grammatical structures that are appropriate in the TL and its particular cultural context. Even when

this happens, there are still difficulties in doing translation. Some of these difficulties are the fact that translation experience challenges in meaning components (lexical items) as well as similar meaning occurring in multiple forms. This implies that one form represents numerous meanings and one meaning represents multiple forms.

Wangia (2003) asserts that every language has its own ways of expressing ideas, values and beliefs and these reflect the cultural aspects of the context community. A translator requires skills to render these norms from the SL to the TL in such a way that the target audience is able to correctly interpret the original meaning. If then the translator is unable to do this, erroneous information is conveyed.

The major challenge in the process of translation is the meaning which will occur in the process and not translation as a product. Hatim and Munday (2004) suggest that the main problem in translation is determining whether the source meaning has been accurately transferred to the TT. Thus, whether or not the meaning has been accurately rendered in both languages is what greatly matters. This is what this study focuses on, in order to identify the mismatches and categorize them.

Language is central in the transfer of meaning. The rules of one language may differ from those of another. A translator has to understand a ST and then convert it to another language, while preserving the meaning, the style and the primary purpose of the ST. Such an aspect requires extensive proficiency in both languages as well as specialized cultural knowledge. It is the duty and mandate of a translator to choose how to best render the meaning.

Nida and Taber (1982) assert that translation should be focused on the response of the target audience and it should be viewed in comparison to the action of the original audience when it was delivered in its original setting. Translation is aimed at ensuring

that the target audience is very unlikely to misunderstand the message. When the better part of a target audience misunderstands a translation, then it cannot be said to be a legitimate translation as it violates the intended meaning. The focus of a translation should therefore be on the response of the receptor (target audience). This response must be comparable with the response elicited by the audience when it was given in its original setting.

Translation entails a sophisticated process. The translators decode a particular vocabulary or noted sentence and pay close attention to central context related to such. Translation errors may be as a result of a misunderstanding of such a translation's outcome that fails to correctly translate the key meaning to ensure translated text is effectively modeled and not structured contextually. It occurs because of incorrect word choices within a text.

Translation is a challenging task as it involves a blend between skill and art. A translator ought to have adequate knowhow regarding the critical aspects from both TL as well as SL. Nevertheless, many difficulties are still encountered during translation and these lead translators to make translation errors. A translation error can be defined as the construction of inaccurate forms during speech as well as writing by a non-native speaker of the particular target language resulting from unreliable knowledge detailing the rules that reinforce the target language (Cuc, 2018). There are various types of translation errors but this study broadly groups them into: grammatical, lexical and pragmatic.

A grammatical error happens when a translated sentence contradicts the grammatical rules that govern the target language. They entail a disconnection between a subject and a verb, inappropriate verb inflections as well as improper declension of pronouns, nouns

and adjectives. This happens because different languages have different grammar and syntax. Pragmatic errors, on the other hand, mostly occur as a result of insufficient knowledge of context and culture of the TL. This means that a ST may have several meanings, each determined by the context surrounding its use. Thus, although all meanings are correct, if not used in the right context, they may be deemed wrong. Lastly, we have lexical errors. These happen when a lexical item utilized in a sentence fails to suit or collocate with another different part of the sentence resulting to items that sound unnatural or unfitting. Lexical errors are realized when a translator is unable to transfer meanings of words and word collocations intended in a source language to the ones that are equivalent in the source language.

2.2 Theoretical Framework

2.2.1 Introduction

A theory is a set of hypotheses that show the relationship between a set of variables. They are used to explain phenomena, draw conclusions and make predictions (Kothari, 2003). There are several translation theories, some of which include: Skopos Theory, Linguistic Theory, Interpretive Theory, to mention but a few. In this study, both Relevance and Skopos Theories were preferred over the rest. This was with the intention to determining whether the meaning and purpose were communicated from the ST to the TT. Each theory is discussed below.

2.2.2 Relevance Theory

This theory was first developed by Sperber and Wilson in 1986. It was initially inspired by the works of Paul Grice. With time, it has become a pragmatic framework that stands

on its own. Theorists believe that human communication and information transfer is typically intention-based. In this case, humans not only see verbal comprehension as a way of decoding speech signals, but also an aspect that entails the recognition of the speaker's intentions.

The Relevance Theory aims at explaining the fact that communicators always disseminate more information from their projections and utterances more than what is confined in the literal sense. Sperber and Wilson claimed that the elements of human verbal communication are ostensive as they recollect their addressee's intention based on the fact that the communicator intends to transfer some informative details. In this way, they inevitably assert that they are relevant to their target addressees (https://doi.org/10.1093/acrefore/9780199384655.013.201). This is termed as 'ostensive-inferential communication' to reflect the fact that communicators communicate openly, showing their intention to communicate and that audiences make inferences about the intentions of the communicators. A relevant utterance based on such a technical sense can be said to be one from which multiple conclusions can be made while the addressee incurs a low processing cost. The addressees utilize the information carried in the utterance collectively with their expectations regarding the relevance, real world competence and the sensory input, to gather conclusions concerning what was intended by the communicator.

The theory operates on the principle that every utterance conveys information that is relevant enough for it to be worth the effort of the addressee to process it. This theory relies heavily on inference. Inferences which are intended by the primary communicator are categorized as explicatures and implicatures. The explicature of an utterance entails

what is overtly said, often supplemented by contextual information. Implicatures are conveyed without actually stating them.

This theory was further advanced by Ernst Gutt (1989) who views translation as a special form of communication involving three participants: the author, the translator and the TL text reader. The duty of a translator is to ensure there is a match between the source language communicator's intentions with that of the TT readers' expectation.

The theory was based on the writings of Paul Grice on Cooperative Principle. Grice noted that for communication to take place successfully, both the sender and recipient have to be conscious of a set of maxims that he referred to as the cooperative principle which states: ***make your conversational contribution such as is required, at the stage which it occurs by the accepted purpose and direction of the talk exchange in which you are engaged***. The four maxims are: the maxim of quality (say only what you believe is true), maxim of relation (be relevant), maxim of quantity (say as much as is required) and maxim of manner (be orderly and avoid ambiguity).

Since conversational partners understand these maxims and the cooperative principle governs conversations, they will not provide information that does not conform to the principle. This ensures that the recipient can choose from among potentially multiple interpretations, the one that delivers the message that the sender most likely intended. This proves particularly helpful in interpretation of figurative expressions as well as non-literal communication.

In 1987, Sperber and Wilson applied Grice's idea to propose the Relevance Theory which views communication from a cognitive point of view. They assert that every act of communication assumes the message is relevant for both the sender and the recipient. Consequently, when a recipient receives a message, he/she should have the capacity,

with minimum effort, to choose from a variety of possible interpretations that he/she believes was considered most relevant by the sender. Gutt (1989) suggests that translation is just another act of communication (secondary communication) which is based on the interpretive use of language. Inference has to take place on the basis of common knowledge and understanding between the sender and recipient and this is based on the context and the speaker's intention to share the message.

This theory approaches communication from the point of view of competence as opposed to behavior. It tries to give a clear account of how our minds enable us to communicate with one another (Gutt,1989). The Relevance Theory thrives on inference. This can be defined as the interpretation acquired by a receiver of utterances sourced from the sender (Sperber & Wilson, 1986). Communication is made possible by common shared beliefs by the speakers. These beliefs govern our norms and expectations and on the basis of this we are able to arrive at new true beliefs.

According to Sperber and Wilson, the communication process flourishes based on the principle of relevance. For instance, a proposition contains optimal relevance when the receiver can contemplate and interpret it at minimal processing cost in relation to the prevailing contextual effects. Gutt asserts that the Relevance Theory is a tool for meaning analysis. According to him, problems in translation arise from inconsistencies related to the principle of relevance. On the same note, the success of a translation can be judged according to how its contextual effects are and whether the target audience is able to access it at minimal processing cost.

Relevance is said to be a property of inputs (assumptions and thoughts utterances) that aid in cognitive processes. In this study, the Relevance Theory was used as a benchmark to ascertain whether the translations on GT meet the threshold of what can be

considered an accurate translation in relation to the human translations. Therefore, the GT translations were examined using the human translations and the researcher's intuition to determine whether it is relevant and communicative. If the SL meanings is not reflected on the GT translations, then the translation was considered erroneous.

2.2.3 Skopos Theory

Skopos Theory is based on the principle of purpose of the translation. It was pioneered by Hans Vermeer in 1978. "Skopos" is a Greek word which means aim, target and purpose. Translation is therefore an 'offer of information' which translators choose the items they regard interesting, useful or according to the desired purpose such as to instruct, persuade or entertain (Nord, 1997). The TT is approached with a purpose and all linguistic choices are made because of the effect that one intends to achieve. Traditionally, the ST was believed to be the only way to judge a translation. However, the Skopos Theory tells us whether or not the ST and TT achieve the same purpose.

According to the proponents of the Skopos Theory, all texts are perceived as serving a specific purpose, therefore, the translator should translate in a way which enables the text to function in the situation in which it is to be used and with the people who want to use it and in the way they want it to function (Nord 1997). Each utterance is an expression of the cognitive state and the intentions of the speaker. This theory underscores the importance of contextual factors associated with the translation with the process such as the culture of the target audience, initiator of the of the translation and the new intended function of the ST in the target culture (Vermeer, 2000). This means that the same ST can be translated in different ways using different translation strategies and techniques to fulfil depending on the skopos.

According to Munday (2001) and Reiss & Vermeer (1984), there are six underlying rules that govern the Skopos Theory as discussed below. The first rule is called the Skopos rule which states: a translation action is determined by its skopos, that is, the end justifies the means (Reiss & Vermeer 1984). This means that the skopos (the purpose of the target text) is the most important factor in determining the appropriate translation strategies and the procedures that the translator can use to adequately fulfil the set purpose. This implies that the message is more important than the format.

The second rule states that, the TT is an offer of information in a target culture and a TL and relates to an offer of information in a source culture and SL. Rule three regards the fact that a translation does not initiate an offer of information in a clearly reversible way. This means that the TT can have a new function that differs from that of an ST therefore, a back translation of the new TT could yield to a translated text that is different from the original text.

The TT must be internally coherent. The target audience must be able to understand the TT which has to be meaningful in the communicative situation and the target culture. This is also called intratextual coherence rule.

The TT must be coherent with the with ST. This is called intertextual coherence. There must be coherence between the information the translator elicits from ST and the information he understands and translates into TL. This is also called the fidelity rule and states that the TT must be faithful to the ST. The sixth ule states that the first five follow in hierarchical order with the skopos rule being predominant.

There are three main rules of the Skopos Theory that encompass the six that are discussed above. These are: the Skopos rule, the Coherence rule and Fidelity rule. The rules are hierarchically ordered with Skopos rule being predominant.

In the skopos rule, the purpose of the translation takes a central place. The coherence rule on the other hand imposes unto the translator the requirement that any text should make sense according to the target culture of the TL so that the target audience can make sense of it. A translation should be acceptable in a sense that it is coherent with the receiver's situation (Nord, 1997). Lastly, the fidelity rule necessitates intertextual coherence between ST and TT as TT are produced according to the information offered by the ST. Thus, the form of the TT would be determined by both the translator's interpretation of the ST and the translation's purpose.

The Skopos Theory was very instrumental in this study as it was used to determine whether the purpose of the translation was met, whether the translation made sense in the TL and whether it remained faithful to the ST. These factors were applied to determine whether the data was correctly or wrongly translated.

2.2.3 Summary

This chapter has done an in-depth discussion of literature review related to translation, translation errors and machine translation, as well as theoretical framework. Research methodology is discussed in detail in the next chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This part of the research paper discusses the research design and research methodology that was used in this research. It looks at the sampling procedures, sample size, data collection procedures, data analysis and presentation.

3.2 Research Design

The descriptive research design was used. This is a type of research design whose objective is to gather information in order to systematically describe a phenomenon, situation or population. Here, the researcher does not have any control over the variables. Instead, the variables are just identified, observed and measured. It entails collecting data to test certain hypothesis and answer questions related to the current status of the subject under investigation. It reports why things are the way they are (Kothari, 2003).

Data in this study, which was in the form of sentences in both English and Kiswahili, was drawn from newspaper headlines. These headlines were not necessarily front-page headlines; some were news items while others were from opinion articles. Some were from the Daily Nation while others were from Taifa Leo. These were translated using Google Translate and later by professional human translators. A detailed description of the output from both the human and GT translations was done. This was with the intention of studying the GT translations against the human translations complemented by the researcher's own intuition to identify errors in GT and later determine its degree of accuracy. To achieve this, data was analyzed both qualitatively and quantitatively.

3.3 Sampling Procedures and Sample Size

Random sampling of newspapers was done so as to choose samples that maximize understanding of the phenomenon. This sampling method was chosen so as to give each sample of headlines an equal chance of being selected and therefore, ensure objectivity. These samples were randomly drawn from newspaper headlines from the Daily Nation in the month of June and Taifa Leo in the month of July 2022. A total of one hundred news headlines were identified in twenty-six newspaper issues. Through systematic random sampling, all items were assigned numbers from 1-100 and every 2nd item was chosen. Out of the hundred items identified, only fifty items were selected. Twenty-five of them were from the Daily Nation (English) while twenty-five were from Taifa Leo (Kiswahili).

A questionnaire was used to extract the human translations. Four professional human translators were used. They were purposively selected on the basis of their proficiency in both English and Kiswahili and at least one year's experience in translation. The four were chosen for purposes of comparison, so as to get the best translation.

A detailed study was done to determine whether the GT translations were the same as the human translations or whether there were mismatches. The mismatches identified were used to calculate the extent to which GT is accurate.

This research used both qualitative and quantitative approaches. The qualitative method was used to describe the types of errors identified while the quantitative approach was used to measure the error percentage and so help in determining the accuracy of GT.

3.4 Data Collection Procedures

In this study, the data collected were in form of statements drawn from news headlines in two local dailies, the Daily Nation (June, 2022) and Taifa Leo (July, 2022).

These headlines, once selected, were fed into Google Translate in order to get the translation output. This data was then, through questionnaires, translated by professional human translators. Once translated, GT and human translations were compared to find out whether they were the same or there were discrepancies.

Although this study concerns studying GT errors against human translations, it does not mean that the human translator is perfect. It is the nature of humans to make mistakes and so human translators may not know enough, may sometimes misunderstand SL meaning and incorrectly render it in the TL or miss certain connotations and nuances (Robinson, 2011).

3.5 Data Analysis and Presentation

The data collected in this research was non-numerical and therefore used qualitative methods of data analysis. Kothari (2003) asserts that qualitative methods of data analysis do not produce discrete numerical data. The data is in the form of words rather than numbers. This kind of analysis helps the researcher to give a detailed explanation of the phenomena as it describes the patterns observed in the data. Quantitative data analysis was later done to determine the degree to determine the percentage of the errors identified.

Content analysis of the collected data was thereafter done to determine the extent to which GT translations differ from those of human translators. This helped to structure the qualitative data in a way that satisfied the accomplishment of the objectives in this

research. Content analysis is a method used to analyze written, verbal or visual communication. As a research method, content analysis is a systematic as well as an objective means or approach of quantifying a phenomenon. It also analyses documents and permits the scholar to test and prove theoretical aspects to be able to understand the data (Creswell,2017).

The first step involved selecting the unit of analysis, which were sentences in form of headlines. A sample of fifty data sets was used, 25 of which were in Kiswahili while the remaining 25 were in English. After this, the researcher tried to make sense of the data. Understanding the data is essential as it helps the researcher to prepare a detailed description of the phenomenon under study. Once adequately understood, data synthesis was done. This involved sifting data and putting pieces together and it enabled the researcher to make general statements as far as the phenomenon under study is concerned. The other element that needed to be done was theorizing. This is the way in which data is explained. Analysis was conducted using the inductive approach. This is a process that involves organizing the qualitative data by coding, creating categories and abstractions. Inferences were thereafter made and this helped in the interpretation of data.

This data was also subjected to quantitative analysis, a method of analyzing numerical data. This was done in order to tabulate the data and present it in percentages in order to draw conclusions about the extent to which GT is accurate. The data was presented in tables indicating the source language, GT translations and the human translations. A detailed discussion was done on the basis of the findings. Figures were also used to show the percentages of correctly and erroneously translated data.

3.6 Ethical considerations

The researcher sought consent from the human translators. Confidentiality was assured and the researcher committed to using the information they gave for this particular academic research only. After authorization to conduct research from the Kenyatta University graduate school, a research permit from NACOSTI was obtained.

3.7 Summary

In this chapter, the methodology used in this research is discussed. Data analysis and presentation are also explained. Finally, ethical considerations are highlighted. The next chapter tackles data presentation, analysis and interpretation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

In this chapter, the data collected is presented in tables containing the data sets as well as their Google Translate and human translated equivalents. An in-depth discussion of the findings is done. In the data, ST is used to stand for source text, GT for Google Translate translations and HT stands for human translations. Though four human translators are used in this research, it is solely for the purpose of comparison. The translation that renders the meaning best is the one that has been chosen and tabulated. Numbers 1-50 are used to label the data sets.

4.1 Sampled Data

This section presents a tabulation of the data collected. Tables 4.1and 4.2 present data in Kiswahili and English respectively. The data is presented in three columns. The first column presents newspaper headlines in both Kiswahili and English. It is labelled Source Text (ST). The second column consists of Google Translate renderings (GT) and the last one contains human translator versions (HT).

Table 4.1: Data in Kiswahili translated into English

Source Text (ST)	**Google Translate Rendering (GT)**	**Human Translator Rendering (HT)**
1. Gharama ya Maisha Yazidi kulemea raia.	The cost of living will increasingly burden the citizens.	The cost of living continues to burden citizens.
2. Mung'aro apumua korti ikitupa kesi.	Mung'aro breathes a sigh of relief as the court throws out the case.	Reprieve for Mung'aro as court dismisses his case.
3. Walionusurika ajali ya mto Nithi wasimulia tukio hilo.	Survivors of the Nithi river accident recount the incident.	Survivors of Nithi river accident narrate the ordeal.
4. Wakenya wanunua unga kwa bei ya juu licha ya ahadi ya rais.	Kenyans buy flour at a high price despite the president's promise.	Kenyans buy flour at a high cost despite the president's promise.
5. Manung'uniko yazidi kuhusu uchafu wa maji taka Mombasa.	There are more complaints about dirt and sewage in Mombasa.	Complaints about the sewage in Mombasa increase.
6. Viongozi wa kiislamu wataka Magoha afutwe kazi kwa matamshi duni.	Muslim leaders want Magoha to be fired for poor remarks.	Muslim leaders call for Magoha's sacking over derogatory language.
7. Uhuru awaaga marais kabla astaafu Agosti.	Uhuru bids farewell to presidents before he retires in August.	Uhuru bids presidents farewell before retiring in August.
8. Matumaini idadi ya watalii watakaozuru Masai Mara ikiongezeka.	I hope the number of tourists who will visit Maasai Mara will increase.	Hope as the number of tourists visiting Masai Mara is set to increase.

9. Furaha huku kiwanda cha Mumias kikianza kusaga miwa baada ya miaka kadhaa.	Happiness as the Mumias factory starts grinding sugarcane after several years.	Joy as Mumias sugar factory starts processing sugar cane after several years.
10. Wawaniaji Azimio wakimbilia Raila.	Azimio aspirants run to Raila.	Azimio contestants run to Raila.
11. Serikali yafidia wauzaji unga rejareja.	Government to compensate flour retailers.	The government compensates flour retailers.
12. Maafisa watatu wa polisi wapatikana na hatia ya kumuua wakili Kimani.	Three police officers were found guilty of killing lawyer Kimani.	Three police officers found guilty of lawyer Kimani's murder.
13. IMF yahujumu ahadi watoazo Ruto, Raila.	The IMF undermines the promises made by Ruto, Raila.	IMF sabotages promises given by Ruto, Raila.
14. Mwalimu kizimbani kwa kumnajisi mwanafunzi.	Teacher in the dock for defiling a student.	A teacher in the dock for defiling a student.
15. Magavana walafi washinikiza walipwe mamilioni wakistaafu.	Greedy governors pushing to be paid millions when they retire.	Greedy governors pushing to be paid millions on retirement.
16. Mume ashtakiwa kutisha kumteketeza mke wake.	A husband is accused of threatening to burn his wife.	A husband has been accused of threatening to burn his wife to ashes.
17. Raia wa Kenya wasichague wafisadi Agosti.	Kenyan people should not vote for corrupt people in August.	Kenyan citizens should not elect corrupt leaders in August.
18. Utawala wa Uhuru wang'aa katika ujenzi wa barabara.	Uhuru's administration shone in the construction of roads.	Uhuru's administration shines in road construction.

19. Sonko amalizika kisiasa.	Sonko is finished politically.	Sonko is politically finished.
20. Fedha: wakuu wa shule sasa waingia baridi.	Money: school principals are now getting cold.	Money: school heads now worried.
21. Mamlaka ya kudadarukia majanga yamulikwa kwa utepetevu kudhibiti hali Thika Road.	Disaster management authorities have been informed about the failure to control the situation on Thika Road.	Disaster Management Authority on the spot for inefficiency in managing the situation at Thika Road.
22. Sakaja aruka kiunzi cha mwisho.	Sakaja jumps the last frame.	Sakaja overcomes the last hurdle.
23. Mrithi wa Uhuru kuona moto.	Mrithi wa Uhuru to see the fire.	Uhuru's predecessor to face it rough.
24. 'Vuta pumzi' kuanza kazi leo Jumatatu.	'Take a breather' to start work today, Monday.	Alco blow use to be effected today, Monday.
25. Ombi waislaamu wadumishe amani uchaguzi ukinukia.	I request the Muslims to maintain peace when the elections are held.	Muslims requested to maintain peace as elections draw near.

The table above presents sampled data that was translated from Kiswahili into English.

Table 4.2 below presents English data translated to Kiswahili.

Table 4.2: Data in English translated into Kiswahili

Source Text (ST)	**Google Translate Rendering (GT)**	**Human Translator Rendering (HT)**
26. Jitters in Azimio over scheme to eliminate 'weak' candidates.	Mivutano katika Azimio kuhusu mpango wa kuwaondoa wagombea 'dhaifu'.	Wasiwasi katika Azimio kuhusu njama ya kuwaondoa wagombeaji walio 'dhaifu.'
27. New scam claim adds twist in probe on murder of four suspects.	Dai jipya la kashfa linaongeza mabadiliko katika uchunguzi kuhusu mauaji ya washukiwa wanne.	Madai ya kashfa mpya yaongeza utata kuhusu mauaji ya washukiwa wanne.
28. Ruto dangles bag of goodies in battle for PWD electors.	Ruto aning'iniza begi la zawadi katika vita vya kuwania wapiga kura wenye ulemavu.	Ruto awaahidi wapiga kura walio na ulemavu mema.
29. Don't elect allies of land cartels, Uhuru says, launches titles drive.	Msiwachague washirika wa mashirika ya ardhi, Uhuru asema, azindua hati miliki.	Msichague marafiki wa wanaonyakua ardhi, asema Uhuru, akizindua mradi wa hati miliki.
30. Arrest skyrocketing cost of living and food prices.	Kukamata kupanda kwa bei ya Maisha na vyakula.	Dhibiti gharama ya Maisha na bei ya vyakula inayopanda kila kuchao.
31. Uhuru invited ghosts of Congo.	Uhuru alialika mizimu ya Kongo.	Uhuru alialika mizimu ya Kongo.
32. Tough battles as Kenya Kwanza team out to spoil Raila's party.	Vita vikali huku Kenya Kwanza ikishirikiana kuharibu chama cha Raila.	Vita vikali huku timu ya Kenya Kwanza ikipanga kuharibu chama cha Raila.
33. Traffic madness hits city on Green Park's trial run.	Wazimu wa trafiki wakumba jiji kwenye mbio za majaribio za Green Park.	Mpangilio wa magari wasambaratika mjini huku majaribio ya Green Park yakifanywa.

34. KWS on the spot as wildlife run amok.	KWS papo hapo huku Wanyama pori wakikimbia.	KWS kuanikwa huku wanyama pori wakienea kote.
35. Safari Rally breathes life into sleepy Naivasha economy.	Safari rally yatia uhai katika uchumi wa Naivasha wenye usingizi.	Mbio za magari zaleta uhai kwenye uchumi wa Naivasha uliokuwa umefifia.
36. Cash, crypto deals and four murders.	Fedha, mikataba ya crypto na mauaji manne.	Fedha, mikataba ya crypto na mauaji manne.
37. Match political promises made on property to current realities.	Linganisha ahadi za kisiasa zinazotolewa kwenye mali na hali halisi ya sasa.	Sawazisha ahadi za kisiasa na uhalisia wa kisasa.
38. No more 'ugali saucer' as the price of flour soars.	Hakuna 'ugali saucer' bei ya unga inapanda.	Hakuna ugali wa kuongezewa huku bei ya unga ikizidi kupanda.
39. Do men have a biological clock? The best age to become a father.	Wanaume wana saa ya kibayolojia? Umri bora wa kuwa baba.	Je, wanaume wana wakati bora wa uzazi? Umri unaofaa kuwa baba.
40. Battle lines drawn as race to succeed Wambora intensifies.	Mistari ya vita inayochorwa huku mbio za kumridhi Wambora zikizidi.	Mistari ya vita yachorwa huku mbio za kumrithi Wambora zikizidi.
41. Numbers game: Mt. Kenya noisy debate on family size.	Mchezo wa nambari: mjadala wa kelele wa mlima Kenya katika ukubwa wa familia.	Mchezo wa idadi: mlima Kenya kuwa na mjadala wa kelele kuhusu idadi ya wanafamilia.
42. End of the road for Sonko as IEBC blocks Mombasa governor quest.	Mwisho wa barabara ya Sonko huku IEBC ikizuia harakati za ugavana Mombasa.	Mwisho wa njia kwa Sonko huku IEBC ikizuia wito wake wa ugavana wa Mombasa.

43. Mask up! Kagwe now orders amid surge in Covid 19 infections.	Mask up! Kagwe sasa inaagiza huku kukiwa na ongezeko la maambukizi ya COVID	Vaa barakoa! Kagwe sasa aamuru huku kusambaa kwa Korona kukizidi.
44. Karua: don't fear selling Raila in Mt. Kenya.	Karua: usiogope kumuuza Raila Katika Mlima Kenya.	Karua: msiogope kuwashawishi wana mlima Kenya kumuunga Raila mkono.
45. Sibling rivalry now rocks Kenya Kwanza campaigns.	Ushindani wa ndugu sasa watikisa kampeni za kwanza za Kenya	Mgogoro wazuka baina ya ndugu kwenye kampeni za Kenya Kwanza.
46. Fall of Sakaja.	Kuanguka kwa sakaja.	Kuanguka kwa Sakaja.
47. Pain as the cost of maize rises.	Maumivu wakati gharama ya mahindi inapanda.	Uchungu huku bei ya mahindi ikiongezeka.
48. Degree battle.	Vita vya shahada.	Vita vya shahada.
49. Game on as Sakaja, Wavinya, Malombe get IEBC nod to vie.	Game on as Sakaja, Wavinya, Malombe wapata IEBC nod to vie.	Ushindani huku Sakaja, Wavinya, Malombe wakiidhinishwa kuwania katika uchaguzi na IEBC.
50. Let's shun large families.	Tujiepushe na familia kubwa.	Tuache kuwa na familia kubwa.

In this second table, English data translated into Kiswahili is presented. As observed in the previous table, some human translations and GT translations are more or less the same but for others, there are mismatches. These mismatches are presented in table 4.3 below.

Table 4.3 Items exhibiting errors

Source language (ST)	**Google Translate renderings (GT)**	**Human Translator Renderings (HT)**
6. Viongozi wa kiislamu wataka Magoha afutwe kazi kwa matamshi duni.	Muslim leaders want Magoha to be fired for **poor** remarks.	Muslim leaders call for Magoha's sacking over foul language.
11. Serikali yafidia wauzaji unga rejareja.	Government **to compensate** flour retailers.	The government compensates flour retailers.
18.Utawala wa Uhuru wang'aa katika ujenzi wa barabara.	Uhuru's administration **shone** in the construction of roads.	Uhuru's administration shines in road construction.
20. Fedha: wakuu wa shule sasa waingia baridi.	Money: school principals are now **getting cold.**	Money: school heads now worried.
21.Mamlaka ya kudadarukia majanga yamulikwa kwa utepetevu kudhibiti hali Thika Road.	Disaster management authorities **have been informed** about the **failure** to control the situation on Thika Road.	Disaster management authority on the spot for inefficiency in managing the situation at Thika Road.
ST22. Sakaja aruka kiunzi cha mwisho.	Sakaja **jumps the last frame.**	Sakaja overcomes the last hurdle.
ST23. Mrithi wa Uhuru kuona moto.	**Mrithi wa** Uhuru to **see the fire.**	Uhuru's predecessor to face it rough.
ST24. 'Vuta pumzi' kuanza kazi leo Jumatatu.	**'Take a breather'** to start work today, Monday.	Alcoblow use to be effected today, Monday.
ST 25. Ombi waislaamu wadumishe amani uchaguzi ukinukia.	**I** request the Muslims to maintain peace when the elections are held.	Muslims requested to maintain peace as elections draw near.

ST 26. Jitters in Azimio over scheme to eliminate 'weak' candidates.	**Mivutano** katika Azimio kuhusu **mpango** wa kuwaondoa wagombea 'dhaifu'.	Wasiwasi katika Azimio kuhusu njama ya kuwaondoa wagombeaji walio 'dhaifu'.
ST 27. New scam claim adds twist in probe on murder of four suspects.	Dai jipya la kashfa linaongeza **mabadiliko** katika uchunguzi kuhusu mauaji ya washukiwa wanne.	Madai ya kashfa mpya yaongeza utata juu ya mauaji ya washukiwa wanne.
ST 30. Arrest skyrocketing cost of living and food prices.	**Kukamata** kupanda kwa bei ya Maisha na vyakula.	Dhibiti gharama ya Maisha na bei ya vyakula inayopanda kila kuchao.
ST 33. Traffic madness hits city on Green Park's trial run.	**Wazimu** wa trafiki wakumba jiji kwenye mbio za majaribio za Green Park.	Mpangilio wa magari wasambaratika mjini huku majaribio ya Green Park yakifanywa.
ST 34. KWS on the spot as wildlife run amok.	KWS **papo hapo** huku Wanyama pori **wakikimbia.**	KWS kuanikwa huku Wanyama pori wakienea kote.
ST 35. Safari Rally breathes life into sleepy Naivasha economy.	Safari rally yatia uhai katika uchumi wa Naivasha **wenye usingizi.**	Mbio za magari zaleta uhai kwenye uchumi wa Naivasha uliokuwa umefifia.
ST 38. No more 'ugali saucer' as the price of flour soars.	Hakuna **'ugali saucer'** huku bei ya unga ikipanda.	Hakuna ugali wa kuongezewa huku bei ya unga ikizidi kupanda.
ST 43. Mask up! Kagwe now orders amid surge in Covid 19 infections.	**Mask up!** Kagwe sasa inaagiza huku kukiwa na ongezeko la maambukizi ya COVID	Vaa barakoa! Kagwe sasa aamuru huku kusambaa kwa Korona kukizidi.

ST 44. Karua: don't fear selling Raila in Mt. Kenya.	Karua: usiogope **kumuuza** Raila katika Mlima Kenya.	Karua: msiogope kuwashawishi wana mlima Kenya kumuunga Raila mkono
ST 49. Game on as Sakaja, Wavinya, Malombe get IEBC nod to vie.	**Game on** as Sakaja, Wavinya, Malombe wapata IEBC **nod to vie.**	Ushindani huku Sakaja, Wavinya, Malombe wakiidhinishwa kuwania katika uchaguzi na IEBC.

Table 4.3 presents only those items that exhibit errors. The sampled data is in both English and Kiswahili. In some cases, GT wrongly translates a word or a phrase as a result of failing to take the context into consideration in the process of translation, bringing about a literal translation. An instance is as follows:

*ST 20: Fedha: wakuu wa shule sasa **waingia baridi.***

*GT 20: Money: school principals are now **getting cold.***

HT 20: Money: school heads now worried.

In this item, there is a mismatch between '***waingia baridi'*** which is literally translated as '***getting cold'*** instead of '***getting worried'*** as the HT rightly puts it. Thus, the translation lacks faithfulness to the ST. For this reason, it becomes difficult to decipher what message GT is trying to put across.

In other instances, GT gives the translation of a word or a phrase that is not even closely related to the source text, resulting in a completely distorted product. Below is an illustration:

ST 26: ***Jitters*** *in Azimio over scheme to eliminate 'weak' candidates.*

GT 26: ***Mivutano*** *katika Azimio kuhusu mpango wa kuwaondoa wagombea 'dhaifu'.*

HT 26: wasiwasi katika Azimio kuhusu njama ya kuwaondoa wagombeaji walio 'dhaifu'.

'Jitters' means nervousness. GT however translates it to '***mivutano'*** which means '***wrangles'***. Thus, GT renders a wrong translation which is quite misleading as that is not the meaning intended in the ST.

Moreover, in other cases GT gets the translation right but uses the wrong tense as illustrated below:

ST 18: Utawala wa Uhuru ***wang'aa*** *katika ujenzi wa barabara.*

GT 18: Uhuru's administration ***shone*** *in the construction of roads.*

ST18: Uhuru's administration shines in road construction.

In the ST, '***wang'aa'*** means ***'shines'*** as translated by HT. '***Shines***' is in the simple present tense. GT however decides to correctly translate the word '***shine'*** but then misses out on the tense, translating it to ***'shone'*** which is in the simple past. Hence, when the tense is wrongly translated, though the message is understood, it distorts the time when the indicated action took place.

Lastly, in other cases GT is completely unable to get an equivalent in the target text and resorts to using an expression as it is in the source text. Below are some examples:

ST 43: ***Mask up****! Kagwe now orders amid surge in Covid 19 infections.*

GT 43: ***Mask up!*** *Kagwe sasa inaagiza huku kukiwa na ongezeko la maambukizi ya COVID*

HT 43: Vaa barakoa! Kagwe sasa aamuru huku kusambaa kwa Korona kukizidi.

In this last example, GT cannot decipher the correct translation for '***mask up'*** which the HT translation again gets it right and presents it as '***vaa barakoa'*** (*wear a mask*). For someone who is unfamiliar with the English language, it would be impossible to understand what the GT translation means and so the translation will not have achieved its objective.

4.2 Identification of Translation Errors

The first objective involves identification of erroneous items that arise when data is translated on Google Translate using both Kiswahili and English with human translations as a benchmark. In his Theory of Language, Ferdinand de Saussure defined language as an internalized system of symbolic units (signs). The message is the signifier while meaning is the signified. Thus, translation is the transfer of signifiers from a source language to a target language on the basis of the concept of the translation in mind. If this does not occur, then a non-equivalence between ST and TT occurs.

Language is a system of communication that uses arbitrary symbols. These symbols differ from one language to another. With the numerous languages that we have all over

the world, translation plays a central role in in ensuring that ideas in one language are represented in another one. Foster (1958) says that translation is an activity that happens in the mind. As such, the translator plays the role of transferring ideas from the source text to the minds of the target audience.

This research is based on both the Relevance and Skopos Theories. The Relevance Theory relies heavily on inference and interpretation. On the basis of this theory, communication seeks the information that is most relevant using the least possible effort, (Gutt, 2000). The theory also asserts that speakers try as much as possible to communicate the most relevant information with the minimal processing cost.

The errors identified above occur because the translator (Google Translate) has been unable to make the correct inferences and so the wrong interpretation of the ST occurs. This is what brings about the erroneous items. An example is the item presented below:

ST 30: ***Arrest*** *skyrocketing cost of living and food prices.*

GT 30: ***Kukamata*** *kupanda kwa bei ya Maisha na vyakula.*

HT 30: Komesha gharama ya Maisha na bei ya vyakula inayopanda.

Arrest has a variety of meanings including the one translated by GT as ***'kukamata'***. However, GT fails to make inference of the fact that in this case, '***arrest***' means to ***'put to a stop'*** which the HT translates as ***'komesha'***. As a result, there is miscommunication because the GT translation is irrelevant. Another example is the following:

ST 44: Karua: don't fear ***selling*** *Raila in Mt. Kenya.*

GT 44: Karua: usiogope ***kumuuza*** *Raila katika Mlima Kenya.*

HT 44: Karua: msiogope kuwashawishi wana mlima Kenya kumuunga Raila mkono

The mistranslated word that has been highlighted is ***'selling'*** in the ST. This word is used when referring to goods and services. It is incorrect to talk about it when referring to human beings and especially in this context where it is supposed to be figuratively used. GT fails to make the correct inference and so fails to talk about '***kuwashawishi'*** ***(to persuade)*** as the human translator does.

Skopos Theory on the other hand was used to determine whether the purpose of the translation has been met, whether the translation makes sense to the target audience and if it remains faithful to the ST. For instance, the item exemplified below is deficient in the coherence rule.

ST24: 'Vuta pumzi' kuanza kazi leo Jumatatu.

*GT24: '****Take a breather'*** *to start work today, Monday.*

HT24: Alcoblow use to be effected today, Monday.

This translation fails in the coherence rule because the target audience may not make sense of *'take a breather*' and may actually be misleading because taking a breather essentially means taking a short break to rest which is not what is portrayed in the ST.

The next example also does not comply with the fidelity rule.

ST44: Karua: Don't fear selling Raila in Mt. Kenya.

GT44: Karua: Usiogope ***kumuuza*** *Raila katika Mlima Kenya.*

HT44: Karua: msiogope kuwashawishi wana Mlima Kenya kumuunga Raila mkono.

Selling has been used figuratively to mean to persuade people to vote for Raila. This is however not reflected in the GT translation as it gives a literal translation. This therefore means that there is meaning loss as a result of not adhering to the fidelity rule.

In a nutshell, table 4.3 confirms that indeed, when Kiswahili or English data is translated on GT, some errors occur. From the tabulated data, 9/50 items in Kiswahili source data exhibited ST-TT mismatches. On the other hand, 10/50 items in the English source data had loss of meaning. Thus, a total of 19 data sets containing errors were identified. This means that 31/50 items were correctly translated and this is what was used to determine the accuracy of GT.

4.3 Categorization of Translation Errors

The second objective of this research is to classify the errors identified in relation to their types. The discussion below contains items that exhibit meaning loss as presented on the tabulated data. According to Larson (1984), in translation a translator should not only understand the lexicon and grammar, they must also know the communication situation and also the cultural context of both languages. This helps in analyzing the meaning in ST and rearranging the similar meaning utilizing lexicon and grammatical

structure that are appropriate in the TL and its primary cultural context. Translation errors in this study are classified into three categories: lexical, pragmatic and grammar. Sometimes, the same headline will have more than one type of error and some other times, one error may fall in more than one of these error categories.

4.3.1. Lexical Errors

In this category, the study focuses on lexical translation errors evident in the collected data. Lexical translation errors occur when a translator is not capable of transferring meanings of words and word collocation intended in source language to the ones that are equivalent in source language. There are many types of lexical errors but in this study, focus is given to only three of them namely: wrong word choice, errors of literal translation and errors of collocation.

4.3.1.1 Wrong word choice errors

This kind of lexical error occurs when a translator uses an incorrect word when translating ST to TT. This makes it difficult to determine the originally intended meaning. Some data that exhibited such errors is as follows:

1.

ST21. *Mamlaka ya kudadarukia majanga yamulikwa kwa* ***utepetevu*** *kudhibiti hali Thika Road.*

GT21. *Disaster management authorities have been informed about the* ***failure*** *to control the situation on Thika Road.*

HT21. *Disaster management authority on the spot for inefficiency in managing the situation at Thika Road.*

GT translates '***utepetevu'*** which means '***laxity'*** or ***'inefficiency'*** to '***failure'. Failure***, which means ***'unexpected omission'*** is misleading because the institution in question tried to manage the situation, though it did not do it as expected. Hence, GT has made the wrong word choices during translation and this has distorted the meaning in the ST.

2.

ST22. *Sakaja aruka* ***kiunzi*** *cha mwisho.*

GT22. *Sakaja jump****s*** *the last* ***frame****.*

HT22. *Sakaja overcomes the last hurdle.*

Again, in this item there are two errors but one is discussed in this section and the other one later. Here, GT translates the word ***'kiunzi'*** to '*frame'* instead of '***hurdle***'. This brings about non-equivalence as **'*kiunzi*'** is an obstacle which is not the meaning brought about by the word '***frame'***. This mismatch makes the translation sound so unnatural as well as communicating the wrong meaning.

3.

ST 26. Jitters *in Azimio over* ***schem****e to eliminate 'weak' candidates.*

GT 26. ***Mivutano*** *katika Azimio kuhusu* ***mpango*** *wa kuwaondoa wagombea 'dhaifu'.*

HT 26. *Hofu katika Azimio juu ya njama ya kuwaondoa wagombeaji walio 'dhaifu'.*

In this particular data set, two items are discussed. These are '***jitters***' which GT translates to '***mivutano***' and '***scheme'*** translated to ***'mpango'*** respectively. '***Mivutano'*** which means *wrangles* is misleading as it does not mean the same as ***'jitters'*** which refers to *worry or nervousnes*s. Again, '***mpango***' is *a plan or arrangement* which is not the actual meaning implied in the ST. A ***scheme*** is a plan or arrangement to do something, but it is necessarily a secret kept by few people and not open to all. There is miscommunication in this item as a result of choosing the wrong words.

Commented [s1]:

4.

ST 27*. New scam claim adds* ***twist*** *in probe on murder of four suspects.*

GT 27*. Dai jipya la kashfa linaongeza* ***mabadiliko*** *katika uchunguzi kuhusu mauaji ya washukiwa wanne.*

HT 27*. Madai ya kashfa mpya yaongeza utata juu ya mauaji ya washukiwa wanne.*

The lexical item ***'twist'*** has been translated to ***'mabadiliko'*** by GT. ***'Mabadiliko'*** means ***change***, which is not the right translation for '***twist'*** whose correct translation is ***'an unforeseen development.*** Since GT is unable to correctly render the word, then the receptor audience will get the wrong message.

From the foregoing, wrong word choices lead to inaccurate or sometimes wrong transfer of meaning. This defies the principle of relevance as one can hardly infer or process the information conveyed.

4.3.1.2 Errors of literal translation

This is word to word translation that is too close to the original text. It may not sound natural in the target language and is often difficult to read. It may also not convey the intended meaning of the source text. Often, it maintains the same phrasing or even word order of the original text. Some instances are presented as follows:

5.

ST 6*: Viongozi wa kiislamu wataka Magoha afutwe kazi kwa matamshi* ***duni.***

GT 6*: Muslim leaders want Magoha to be fired for* ***poor*** *remarks.*

HT 6*: Muslim leaders call for Magoha's sacking over derogatory language.*

The word '***duni'*** means a number of things including ***not strong, inferior*** and ***poor***. GT does a literal translation to '***poor'***. GT goes off the mark because the intended meaning is beyond the literal meaning of the word '***duni'***. Therefore, the human translation which translates it to ***derogatory*** is better understood because it tries to make the word relevant to the utterance and so it is more communicative than the GT.

7.

ST 30: Arrest *skyrocketing cost of living and food prices.*

GT 30*:* ***Kukamata*** *kupanda kwa bei ya Maisha na vyakula.*

HT 30*: Dhibiti gharama ya Maisha na bei ya vyakula inayopanda kila kuchao.*

The word in question here is ***arrest*** which is translated to '***kukamata***' by GT. GT is actually correct because that is one of the several meanings of the word ***arrest***. However, it is not the right translation in this case as ***arrest*** may also mean ***cause to stop.*** The HT is thus a better translation as it talks of '***dhibiti'*** as it is able to make a more accurate inference. We hence conclude that GT has gone astray in its translation.

8.

ST 35. *Safari Rally breathes life into* ***sleepy*** *Naivasha economy.*

GT 35. *Safari rally yatia uhai katika uchumi wa Naivasha* ***wenye usingizi.***

HT 35. *Mbio za magari zaleta uhai kwenye uchumi wa Naivasha uliokuwa umefifiia.*

'S***leepy***' is translated to '***wenye usingizi'*** and '***uliokuwa umefifiia'*** by GT and HT respectively. '***Sleepy***' literally translates to '***wenye usingizi'*** but then, '***uliokuwa umefifia'*** is more appropriate to ***the economy had been declining.*** The GT translation leads to loss of meaning.

9.

ST 44*. Karua: don't fear* ***selling*** *Raila in Mt. Kenya.*

GT 44*. Karua: usiogope* ***kumuuza*** *Raila katika Mlima Kenya.*

HT 44*. Karua: msiogope kuwashawishi wana mlima Kenya kumuunga Raila mkono.*

To '***sell'*** in Kiswahili is '***kuuza***'. However, it may not make sense in this particular case. A little background will help to understand why ***'kuuza'*** is wrong. Raila was a presidential aspirant in the elections concluded in August 2022 and Martha Karua was his running mate. Mt. Kenya, where Ms. Karua comes from, has never supported Raila. This utterance was made by Karua to encourage politicians from the region not to shy

away from drumming up support for him. Therefore, '***kuwashawishi***' (*to persuade)* is a more appropriate rendering for this context than '***kumuuza' (to sell)***.

Literal translation not only sounds unnatural but also produces incomprehensible results which are difficult to understand. Therefore, the objective of translation will not be achieved. One of the maxims proposed by Paul Grice in his Cooperative Principle, which helps build the Relevance theory, is the maxim of relation. He cites that every utterance must be relevant. If a literal translation is made, then the target text is irrelevant as it does not render the originally intended meaning.

4.3.1.3 Errors of collocation

In most languages, there exists a kind of 'natural order' in which words are arranged to relate to one another in sentences. This is called collocation. Collocation is the co-occurrence of lexical items or positioning close together of words in a sentence more often than would be expected by chance (Baker, 1992). When a word occurs in a given context, the naturally co-occurring word automatically comes to the mind. It becomes an error therefore, if one inappropriately pairs such naturally co-occurring lexical items in a text.

10.

ST20. *Fedha: wakuu wa shule sasa waingia* ***baridi.***

GT20. *Money: school principals are now getting* ***cold.***

HT20*.Money: school heads now worried.*

It is important to mention that '***waingia baridi'*** has been used figuratively. GT however uses a wrong collocation. Instead of talking of '***getting worried'*** it talks of '***getting cold'***

and this results to a nonsensical translation as is it difficult to understand what that expression means.

11.

ST 33. *Traffic* ***madness*** *hits city on Green Park's trial run.*

GT 33*.* ***Wazimu*** *wa trafiki wakumba jiji kwenye mbio za majaribio za Green Park*

HT 33*. Magari yakosa utaratibu mjini huku majaribio ya Green Park yakianza.*

While this may appear as a problem resulting from literal translation, it is actually a collocational error. ***Madness*** may mean ***insanity or disorderliness***. However, in Kiswahili, '***wazimu'*** necessarily means ***insanity or the state of one's mental faculties not functioning well.*** The right collocation would therefore have been '***vurugu ya trafiki' (disorderliness)***. So, when GT talks of ***'wazimu'***, it hardly makes any sense and so the ST communicator's intention is lost in the translation.

Words are carriers of meanings because a word is the basic unit of communication. If a word is inappropriately used, then there is communication breakdown. Even though translation looks at the big picture, not just the word, it is imperative that these words are correctly used because if not, there will be discrepancies between ST and TT.

Baker (1992) defines lexical meaning as the specific value a word has in a particular linguistic system and the 'personality' it acquires through usage within that system. For this reason, lexical errors occur when a list or a string of words that are considered to belong to a syntactic category contain errors associated with the wrong word choices. Such variations to some degree affect the text meaning. A time when the output of the

particular Target Text is incapable of identifying the corresponding word from the ST then lexical interference occurs and this distorts the meaning.

4.3.2 Pragmatic Errors

The meaning of a sentence can depend on other factors besides the words themselves. It can be shaped by contextual factors such as the situation in which a sentence is used or the social rules that tell us how we should use language (Griffins, 2006). These factors can change what a sentence means or give it additional meaning. The study of these contextual factors and the way they create meaning is called pragmatics.

As mentioned by Griffins (2006), pragmatics entails the contact between semantic knowledge and our existing knowledge and our perception of the world, considering the central contexts of use. It goes beyond the literal sentence or utterance meaning. Consequently, one utterance may have several meanings depending on the context of use. Pragmatic errors occur when a speaker or writer fails to use language in a way that is appropriate for the context. The following is a presentation of pragmatic errors identified from the collected data. It should be noted that some errors are discussed under lexical and grammatical errors but the discussion here takes on the pragmatic perspective.

12.

ST6. *Viongozi wa kiislamu wataka Magoha afutwe kazi kwa matamshi* ***duni****.*

GT6. *Muslim leaders want Magoha to be fired for* ***poor*** *remarks.*

HT6. *Muslim leaders call for Magoha's sacking over derogatory language.*

In the headline presented above, GT translates **'*duni*'** as ***poor*.** While in some circumstances the two can be used as synonyms, the context of usage in this particular case distorts the original meaning. Originally, the meaning is that the then Cabinet Secretary for Education prof. George Magoha had made a statement that implied that all Muslims are terrorists and thus profiling them in terms of their religion, something that is not expected of someone of his stature. Therefore, if '***duni***' is translated as poor in this context, then the exact meaning of the statement will not be accurately rendered, and so *'**derogatoryl**'* is a more preferable word because it means **'*demeaning*'**.

13.

ST20. *Fedha: wakuu wa shule sasa **waingia baridi.***

GT20. *Money: school principals are now **getting cold**.*

HT20.*Money: school heads now worried.*

Focus is going to be on the phrase '***waingia baridi'***. GT renders it as '***getting cold'*** while the HT rendering is '***worried*'**. GT uses literal meaning without taking context into consideration. In the ST, the meaning is not '***getting cold'*** in the actual sense of the word, but it is used figuratively to mean that school heads are ***uneasy*** and ***getting worried*** because there are no sufficient funds to run schools. If the context is not taken into consideration, the meaning implied is that of getting cold in relation to weather and climatic conditions.

14.

ST22. *Sakaja **aruka** kiunzi cha mwisho.*

GT22. *Sakaja **jumps** the last frame.*

HT22. *Sakaja overcomes the last hurdle.*

Though this headline had been discussed under lexical errors, it is also going to be discussed here, but now the focus shifts to the word '***aruka*'** which is rendered to **'*jumps*'** and '***overcomes*'** by GT and HT respectively. When the context is studied closely, it is not about athletics where athletes jump over hurdles when undertaking a race. Rather, it talks about Johnson Sakaja, a Nairobi gubernatorial aspirant who could not be cleared to vie at first in the just concluded general elections in Kenya because questions had been raised concerning his degree. This is what had been referred to as '***kiunzi**'*. He was later cleared and was on the ballot. Thus, it would be incorrect to translate that to **'*jump*'** as it would bring into mind the act of literally jumping and so '***overcome*'** is the best word in this case.

15.

ST23. *Mrithi wa Uhuru* ***kuona moto.***

GT23. ***Mrithi wa*** *Uhuru to* ***see the fire****.*

HT23. *Uhuru's predecessor to face it rough.*

In this item, '***kuona moto'*** translates to '***to see fire'*** on GT, which is a literal translation, and '***to face it rough'*** by HT. In order to understand the context surrounding this headline better, it is important to remember that Uhuru is the outgoing Kenyan president. By the end of his tenure as the president, the country was experiencing hard economic times. Consequently, his successor would not have an easy time in managing

the country. This is what is meant by '***kuona moto' (face it rough)***. With this in mind then, it would be incorrect to do a literal translation and talk of '***to see fire'***. Instead, '***to face it rough'*** is the best match.

16.

ST24. *'**Vuta pumzi'** kuanza kazi leo Jumatatu.*

GT24. *'**Take a breather'** to start work today, Monday.*

HT24. *Alco blow use to be effected today, Monday.*

GT renders *'**Vuta pumzi'*** as '***take a breather'*** and HT as *'**Alco blow'***. Literally, '***vuta pumzi'*** means to ***breath in***. However, GT was unable to decipher the context because here, it is not about breathing in, but using Alcoblow to nab culprits of drunk driving as it is unlawful in Kenya. Alco blow is a device that is used to detect the alcohol levels in the breath of motorists. For someone who is unfamiliar with the Kiswahili, the translation would not make sense at all.

17.

ST 30. ***Arrest*** *skyrocketing cost of living and food prices.*

GT 30. ***Kukamata*** *kupanda kwa bei ya Maisha na vyakula.*

HT 30. *Dhibiti gharama ya Maisha na bei ya vyakula inayopanda kila kuchao.*

'***Arrest***' has several meanings, among them, the one translated by GT as '***kukamata'***. However, looking at the context, '***kukamata***' which means '***to take into legal custody'***

is misleading. The correct meaning for '***arrest'*** in this case is supposed to be '***to stop'*** which has been correctly rendered by the HT using the word *'**dhibiti**'*.

18.

ST 33. ***Traffic madness*** *hits city on Green Park's trial run.*

GT 33. ***Wazimu wa trafiki*** *wakumba jiji kwenye mbio za majaribio za Green Park*

HT 33. *Magari yakosa utaratibu mjini huku majaribio ya Green Park yakianza.*

'***Traffic madness'*** translates to '***wazimu wa trafiki'*** on GT and '***magari yakosa utaratibu'*** *(vehicles lack orderliness)* by HT. While semantically the GT translation is accurate, it is not so pragmatically. Instead, *'**madness'*** in this case does not refer to a state of mind but ***disorderliness*** on the roads. GT translation thus brings about confusion as one would not relate madness or insanity and traffic.

19.

ST 34. *KWS* ***on the spot*** *as wildlife run amok.*

GT 34. *KWS* ***papo hapo*** *huku Wanyama pori wakikimbia.*

HT 34. *KWS kuanikwa huku Wanyama pori wakienea kote.*

'*On the spot'* can mean several things, among them the meanings rendered by both GT and HT. The expression '***on the spot'*** has been translated to *'**papo hapo'*** by GT and '***kuanikwa**'* by HT. GT does a literal translation while in the actual sense, '***on the spot'***

(to be exposed for a wrong done) has been used figuratively and so this brings about non-equivalence. Contextually, GT gets it wrong and so the translation is non-sensical.

20.

ST 38. *No more '**ugali saucer'** as the price of flour soars.*

GT 38. *Hakuna '**ugali saucer'** bei ya unga inapanda.*

HT38. *Hakuna ugali wa kuongezewa huku bei ya unga ikizidi kupanda.*

'***Ugali saucer'*** is a slang that means '***additional ugali'*** used more especially in local eateries. Though it can only be correctly understood in that context, GT is unable to get an equivalent expression even for literal translation and so just uses it is in the ST. for someone who does not know the context of use for this expression, it may not make sense at all.

21.

ST 35. *Safari Rally breathes life into **sleepy** Naivasha economy.*

GT 35. *Safari rally yatia uhai katika uchumi wa Naivasha **wenye usingizi.***

HT 35. *Mbio za magari zaleta uhai kwenye uchumi wa Naivasha uliokuwa umezimia.*

Here, ***'sleepy'*** is translated to '***wenye usingizi'*** and ***'uliokuwa umezimia'*** by GT and HT respectively. '***Sleepy*****'** literally translates to ***'wenye usingizi'*** but when context comes into play, '***uliokuwa umefifia'*** is more appropriate to mean the economy *had*

been declining. Unless GT understands that 'sleepy' has been used as a figure of speech, it is impossible for it to render the expression correctly.

22.

ST 43. ***Mask up!*** *Kagwe now orders amid surge in Covid 19 infections.*

GT 43. ***Mask up!*** *Kagwe sasa inaagiza huku kukiwa na ongezeko la maambukizi ya COVID*

HT 43. *Vaa barakoa! Kagwe sasa aamuru huku kusambaa kwa Korona kukizidi.*

In GT rendering, '***mask up'*** remains the same as an equivalent expression has not been found. GT has completely failed to decipher the context of this item and so it has been unable to get a Kiswahili version for '***mask up'***. As a result, there is meaning loss because for someone who does not understand English, the Kiswahili translation may not make sense at all.

23.

ST 49. ***Game on as*** *Sakaja, Wavinya, Malombe get IEBC* ***nod to vie.***

GT 49. ***Game on as*** *Sakaja, Wavinya, Malombe wapata IEBC* ***nod to vie.***

HT 49. *Ushindani huku Sakaja, Wavinya, Malombe wakipewa kibali cha uchaguzi na IEBC.*

Once again, GT has not been able to get Kiswahili equivalents for '***game on as'*** and '***nod to vie'*** and therefore during translation, the expressions remain the same. If it had understood the context, it would probably have discovered a Kiswahili expression that gives an idea of what the ST means. This interferes with the meaning because one may not tell what exactly the GT rendering means.

Pragmatics entails how the interpretation and use of utterances depends on the knowledge of the real world. It stresses on the relationship among the utterances and the relationship between the speaker and the hearer, the context and the speaker's intention. If the pragmatic force is misunderstood, the communication fails.

The findings above are in agreement with the assertions by Kasimova and Safarova (2019) that errors associated with the translation of interjections can be said to be more pragmatic than linguistic. Subsequently, Pragmatic errors are critical elements in translation, since receivers have a tendency of realizing that they are receiving erroneous information. Interjections, for a long time have been granted peripheral role by several scholars including translators. It is presumed that semantic, pragmatic as well as the general communicative import regarding this category of words is minimal and can be ignored.

4.3.3 Grammatical Errors

Grammar is a set of rules that deal with the structure of a sentence in a language. It is the set of structural constraints that determine how different parts of a sentence fit in together in a particular language (Griffins, 2006). Rules of grammar deal with how to use parts of speech, person, tense, number, pronouns, possessive markers and word order.

Grammatical errors occur when one fails to follow grammar rules. These errors occur when the translation fails to render the meaning of SL intended grammatical elements to the element equivalences of the TL. When normative rules for constructing sentences are broken, a sentence may change meaning while in other cases, a sentence may not make sense at all. The following is a presentation of the identified grammatical errors. In this study, grammatical errors are grouped into: wrong tense, inappropriate pronoun insertion and inappropriate insertion of auxiliary verbs.

4.3.3.1 Wrong tense

Tense refers to the time when an action took place. It is used to refer to an event in the past, present or future. Tense errors involve using a verb tense that is not correct within the sentence or the larger context in which it is used (Baker, 1992). The errors discussed below emanate from mismatches in tense from ST to TT.

24.

ST11. *Serikali* ***yafidia*** *wauzaji unga rejareja*

GT11. *Government* ***to compensate*** *flour retailers.*

HT11. *The government compensates flour retailers.*

Focus is hereby given to the word '***yafidia' (compensates)*** which is in the simple present tense. GT translates it to '***to compensate'***, implying it is an action that is future oriented, which should not be the case as in the ST it is in the present. While the ST implies that the compensation has been done already, the GT means that plans are underway to do compensation but it has not yet been done. This is confusing because the target audience will not correctly get the tense the ST intended to communicate.

25.

ST18. *Utawala wa Uhuru* ***wang'aa*** *katika ujenzi wa barabara*

GT18*. Uhuru's administration* ***shone*** *in the construction of roads.*

HT18*. Uhuru's governance shines in road construction.*

'Wang'aa' translates to ***'shines'*** a verb which is in the simple present tense as rightly translated by HT. GT translates it to '***shone***' which is in the past tense. This then renders the wrong tense leading to loss of meaning.

When GT correctly translates a verb and renders a wrong tense, the TT may transmit the correct sense but mislead on the time when the action described by the verb as exemplified above.

4.3.3.2 Inappropriate pronoun insertion

In some instances, during translation GT inserts pronouns which were not originally there in ST. This not only introduces person (first, second and third) but also makes an otherwise passive sentence active. Below are some illustrations:

26.

ST8. *Matumaini idadi ya watalii watakaozuru Masai Mara ikiongezeka.*

GT8*.* ***I*** *hope the number of tourists who will visit Maasai Mara will increase.*

HT8*. Hope as the number of tourists visiting Masai Mara increases.*

The pronoun ***'I'*** which was originally not there has been included in the GT translation and this changes the word ***'hope'*** in the original statement from a noun to a verb in the GT rendering. The '**I'** brings about a word confusion. The original word, *matumaini* is *hope*. When ***I*** is inserted, it changes *matumaini* to *natumai* (I hope) and this drastically changes the original meaning. In the original text, the implied meaning is that there is already a noted increase in the number of tourists who will visit the Maasai Mara. However, in the GT translation, the implication is that so far there is no increase in the number of tourists but there are hopes that the number will go up.

27.

ST 25. *Ombi waislaamu wadumishe amani uchaguzi ukinukia.*

GT 25. ***I*** *request the Muslims to maintain peace when the elections are held.*

HT 25. *Muslims requested to maintain peace as elections draw near.*

Again, in this item the first-person pronoun singular '***I'*** has been introduced at the beginning. This makes the item to be in the active voice while it was originally active. So, an additional meaning which was not there in the ST comes up.

When a pronoun which was not originally there is inserted, it not only changes the person from third person in the source text to first person, but also the voice in the sentence. More often than not, the passive voice is changed to active.

These findings concur with Wang, Wang, Liu and Liu (2020) who indicate that grammar errors occur if a translated sentence violates the grammatical rules that guide or govern the target language. Grammar errors entail the absence of an agreement

between subject and verb, inappropriate verb variations, and improper declension of pronouns, nouns, or adjectives.

One thing that needs to be noted is that the human translator was not always right in translating all the samples. That is why there was the need to have four human translators for comparison purposes. The translation with the most accurate equivalents was chosen.

From the foregoing, there are a total of 27 errors identified. Of these, 11 are lexical,12 pragmatic and the remaining 4 are grammatical. This then means that lexical errors account for 41%, pragmatic errors 44% and grammatical errors 15%. This then implies that GT faced a greater challenge in deciphering the context of ST and was unable to render it accurately to the TT and that is why pragmatic errors were prevalent. The chart below summarizes this.

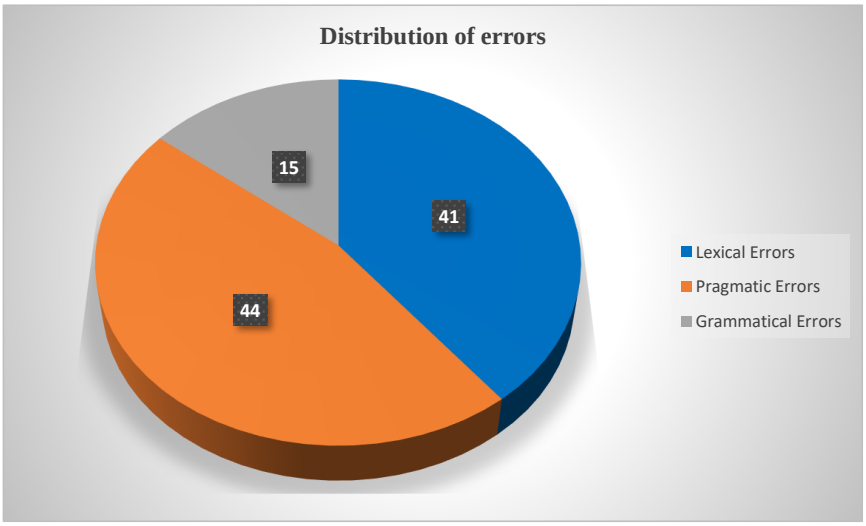

Figure 4.1 Distribution of errors

Figure 4.1 presents how the three types of errors discussed are distributed.

4.4 Accuracy of Google Translate Translations

The third objective of this study was determining the accuracy of Google Translate translations against their human translated equivalents. Google Translate (https://translate.google.com/) is conceivably the commonly used online translation platform. Over 500 million individuals from various parts of the world were translating over 100 billion words using the platform in 133 languages as of June 2023 (https://translate.google.com/). Although this study was concerned with studying GT errors against human translations, it does not mean that the human translator is perfect. It is the nature of humans to make mistakes and so human translators may not know enough, may sometimes confuse SL meaning and incorrectly render it into the TL or miss certain connotations and nuances (Robinson, 2011). In fact, GT translates a considerable number of headlines correctly, and in some cases, the translations have better constructions that the human translations.

The study established that, the human and Google translations may differ in the wording but still have the same meaning. The following are some illustrations:

ST 2: Mung'aro ***apumua*** *korti ikitupa kesi.*

GT 2: Mung'aro ***breathes a sigh of relief*** *as the court throws out the case.*

HT 2: ***Reprieve*** *for Mung'aro as court dismisses his case.*

Reprieve and s*igh of relief* mean the same thing. These are the GT and HT rendering of the word ***'apumua'*** respectively. So, even though the wording is different, there is no meaning loss.

ST 3: Walionusurika ajali ya mto Nithi ***wasimulia tukio*** *hilo.*

GT 3: Survivors of the Nithi river accident ***recount*** *the* ***incident.***

HT 3: Survivors of Nithi river accident ***narrate*** *the* ***ordeal****.*

'Wasimulia', is translated to ***'recount'*** and '***narrate'*** by GT and HT. These are near synonyms. In the same way, '***tukio***', is translated to '***incident***' and '***ordeal'*** respectively. As a result, the target audience will still get the message more or less exactly as the source audience.

This research focused on the communicativeness of the translated data. The findings revealed that some items such as figurative language exhibited meaning loss when making comparison between human and Google translations; however, the Google translated data did not deviate much from the meaning produced by the human translator. Based on the analysis of the accuracy of Google Translate translations against their human translated equivalents, the study found that overall, GT accurately conveyed correctly the meaning of 31/50 (62%) data examined. This implies that GT is 62% accurate in translating Kiswahili language to English and vice versa. Because GT supports so many languages, its accuracy depends on the specific language pairs being targeted by a particular study and the field being translated, whether technical or non-technical. It is projected that with the continued improvement of Google Neural

Machine Translation, machine translation might replace the human translator in many respects.

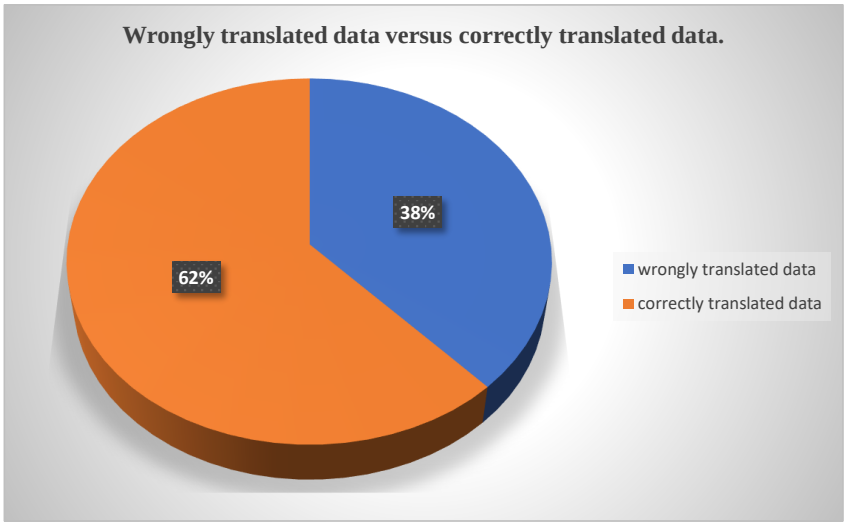

Figure 4.2 Distribution of wrongly versus correctly translated data

Figure 4.2 presents the percentage of the correctly translated data as well as the errors distributed in both English and Kiswahili. The correctly translated data is 31/50. This brings it to 62%. The erroneous data amounts to 19/50 items. This gives 38%.

It is worth noting that, though the margin is not too big, GT experienced more challenges translating Kiswahili data to English with 15 errors accounting for 56% while English data translated to Kiswahili had 12 errors accounting for 44%.

4.5 Discussion

Both English and Kiswahili have many instances of figurative language that can be difficult for Google Translate to accurately translate. Human translators who are

familiar with the figurative language in both languages can provide more accurate translations. Moreover, Kiswahili has many cultural references that may not exist in English, and vice versa. For example, the Kiswahili term "*harambee"* refers to a tradition of community fundraising in Kenya, which does not have an exact equivalent in English. Human translators who are familiar with the cultural context can provide more accurate translations of cultural references.

The study found that while Google Translate has made significant improvements over the years, it is not entirely accurate in all cases and can still make errors or produce awkward phrasing. Google Translate uses machine learning algorithms to translate text, which means it can struggle with nuances in language and context, resulting in inaccurate or unclear translations. As witnessed from the data presented, pragmatic errors are more prevalent.

In comparison to human translation, Google Translate is faster and more cost-effective, but it may not always produce the same level of accuracy or quality as a human translator (Poibeau, 2017). Human translators have a better understanding of the cultural context and nuances of the language, allowing them to produce more accurate and culturally appropriate translations. This is lower compared to the findings of a study by Jackson, Kuriyama, Anton, Choi, Fournier, Geier and Sun (2019) which examined the ability of GT to translate business sites, other literary texts as well as phrases used daily– from English to Italian, German, and Spanish and vice versa, comparing it with Google's translations with the know-how of true bilingual language specialists. Jackson *et al.* (2019) found that Google Translate struggled to translate colloquial phrases, with only a 72% accuracy rate on average across all languages analyzed, compared to 94% for business websites' content and 96% for literary text.

This is consistent with the Relevance Theory, which states that language processing involves the interaction between the linguistic input and the cognitive context of the receiver. This means that a translation must not only convey the same linguistic information as the source text but also consider the contextual factors that may influence how the target audience perceives and understands the message. Relevance Theory helped in identifying potential issues related to context such as pragmatic mismatches. Machine translation may struggle to accurately capture the intended meaning of a sentence or phrase that relies heavily on the context or the speaker's intentions.

Human translators, on the other hand, can take into account the broader context and adjust the translation accordingly to ensure that the target audience understands the intended meaning. Relevance Theory thus provides a useful framework for assessing mismatches between human translation and machine translation by highlighting the importance of considering contextual factors in language processing. By understanding how humans interpret language, we can identify potential issues and develop strategies for improving the accuracy and quality of translations.

Skopos Theory on the other hand was used to ensure that the purpose of the translation as well as inter and intratextual coherence. GT has to a greater extent been able to render the purpose of the translation as most items have been rendered correctly. However, in a few instances it has not been faithful to the ST as various instances of non-equivalence are witnessed as per the errors identified and discussed.

Great advancements have been made on machine translation and in Google Translate in particular, bringing about great improvements in automated translation. Though there is much debate about the quality of MT, the pros far much outweigh the cons (Cuc,

2018). The cost and speed cannot compare to that of humans as they translate with relatively less speed and the human translator is quite costly. Besides, there are so many languages that are represented on machine translation engines and many more are continually being added.

4.7 Summary

This chapter has presented and analyzed the data collected. The data is tabulated in three columns: Source Text, Google Translate Rendering and the Human Translator equivalent. From table 4.3, three types of errors have been identified and categorized into: lexical, pragmatic and grammatical errors. From the foregoing, out of the 50 items translated on GT, 19 items have been found to have translation errors. As a result, there is meaning loss when it is compared to the original text. The next chapter gives a review of the research findings presented. From these findings, conclusions, recommendations and suggestions for further research are given.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter captures a summarized overview of the research results recorded from the investigation in (sub-section 5.1), which is followed by the conclusion section in sub-section 5.2, while recommendations are under sub-section 5.3. Finally, suggestions for additional investigation are captured in sub-section 5.4.

5.1 Summary of the Study's Findings

The study was conducted to study Kiswahili and English translations on Google Translate and compare them with human translations. This was done with the intention of determining whether or not there would be mismatches between the human and GT translations. The study also used these mismatches to determine the accuracy of GT as a machine translation engine. Specifically, the study sought to identify errors that occur in Kiswahili and English translations on Google Translate against their human equivalents, categorize translation errors identified according to their type and determine the accuracy of Google Translate translations against their human translated equivalents.

Regarding translation errors in Kiswahili and English translations, the study found that the human translator was more accurate than a machine, though GT more often than not exhibited accurate and in a few instances, better translations than humans. In addition, sometimes, the human and Google translations were found to differ slightly in the wording but still had the same meaning. The study found that some of the items

considered exhibited meaning loss. The study came up with three types of errors and categorized them into lexical, pragmatic, and grammatical errors.

From the discussion above, it is very clear that GT has made translation easier and faster; nevertheless, it is not flawless because out of the 50 items translated on GT, 19 items have been found to have 27 translation errors. Though the margin is not too big, GT faced more challenges translating Kiswahili data to English with a total of 15 errors as opposed to translating English data to Kiswahili with a total of 12 errors.

Objective two sought to categorize translation errors identified according to their type. The study was able to categorize translation errors into three broad categories; lexical, pragmatic, and grammatical. The study indicated that lexical errors occur when a list or string of words belonging to a syntactic category contains errors associated with the wrong word choices that affect the text's meaning. If the result of the target text is incapable of identifying the corresponding word in the source text, then lexical interference occurs, distorting the meaning.

The third objective of the research was inclined toward determining the accuracy of Google Translate translations against their human-translated equivalents. The study established that the human and Google translations may differ in wording but still have the same meaning. The study findings revealed that some items exhibited meaning losses when making the comparison between human and Google translations; however, the Google translation did not deviate much from the actual meaning when considering human translation. The study found that overall, GT accurately conveyed correctly the meaning of 31/50 (62.0%) instructions examined. This implies that GT was 62% accurate in translating Kiswahili to English and vice versa. Because GT supports so

many languages, its accuracy depends on the specific language pairs being targeted by a particular study.

One common error that can arise is inaccurate translations of figurative language and challenges in deciphering the context. Machine translation engines like Google Translate rely on statistical patterns and algorithms to determine the most likely translation of a given text. However, figurative language can depend highly on context and cultural knowledge, making them difficult for machines to translate accurately.

Overall, GT has proven to experience hardly any challenges in making literal translations as almost all items that needed literal translations were correctly rendered. It was also able to correctly translate the grammar of the translated items. The grammatical errors were only four out of the 27 identified errors. This implies that GT has made great advances in being able to transfer the rules of grammar from one language to another.

5.2 Conclusion

Based on the findings, this study concludes that even though a machine is more efficient than a human being in translation because it is fast and less expensive (Robinson, 2019), chances are high that it could miss out on some details in the process. Translation requires two types of knowledge: grammatical and extra-linguistic. Machines such as GT may encounter linguistic problems or fail to have real-world knowledge, and as a result, there could arise mismatches in the rendering of the particular target language and the source language. The study also concludes that there are a number of errors related to Kiswahili-English and English-Kiswahili translations. These translation errors not only change the ST's meaning but also the ST's purpose is not delivered, and therefore miscommunication occurs. Since translation involves the transfer of meaning

from an SL to a TL, this must be done in the best manner possible in order to convey meaning as accurately as possible. If this does not happen, translation errors occur, leading to miscommunication.

Further, Google Translate is quick. It takes a very short time to get a translation once data is fed on GT. In fact, a human translator cannot compete with the speed nor, as a result, the quantity of translations that Google Translate is able to perform. In contrast, Google Translate is able to produce a translation with the same number of words in just seconds. The complexity of the text and any context that cannot be interpreted without a true knowledge of the language increases the likelihood of errors. Direct translation is common with Google Translate and sometimes results in nonsensical literal translations, while professional translators take great pains to ensure that this does not happen by using well-established online glossaries, back translation methods, proofreaders, and reviewers.

The study further concludes that the human translator is to some extent superior to most machine translation engines; however, the human and Google translations differ slightly in wording but still have the same meaning.

Finally, this study concludes that overall, GT is able to accurately convey correctly the meaning of 62.0% of Kiswahili-English and English- Kiswahili translated words, implying that GT is 62% accurate in translating Kiswahili to English and vice versa. Because GT supports so many languages, its accuracy depends on the specific language pairs being targeted by a particular study.

5.3 Recommendations

The study recommends that MT to adopt additional technologies to help it easily decipher the context and cultural nuances as well as the meanings in figurative

language. In some cases, use of these technologies cannot be strictly classed as just translation or interpreting, such as reading written machine-translated text out loud to communicate or using speech recognition to generate written translations. Professional human translators could also be incorporated to assist GT in the areas it might be deficient during the translations.

5.4 Areas for Further Research

The current study focused on Kiswahili and English translations on Google Translate and compared them with human translations, to determine whether there are mismatches between the human and GT translations. Future studies could consider incorporating more languages other than just English and Kiswahili and assess the level of accuracy.

In addition, as an extension of this project or perhaps a different project altogether, Kiswahili stop words need to be included in GT and Kiswahili name entity recognition, as this will be very useful when enabling automatic evaluation mechanisms. Finally, further work is required for more accurate output alignment and combining the output to ensure fluency and higher percentages of accuracy when using GT. Indeed, a recommendation for further improvement of this study is to explore the possibility of creating a round-trip evaluation mechanism to automatically evaluate machine-translation output.

REFERENCES

Arnold, D., Balkan, L., Meijer, S & Humphreys, R. L. (1994). *Machine translation: An introductory guide.* Blackwell.

Baker, M & Saldanha, G. (2009). *Routledge encyclopedia of translation studies*. London & New York: Routledge.

Baker, M. (1992). *In other words:* A *coursebook on translation.* (2nd Ed). Routledge.

Bassnet, S. (1980). *Translation studies*. London: Methuen.

Basnett, S. (2011). *Reflections on translation*. UK: Multilingual matters ltd.

Bell, R. T. (1991). *Translation and translating*. New York: Longman.

Brislin, R. W. (Ed) (1976). *Translation: application and research*. London.

Catford, J. C. (1965). *A linguistic theory of translation*: *An essay on applied linguistics* Oxford University Press.

Chandra, J., & Wahyuni, I. (2020, March). *Linguistic Errors Made by Students of English Education Program in Translating Indonesian Language into English*. In 7th International Conference on English Language and Teaching (ICOELT *2019)* (pp. 343-350). Atlantis Press.

Chomsky, N. (1965). *Aspects of the theory of syntax.* MIT

Corder, S. P. (1967). The significance of learner's errors.

Creswell, J. W. (2017). *Research Design: qualitative, quantitative and mixed methods.* (4th Ed). California: Sage publications.

Cuc, P. T. (2018). *An analysis of translation errors: A case study of Vietnamese EFL students.* International journal of English Linguistics, 8(1), 22-29.

Foster, M. (1958). *Translation from/in Farsi and English.*

Garces, C. (2008*). Translating for a purpose: The Skopos theory applied to the translation for minority languages.* (Studia University).

Gimode, J. (2006*). Mistranslation in English -Kiswahili church sermons: A case study of a selected Pentecostal church in Kasarani- Nairobi, Kenya.* (Master's thesis, Kenyatta University).

Goff-Kfouri, D. C. (2004). *Testing and evaluation in the translation classroom. Translation journal, 8*(3). Retrieved from http://translationjournalnet

Griffins, P. (2006). *An introduction to English Semantics and Pragmatics*. Edinburgh University Press.

Gutt, E. (1989). *Translation and relevance*. University of London.

Gutt, E. (2000). *Translation and Relevance: Cognition and Context.* St. Jerome Publishing, Manchester.

Hatim, B & Mason, I. (1990). *Discourse and the translator*. Harlow: Longman.

Hatim, B & Munday, J. (2004). *Translation: An advanced resource book.* London: Routledge.

Howell, S. (2018). *Ethnography*. University of Oslo.

http://www.hutchinesweb.me.uk/Compendium-16.pdf

http://www.research.att.com/projects/WATSON/

https://ai.googleblog.com/2020/06.

https://www.ethnologue.com.

Hutchins, J & Somers, H.L. (1992). *An introduction to machine translation*. Academic press, London.

Hutchins, J. (2004). *Machine translation: History of research and applications*. University of East Anglia.

Jackson, J. L., Kuriyama, A., Anton, A., Choi, A., Fournier, J. P., Geier, A. K., ... & Sun, R. (2019). *The accuracy of Google Translate for abstracting data from non–English-language trials for systematic reviews*. Annals of internal medicine, *171*(9), 677-679.

Jakobson, R. (1959). *On linguistic aspects of translation.* Havard University Press.

Kafipour, R & Jahanshahi, M. (2015*). Error analysis of English translation of Islamic texts by Iranian translators: Journal of applied linguistics and language research, 2(3), 238-252*.

Kandie, V. (2010). *Translation of neologisms: A case study of Kalenjin radio broadcasters.* (Master's thesis, Kenyatta University).

Kasimova, N., & Safarova, S. (2019*). Semantic, Syntactic, Pragmatic Equivalence In Terminology Translation.* Tafakkur VA TALQIN, 691.

Kathuke. M. K. (2019). *Translation errors in crowdsourced translations: An analysis of Kiswahili Facebook user interface content.* (Master's thesis, University of Nairobi).

Kay, M. (1982). *Machine Translation*. (American journal of computational linguistics).

Kemari, S. O. (2012). *The translation ability of Kiswahili graduate students*. (Master's thesis, Kenyatta University).

Kothari, C. (2003). *Research methodology and techniques.* Nairobi: Gupta limited.

Kotze, H. (2024). *Concepts of Translators and Translation in Online Social Media: Construal and Contestation.* Taylor& Francis online.

Larson, M. L. (1984). *Meaning-based translation: A guide to cross- language equivalence.* University press of America, Lanham, MD.

Laviosa, S., Iamartino, G., &Mulligan, E. (2021). *Recent Trends in Translation Studies*. Cambridge Scholars Publishing.

Lennon, P. (1991). *Error: Some problem of definition, identification and distinction*. Applied linguistics, 180-196.

Machali, R. (2000). *Guidelines for translators.* Pedoman Bagi Penerjemah. Grasindo.

Maniga, c. (2008*). An analysis of textual meaning in advertisements translated from English to Ekegusii.* (Master's thesis, Kenyatta University).

Munday, J. (2001). *Introducing Translation Studies, Theories and Applications*. Routlegde.

Munday, J.(ed). (2007). *Translation as intervention*. London: Continuum.

Munday, J. (2016). *Introducing translation studies: Theories and applications*. Routledge, London.

Mutua, D.M. (2017). *Error analysis in the translation of telecommunication devices: A case study of a mobile telephone data.* (Master's thesis, University of Nairobi).

Newmark, P. (1981). *Approaches to translation.* Oxford: Pergamon press.

Newmark, P. (1988). *A textbook of translation.* London: Prentice Hall.

Nida, E & Taber, C. (1982). *The theory and practice of translation*. Leiden: E. J Brill.

Nord, C. (1997). *Translation as a Purposeful Activity: Functionalist Approaches Explained.* Manchester.

Nord, C. (2005). *Training functional translators.* Benjamin's Translation Library.

Nyakundi, O. (2010). *Translation of figurative language in the book of proverbs in the Ekegusii bible.* (Master's thesis, Kenyatta University).

Odinga, J.N (2016). *An analysis of English-Kiswahili translation of sampled pesticides instruction leaflets.* (Master's thesis, Kenyatta University).

Olk, H. (2003). *Cultural knowledge in translation*. ELT journal, vol 57/2.

Onsario, R. (2009). *Challenges in translating English hymns into Ekegusii- a case study of Adventist church hymnal.* (Master's thesis, Kenyatta University).

Orago, S. (2007). *Meaning loss in literal translation: A case study of Dholuo riddles and proverbs.* (Master's thesis, Kenyatta University).

Poibeau T. (2017). *Machine translation.* The MIT press.

Pym, A. (1992). *Translation error analysis and interface with language teaching.* In C. Dollerup & A. Loddegaard.

Reiss, K., Vermeer, H. J. (1984). *Towards a general theory of translational action: Skopos theory explained.* Routledge.

Vermeer, H. J. (2000). *Skopos and Commission in Translation Action*. Routledge.

Robertson, P. (2019). *Re-overviewing Google Translate results and implication in language learning*. Asian EFL journal.

Robinson, D. (2011). *Becoming a translator: An introduction to the theory and practice of translation.* Routledge.

Salano, J.K. (2018). *An analysis of semantic and lexical errors of translating the New Testament from English to Kiswahili: A case study of Biblia Ya Mafunzo ya Uzima Tele*. (Master's thesis, University of Nairobi).

Selinker, L., & Gass, S. M. (2008*). Second language acquisition.* Lawrence Erlhaum Ass.

Somers (2003). *Computers and translation*. Benjamins.

Sperber & Wilson. (2012). *Meaning and relevance*. Cambridge university press.

Tarone, E., & Swierzbin, B. (2009). *Exploring learner language*. Oxford: Oxford University Press.

Venuti, L. (1995). *The translator's invisibility: A history of translation*. London: Routledge.

Wamitila, K. W & Kyallo, F. M. (2002). *English-Kiswahili assorted dictionary*. Focus books, Kenya.

Wang, Y., Wang, Y., Liu, J., & Liu, Z. (2020*). A comprehensive survey of grammar error correction*. arXiv preprint arXiv:2005.06600.

Wangia, J. (2003). *Aspects of mistranslation in the Lulogooli bible*. (Unpublished Doctoral Dissertation) Kenyatta University: Nairobi.

Wangia, J. I. (2008). *Morphophonological Issues in Translation: The Lulogooli Bible*. The Bible Translator, 59(1), 1-13.

Wilson, D. (2016). *Relevance theory.*

www.nationmedia.com

APPENDICES

Appendix I: RESEARCH QUESTIONNAIRE

Dear respondent,

I am a Master of Arts student at Kenyatta University and I invite you to fill out this questionnaire as part of my master's project. The questionnaire aims at investigating whether there are any discrepancies between human and Google Translate translations from English to Kiswahili and also from Kiswahili to English in selected newspaper headlines. The questionnaire will require an average of one minute per question to fill out. Thank you for taking your time to assist me with this research as it will greatly assist me in my research and enhance my understanding in the translation areas I am studying. The data collected will remain confidential and solely used for this particular academic purpose. Thank you so much for your time.

SECTION A: Bio data

1. Which languages are you proficient in?
   ……
   ……
   ……
   ……..
2. Which is your highest academic qualification?
   ……
   ……
3. What was your KCSE mean grade in:
   English……..
   Kiswahili……

4. i. Do you have any experience as a professional translator?

……
……

ii. If yes, how long have you worked in this field?

……
……..

SECTION B

Please translate the following Kiswahili statements into English

1. Gharama ya maisha yazidi kulemea raia.

   ……
   ……
   ……
   …….

2. Mung'aro apumua korti ikitupa kesi.

   ……
   ……
   ……
   ……..

3. Walionusurika ajali ya mto Nithi wasimulia tukio hilo.

   ……
   ……
   ……
   ……..

4. Wakenya wanunua unga kwa bei ya juu licha ya ahadi ya Rais.

   ……
   ……
   ……
   ……

5. Manung'uniko yazidi kuhusu uchafu na maji taka Mombasa.

   ……
   ……
   ……
   ……

6. Viongozi wa kiislamu wataka Magoha afutwe kazi kwa matamshi duni.
……
……

7. Uhuru awaaga marais kabla astaafu Agosti.
……
……
……
……

8. Matumaini idadi ya watalii watakaozuru Masai Mara ikiongezeka.
……
……
……
……

9. Furaha huku kiwanda cha Mumias kikianza kusaga miwa baada ya miaka kadhaa.
……
……
……
……..

10. Wawaniaji Azimio wakimbilia Raila.
……
……
……
……

11. Serikali kufidia wauzaji unga rejareja
……
……
……
……..

12. Maafisa watatu wa polisi wapatikana na hatia ya kumuua wakili Kimani.

……
……
……
……..

13. IMF yahujumu ahadi watoazo Ruto, Raila.

……
……
……
……..

14. Mwalimu kizimbani kwa kumnajisi mwanafunzi.

……
……
……
……

15. Magavana walafi kushinikizawalipwe mamilioni wakistaafu.

……
……
……
……..

16. Mume ashtakiwa kutisha kumteketeza mke wake

……
……
……
……

17. Raia wa Kenya wasichague wafisadi Agosti.

……
……
……
……

18. Utawala wa Uhuru wang’aa katika ujenzi wa barabara

……
……

19. Sonko amalizika kisiasa.

……
……
……
…….

20. Fedha: wakuu wa shule sasa waingia baridi.

……
……
……
……..

21. Mamlaka ya kudadarukia majanga yamulikwa kwa utepetevu kudhibiti hali Thika Road.

……
……
……
……

22. Sakaja aruka kiunzi cha mwisho.

……
……
……
……..

23. Mrithi wa Uhuru kuona moto.

……
……
……
……

24. ‘Vuta pumzi’ kuanza kazi leo Jumatatu.

……
……
……
……

25. Ombi waislaamu wadumishe amani uchaguzi ukinukia.

……
……
……
…….

SECTION C

Please translate the following English statements to Kiswahili

1. Jitters in Azimio over scheme to eliminate ‘weak’ cadindates.
   ……
   ……
   ……
   ……
   ……
   ……
   ……
   ……..
2. New scam claim adds twist in probe on murder of four suspects.
   ……
   ……
   ……
   …….
3. Ruto dangles bag of goodies in battle for PWD electors.
   ……
   ……
   ……
   …….
4. Don’t elect allies of land cartels, Uhuru says, launches titles drive.
   ……
   ……
   ……
   ……
5. Arrest skyrocketing cost of living and food prices.

……
……
……
……

6. Uhuru invited ghosts of Congo.

……
……
……
……

7. Tough battles as Kenya Kwanza team out to spoil Raila's party.

……
……
……
……

8. Traffic madness hits city on Green Park's trial run.

……
……

9. KWS on the spot as wildlife run amok.

……
……
……
……

10. Safari Rally breathes life into sleepy Naivasha economy.

……
……
……
……

11. Cash, crypto deals and four murders.

……
……
……
……..

12. Match political promises made on property to current realities.

……
……
……
……..

13. No more ‘ugali saucer’ as the price of flour soars.

……
……
……
…….

14. Do men have a biological clock? The best age to become a father.

……
……
……
……..

15. Battle lines drawn as race to succeed Wambora intensifies.

……
……
……
……

16. Numbers game: Mt. Kenya noisy debate on family size.

……
……
……
……

17. End of the road for Sonko as IEBC blocks Mombasa governor quest.

……
……
……
……..

18. Mask up! Kagwe now orders amid surge in Covid 19 infections.

……
……

……
……

19. Karua: don't fear selling Raila in Mt. Kenya.

……
……
……
……..

20. Sibling rivalry now rocks Kenya Kwanza campaigns.

……
……
……
……..

21. Fall of Sakaja.

……
……
……
……..

22. Pain as the cost of maize rises.

……
……
……
……..

23. Degree battle.

……
……
……
……

24. Game on as Sakaja, Wavinya, Malombe get IEBC nod to vie.

……
……
……
……

25. Let’s shun large families.

……

……

……

APPENDIX II: RESEARCH APPROVAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 26th September, 2022

TO: Esther Kisilu
C/o Literature, Linguistics & Foreign
Languages Department

REF: C50/27823/2019

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 14th September, 2022 approved your Research Project Proposal for the M.A Degree Entitled, "A Linguistic Analysis of Kiswahili – English, and English – Kiswahili Interface on Google Translate against Human Translations".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision tracking and progress report forms per semester. The forms are available at the university's website under Graduate School webpage downloads.

Also, please ensure that you publish article(s) from your project before submitting it to Graduate School for examination as per the Commission for University Education and Kenyatta University guidelines.

Thank you.

DR. HARRIET ISABOKE
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Literature, Linguistics & Foreign Languages Department
Supervisors:

1. Dr. Joyce Wangia
C/o Department of Literature, Linguistics & Foreign Languages
Kenyatta University

HI/lnn

APPENDIX III: AUTHORIZATION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: C50/27823/2019

DATE: 26th September, 2022

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR ESTHER KISILU - REG. NO. C50/27823/2019.

I write to introduce **Esther Kisilu** who is a Postgraduate Student of this University. The student is registered for M.A degree programme in the Department of Literature, Linguistics & Foreign Languages.

Esther intends to conduct research for a M.A Project Proposal entitled, "A Linguistic Analysis of Kiswahili – English, and English – Kiswahili Interface on Google Translate against Human Translations".

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

kk/ltm

APPENDIX IV: NACOSTI PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 189894

Date of Issue: 01/December/2022

RESEARCH LICENSE

This is to Certify that Ms.. Esther keli Kiilu of ., has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Makueni on the topic: A LINGUISTIC ANALYSIS OF KISWAHILI – ENGLISH, AND ENGLISH - KISWAHILI INTERFACE ON GOOGLE TRANSLATE AGAINST HUMAN TRANSLATIONS. for the period ending : 01/December/2023.

License No: NACOSTI/P/22/21074

189894

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions