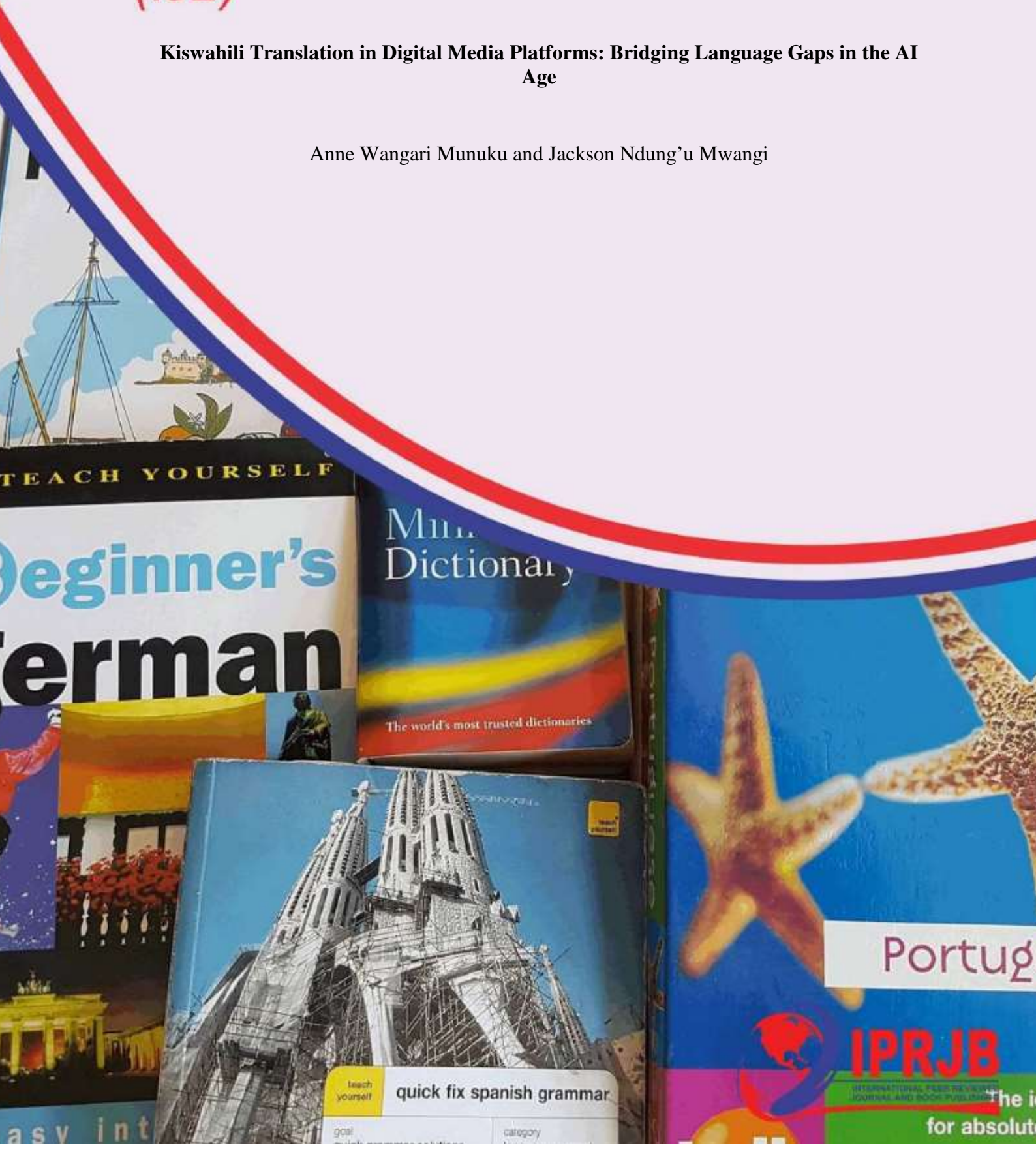



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Kiswahili Translation in Digital Media Platforms: Bridging Language Gaps in the AI Age

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**Kiswahili Translation in Digital Media Platforms:
Bridging Language Gaps in the AI Age**

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Abstract

Purpose: As digital media platforms continue to proliferate globally, the need for multilingual content in these platforms has become increasingly apparent. Translation of online content is a necessity for netizens and other digital platform users who seek knowledge and information around a myriad of user-generated content on diverse issues and topics. Being a widely spoken language that goes beyond the borders of East Africa, Kiswahili's significance in bridging linguistic barriers and facilitating communication and information access for Kiswahili speakers is clear. The purpose of this exploratory research paper was to examine the state of Kiswahili as a language of translation through different technologies across varied translation apps and social media platforms such as Facebook, You Tube, Tik Tok and Netflix.

Methodology: The study adopted a descriptive research design. Data collection was done through online data mining tools including API access for web scrapping and manual extraction of content through random search engine searches. The data for the study included 10 sentences, 10 videos and 25 specific word forms such as proverbs, spiritual/religious words, similes and cultural words for food, beauty and family ties. Content analysis for both text and multimedia content such as written sentences, social media posts and videos was done. The study analyzed translation outputs of 14 Kiswahili translation apps in order to establish the status and accuracy of these translations. Of key consideration was the role of AI technology in the translation apps and the effect it has on the translated texts across different apps. The challenges and emerging issues facing Kiswahili translation through digital technologies were also explored.

Findings: The findings of this study showed that the Apps used for Kiswahili translation have demonstrated great translation accuracy in basic semantic forms, with an average score of 60% accuracy upon random searches and between 10-30% accuracy for cultural forms and idiomatic expressions.

Unique Contribution to Theory, Practice and Policy: The study was guided by the Skopos theory by Hans Vermeer (1978) which was complemented by the Relevance Theory by Dan Sperber and Deidre Wilson (1986). These Apps seem to have the feature of interoperability in that they seem to produce the same results suggesting that the AI supported feature in the apps may be interconnecting the apps during translation. The study advocates for more AI integration translation apps as this will help standardize Kiswahili translation corpus.

Keywords: *Digital Media, Translation, Translation Apps, AI-Driven Apps, Social Media, Digital Technologies*

JEL Classification Codes: *L86, Z1, L82*

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INTRODUCTION

The digitization of media and communications in general has revolutionized the way information is created and shared around the world. Digital media platforms have become an integral part of information sharing through activities such as social media networking, e-commerce, online teaching and learning, content creation and sharing and video streaming. The fast growth of the creative economy has given rise to different ways of expressing thoughts, ideas and opinions in the highly connected global networking platforms. The internet of things concept, which according to Hanlon (2019) depicts high internet-based connectivity and interactivity between smart devices that have sensors and processors, has enabled communication to happen anywhere anytime. Literally, the power to communicate beyond temporal and spatial borders is in our hands. Technologies driven by Artificial Intelligence (AI) are directing transformative technologies in different fields including translation and interpretation.

The term translation can be traced back to the word '*translatio*' in the Latin language, which means reconstruction of meaning from one language system to another (Okal. 2018). Translation scholars such as Catford (1965), Mono, Saragh and Lubis (2015) define translation in different ways. Catford (1965) describes translation as the exercise of transferring thoughts in written form from one language to another while ensuring equivalence of meaning in both languages. He emphasizes that translation is not just about changing the language of communication but it must ensure that the originality of meaning in the translated text (henceforth, TT) is maintained. Mono, et al (2015) posit that the process of translation involves the description of a message presented in one language in another language while preserving the original meaning and style of the source text (henceforth ST). These two scholars seem to agree on the concept of equivalence for valid translations. Their definitions of translation focus on interlanguage transfer of meaning through the process of getting appropriate equivalents.

Venuti (2000), on the other hand, explains the process of translation by describing the three levels of language where translation takes place. He describes three types of translation: intralingual, interlingual and semiotic translation. Interlingual translation is the most understood form of translation. It involves transferring meaning from one language to another e.g. from English to Kiswahili. Intralingual translation on the other hand, is not widely discussed. It is the form of translation that takes place within the same language. It involves interpretation of concepts and transfer of meaning from verbal to visual texts and vice versa. Semiotic translation is the symbolic transfer of meaning that may take place between languages (interlingual) or within a particular language (intralingual). This may include the use of sign language to transfer meanings in spoken discourse such as during simultaneous interpretation on live broadcast or in the more recent past the use of *emojis* in place of words in digital media communications such as in WhatsApp or Facebook messaging. The description of translation provided by these scholars shows that translation is not just about transferring meaning but should be understood in its entirety as a process that seeks to achieve full understanding of concepts in different languages and language forms or codes. This is why Kucis & Selijan (2014) posit that translation is a complex process that is made up of many sub processes and tasks. They argue that translation should not just be perceived as linguistic transcoding, but must also include functionality of the TT.

Translation, then, is to be understood as both a field of study and a practice that is identifiable through practitioners in well-defined communities of practice. These include journalists,

communication practitioners, teachers, freelance/career translators and even marketers who promote their market offers in diverse languages globally. As a field of study, translation is a well-researched area that has different approaches in scholarship and has a long history dating back to the invention of writing especially in the Greco-Roman era. For example, Cicero and Horace discussed translation as early as the 1st Century BCE. The Bible was also translated from Greek to Latin as early as 4th Century CE by St Jerome (Xiaoyan, 2012; Bandia& Bastin, 2006). Translation developed into an academic discipline other than a language learning practice in the 16th Century. Translation has since grown into a vibrant academic field defined by scholarly activities such as teaching, training and theorizing in higher education institutions. Translation for language learning that was practiced in the Greco-Roman times has been rediscovered through the digital apps as this paper seeks to demonstrate. For instance, most of the translation apps in digital spaces are used for self-learning of different languages for business, academic, cultural or tourism causes. Based on the different ways in which translation is defined by scholars and used in society, we argue that translation is itself an act that is actualized within the practice of translation. That is, translation can be described as the act of transferring meaning from source text to the receiving language text while ensuring functionality and accuracy of the TT. This study seeks to contribute to this paradigm of translation studies.

Translation as practice happens in fields such as diplomacy, communication (whether formal or informal), journalism, business, entertainment, education, among others. Digital translation is one type of translation in practice since it involves the transfer of meaning in texts created and shared in different digital platforms and sites. This kind of translation may be done manually by professionals or through computer aided tools (CATs) that use software and programmes installed in digital technology-based gadgets such as computers, iPads, tablets and smart phones. Machine aided translation and online-based translation must have these gadgets connected to the internet through the World Wide Web.

In the digital spaces, information creation and sharing is done through videos, podcasts, emails and reactions or co-creation of online content from digital media creatives. This content is available to users on demand, more so through access platforms such as mobile phones. For example, Kenya's popular entertainment video streaming platforms like Viusasa and Viutavel. The digital revolution brought about changes in the communication world precipitated by such factors as market changes especially promotion of products, commercialization of translations through multilingual service provision, development of electronic dictionaries and glossaries for different terminologies as well as the emergence of computer-assisted translation tools (CATs). This development has not only democratized information sharing but it has also highlighted the role of linguistic diversity in online communications. There are many languages involved in these online translations. There are over 100 language pairs in the different digital platforms involved in translation. Social media sites such as Facebook, X, Tik Tok, Instagram and WhatsApp have transformed information creation and dissemination among the increasingly tech savvy users. These netizens use different languages to pass information. Other important platforms where there is language diversity are entertainment-streaming networks such as Netflix, Spotify and You Tube. It is important to note that though most social media platforms are meant for entertainment, there is a lot of educative content disseminated in an array of languages. This may include medical, scientific and academic content. This diversity calls for translation of information into different search engine languages, hence the fast growing need for online translators who have the ability to use computer aided translation

tools. Users of these search engines simply type ‘*translate text*’ when they want to access information in a different language and promptly receive the TT.

Other useful online platforms where translation applies are those used for trading and marketing, specifically e-commerce activities. E-commerce activities refer to the business of selling and buying or transacting goods and services online. These include Amazon, Kilimall, and Alibaba. E-commerce platforms in Kenya include Jiji.ng/jiji kenya, Kilimall-Affordable Online Shopping, MYDAWA, Masoko (by Safaricom), Cheki Kenya, Autocheck, Gadzone, Sky Garden, Avechi, Jamboshop.com, jumia.co.ke, phoneplacekenya.com. In Tanzania, we have platforms like Kaymu.co.tz, Kivuko.com, Jumia.co.tz, Inauzwa.com, and Shopping.co.tz. In Uganda, we have platforms such as Jiji Uganda, Jumia Uganda, Kikuu Uganda, Masikini, Condala, U-Buy Uganda Limited, Xente Tech Ltd, OdukarStore, OnDuka, Kikuubo Online, Sefbuy, Soko.ug Online Shopping, TilyExpress, Smartfamingug.com, Kweli.shop. In Rwanda, we have Shopify, Kaymu, Lamudi, Jovago, Beauty of Rwanda.com, Carisoko, Ntuma and Hellofood. Burundi has Kukasoko, Ilani Concepts, Burundi en Temps Reel, Oversoft, Custom Cart, Odoo, Shopify, Opencart, Ecwid, Magento, Prestashop, SHOPLINE, WooCommerce and Wix. These e-commerce Apps, including those with Kiswahili names, have their content in English yet they are meant to serve the East African market whose official language of wider communication and business is Kiswahili.

Language diversity is therefore an important aspect of digital communications since online content is shared through different languages. Besides having linguistic and cultural competence in the languages of translations, translators are expected to have specific translations skills in communication technologies and machine aided translation tools. An understanding of translation resources, glossaries, corpora and memories is critical for translators in the digital age (Kucis & Seljan, 2014). Among the diverse array of languages of international stature, Kiswahili stands out as one of the most widely spoken languages in Africa with over 160 million speakers (Mutiso, 2016).

Kiswahili is the lingua franca in the linguistically vast region of Eastern Africa. Prof. Kiango, while speaking at the CHAKAMA 2024 conference in Dodoma, explained that Africa has 28 recognized lingua francas but all of them, apart from Kiswahili (spoken in East, Central, and Southern Africa, and in many places outside the African continent as a foreign language) and Hausa (spoken in 12 countries in West Africa), are confined within their specific national borders. This makes it an important language of wider communication, business, diplomacy and a crucial tool for sustainable development in the East African region. Kiswahili is one of the leading languages in the world alongside international languages like English, French, Spanish, Mandarin and Arabic. In this era of globalization and information sharing, these widely spoken languages continue to grow as important lingua francas in the internet communication space. Globalization catalyzed the growth of information sharing as people sought connection in various fora such as tourism, education, business and diplomacy. This in turn has catapulted the translation needs across different digital spaces. Languages that served as international lingua francas became important translation languages. For instance, Kiswahili is paired with tens of other languages in digital translation apps. These languages include English, Chinese, Arabic, French, German, Turkish, Italian, Chichewa, Urdu, Spanish, Amharic, Zulu, Indonesian, Portuguese, Hindi, Telugu, Lingala, Kikuyu, Sindhi and Luganda. This list is however not exhaustive.

Social media platforms such as X, Facebook and Tik Tok are fast becoming an important driver of Kiswahili growth as an online language of communication. There are many standard Kiswahili blogs and other platforms including the language learning apps developed by Kiswahili scholars. Such fora include SwahiliHub, SwahiliPothub, SwahiliBox, SwahiliPod101, Utafiti Online, Usuli blog, among many others. Kiswahili is also widely used as a language of communication in social media platforms. These platforms use a distinct code of Kiswahili as part of netspeak or internet lingo. Internet lingo though unique in character has accommodated Kiswahili albeit as a code mixed with English. In Facebook, for example, it is difficult to find pure standard Kiswahili sentences. The East African informal way of communicating is characterized by a fine blend of Kiswahili and English words. Jagero, et al (2013) explain that the new language of the internet known as “netspeak” has greatly influenced the use of Kiswahili language in the internet. For instance, there is a lot of codeswitching, non-standard abbreviations and grammatical mistakes in blog content. Kenyan internet users and content creators use netspeak and will rarely engage in standard Kiswahili translations especially in social media. Most of the content uploaded online is user-generated, meaning that netizens (online communities and users) upload content, which may be original, curated or translated. According to Jagero et al (Ibid) most of the content found online is electronically mediated and hence bears special properties. This is what has come to be distinguished as internet lingo. This paper seeks to find out what role Kiswahili plays in digital media translation which, considering the aforementioned properties of internet-based communication, would be interesting to investigate.

Statement of the Problem

Kiswahili holds enormous potential in the digital media platforms. Kiswahili can contribute greatly to access to information, cultural integration and faster social economic development through the creative industry. Content creation is one of the most impactful employment platforms for the youth especially through social media sites like Facebook and Tik Tok. These platforms have increasingly witnessed growth in user generated Kiswahili content as more and more East African content creators disseminate their content, including teaching, in Kiswahili. Content creators sometimes make use of the many language specific apps online to translate content fully or partially. For example, English-Swahili, Swahili-Chinese, French-Swahili, Chinese-Swahili and many others, where translation of Kiswahili texts to the specific language or the other language to Kiswahili is done.

There are numerous websites, blogs, social media sites and language learning apps where translation of Swahili across different languages. Tens of apps and individually owned platforms are involved in translation of Kiswahili texts. Many of these translation apps are AI driven. There are many AI translation apps including DeepL Translator, ChatGPT, AI Cam Translate, AI Translate and AI Voice Translator. As these AI apps are being developed, AI detectors are also coming up. The apps can detect work that has been done by machines or robots and differentiate it from work done by humans. Such apps include Quillnot, Scribbr, AI Detector and many others. There is no limit to how much AI can do or undo as machine algorithms become more and more advanced. This study focused on Kiswahili translation in digital platforms, specifically content analysis of translated texts in the selected platforms.

The study aimed to determine the extent to which these apps and the social media platforms including those using AI technology such as AI powered machine learning are involved in translation of texts to Kiswahili. The main goal was to check the extent to which Kiswahili has

penetrated the digital spaces through translation and what the trends of Kiswahili translation are. The study sought to answer the following questions: To what extent are digital media apps and platforms contributing to the field of translation in Kiswahili? To what extent are the Kiswahili translation Apps using AI? What is the state of translation outputs for digitally translated Kiswahili texts? What are the emerging issues and challenges in digital translations in this era of AI?

Theoretical Framework

The Skopos Theory formulated by Hans J. Vermeer (1978) and, the Relevance Theory of Translation by Dan Sperber and Deidre Wilson (1986) guided this study. The two theories are complementary with Vermeer's theory emphasizing translation with a purpose, and the Relevance theory proposing the communicative ability of texts through relevant cognition of texts. Generally, translation theory has traditionally emphasized three basic principles of translation. These are that: the texts should be communicative; texts should have clarity of meaning; and, texts should maintain originality upon translation. Besides these features, the concept of equivalence in translated texts is greatly emphasized. In reality, however, equivalence of meaning is rarely absolute or perfect. Most words or phrases used in the translated text (henceforth, TT) are estimates based on the basic meaning of the word or context of use. Vermeer (1978) recognized this loose end in the practice of translation and developed a new approach to translation. His approach falls under the functionalist tradition. He calls the approach the *Skopos Theory*.

Vermeer's approach is expressed as the Skopos rule that has six sub rules. *Skopos* is a Greek word that means 'purpose' or 'aim'. According to this theory, the purpose (skopos) of a text determines the method and strategy of translation. The result is the Translated Text (TT), which Vermeer refers to as '*translatum*'. Vermeer opposes the traditional equivalence-based theories, which speak of source text or its effects on the source text reader or the purpose of the source text author as being the decisive factor in translation. He insists that the premise of translation should be the purpose. According to Vermeer, translation is a complex action with a purpose. He describes aspects of translation in terms of the status of the source text and the target text, their relationship, the concept of translation, the role of the translator, translation standards and strategies. Previous theories of translation were source text-oriented but Skopos view looked at translation as action and, just like all actions have purpose, translation has purpose (Xaoyan, 2012). Therefore, Vermeer explains the act of translation as '*to produce a text in a target setting for target purpose and target addressees in target circumstances*'. The Skopos rule of translation is summarized thus: *Translate/interpret/speak/write in a way that enables your text or translation to function in the situation in which it is used and with the people who want to use it and precisely in the way they want it to function*'. The theory's tenets touch on aim, purpose, or intentionality of translation, intertextuality and intratextuality, culture and adequacy. Perhaps this thesis of the Scopos theory is what makes it quite relevant to any study that analyzes online discourse translations. Digital communications exhibit unique rules of language and translation of these texts would be that which serves their purpose and diversity. The Skopos theory is summarized into six rules which are organized in a hierarchy and which according to Vermeer (ibid) are subordinate to the Skopos rule stated above: a *translatum* (TT) is determined by its skopos; a TT is an offer of information in a target culture and target language (TL) concerning an offer in the source culture and source language; a TT does not initiate an offer of information in a clearly reversible way; a TT must be internally coherent

with the source text (ST); a TT must be coherent with the ST; and, the five rules above stand in a hierarchical order with the skopos rule predominating.

The relevance of this theory in the study is through the application of the Skopos Rule; that every translation has a purpose. The Apps and digital platforms studied are all engaging in translation with purpose. There are business/e-commerce translation Apps, language learning or teaching Apps, Travel or tourism translation Apps and so on. This paper agrees with Vermeer's view that translation is an action with a purpose. In this era of digital technology transformations and AI-powered activities, translation can be taken as a digital activity that seeks to globalize knowledge, general information, and entertainment and through diverse language interactions. This translation is purposeful and the outcome (translatum) is democratization of language, growth of previously confined languages, empowerment of languages in terms of terminologies and communicative abilities, culture and information sharing. Translatum in the form of translated texts is enabling globalization of all aspects of our lives.

One weakness with the Skopos theory is that it does not take into consideration the linguistic nature of the ST nor the reproduction of the micro level features in TT. It may also be inadequate at the semantic and stylistic level, hence the need to complement it with the relevance theory. Dan Sperber and Deidre Wilson first developed the Relevance Theory in 1986 in their book, *Relevance: Communication and Cognition*. It focused on communication and cognition. Their student, Gut, further developed it in 2000 where he incorporated aspects of translation in his book, *Translation and Relevance: Cognition and Context*. Gut posits that translation is a verbal behaviour and an inference process that is closely related to the brain mechanism.

Translation not only involves codes in the form of languages and symbols but also a dynamic inference based on dynamic contexts anchored on relevance. In this theory, relevance is defined as proportional to the amount of contextual effects and inversely proportional to the processing effort required to recover these effects. Individuals explore different assumptions relevant or manifest to them. This theory highlights the possibility of encountering segments of a text that may be particularly difficult to translate. A good example would be cultural texts and proverbs. The main concepts of the theory include context, which refers to the cognitive environment of the hearer. This may mean that a single sentence can acquire different meanings in different contexts.

While describing the key concepts of the Relevance theory, Liu Xin (2023) extrapolates the notion of optimal relevance, which refers to the relevance of every stimulus of communication. A stimulus is optimally relevant if it is relevant enough to be worth the audience's processing effort; and, it is the most relevant one compatible with a communicator's abilities and preferences. The happening of communication is by stimulus and this is important in translation because the essence of translation is communication. The relevance theory regards communication as a kind of cross-language communication. Relevance in translation is achieved with correct understanding of the source language. The relevance theory complements the Skopos theory by adding the concept of communicative relevance of texts. Digital translations should ideally produce texts that are relevant to the target recipients. These texts should not just transfer meaning as originally intended, but must speak to the context of communication. These two theories will be used to analyze the relevance, communicative ability and purpose of the selected translated texts.

METHODOLOGY

The research employed qualitative research design. The study took an exploratory approach that aimed to find out the use of Kiswahili translation across different platforms. Qualitative analysis was more appropriate considering the fact that the research involved words and phrases and not numbers. Qualitative analysis also addresses quality and context, an important aspect in translation. Data collection involved online data mining through generation of translated texts from different apps. Words, phrases, complete sentences were uploaded onto the search engines through select apps for translation, and then extracted the generated text. The researcher had the option of using different search engines such as Bing, Google and Yahoo!, but Google was selected for data mining due to its scope and large language corpora database. Contextual and textual analysis of data was employed.

The focus was on how different apps and digital platforms are used for Kiswahili translation. 14-language translation apps, four (4) social media networks and 16 e-commerce apps were sampled for the study. The language apps were sampled from the first 35 Apps that appeared on a random search for Swahili translation apps on Google. The e-commerce Apps were geolocated based on the country. Forty eight (48) apps were generated through random app search and the 1/3 sampling rule applied bringing the sample to 16. That is Uganda -5 Rwanda -5, Kenya – 4, Burundi – 5.

Content analysis was used for organization and categorization of data. Since the study analyzed specific language forms analyzed in different platforms and apps, it was necessary to come up with a categorization framework that would guide the process. There are no set standards of evaluating translation quality leading researchers to rely on their own judgements of right and wrong or appropriate and inappropriate (Kucis and Selijan, 2014). This study steers away from reliance on binary analysis of errors only to a thematic organization of key concepts based on specific communicative aspects of language was done. Cross language equivalence is important especially for languages that are culturally different (Larson, 1984). Error analysis was based on aspects such as omission of words, deviation of meaning, modification of meaning, syntactic structure, over translation and the overall communicative ability of the translated texts. Textual analysis was done by categorizing words, phrases and sentences under different themes such as cultural, family ties or relationships, basic lexical terms used in ordinary day to day communication and proverbs. The analysis involved the identification of accuracy or error in the selected texts.

Specifically, sampled apps were used to translate six randomly constructed Kiswahili sentences. These sentences were based on themes like cultural/religious beliefs, proverbs and day-to-day communication. Words under these categories were subjected to translation under the selected apps and social media apps. The words and sentences sampled under different platforms and apps (social media and translation apps) were translated into Kiswahili. After translation, sentences and words were checked for accuracy. The thoughts behind the Skopos theory and the Relevance theory guided the study. Data was then presented in pie charts and tables after analysis and interpretation.

Kiswahili Translation in Digital Media Platforms

The Use of Translation Apps in Kiswahili Translation

Hundreds of apps are used in the translation of texts in a large number of languages online. This study sought to answer the question: to what extent are digital media apps contributing to

the field of translation in Kiswahili? Most of the apps used in translation are programmed to operate with language pairs. For instance, Kiswahili is paired with tens of languages in translation apps including English, Chinese, Arabic, French, German, Turkish, Italian, Chichewa, Urdu, Spanish, Amharic, Zulu, Indonesian, Portuguese, Hindi, Telugu, Lingala, Kikuyu, Sindhi and Luganda. Due to linguistic barriers faced by the researchers, and in order to avoid an unmanageable volume of data, the study only focused on English-Kiswahili translation apps.

Upon a random Google Search, the researcher generated 35 apps that are involved in the translation of Kiswahili. These apps bear different names depending on the translation purpose. For instance, *Let Us Learn Swahili*, *iTranslate*, etc. Out of these 35 apps, the study sampled 14 such apps focusing on the popularity and features such as voice recognition and availability of Swahili language corpus including words, phrases and sentences. Another important element of interest was the presence of AI-powered translations. The apps included in the sample include Notta, Google Translate, Microsoft Translator, iTranslate, SayHi Translate, Triplingo, Pimsleur, Reverso, Babylon, Linguee, Waygo, Duolingo and Babbel.

The sampled apps were all found to use machine translation algorithms to transfer texts. These apps were also found to have audio translators for text to speech translation and voice recognition albeit at different levels of ability. 10 out of 14 or 71.4 % of the sampled apps had the voice recognition feature. Other apps like Google Translate provide pronunciation guides for sentences and phrases and are able to recognize handwriting. 10 out of 14 of these apps, which translates to 71.4% percentage as shown in the pie chart below, have dictionaries and phrasebooks that can be used for language learning. 35.7% of the apps i.e. 5 out of 14 have language learning abilities. These include Duo lingo, Babbel, Pimsleur, Linguee and Google Translate. Only 2 out of 14 apps had cultural forms translation ability. This translates to 14.3% Three (3) out of the 14 translation apps i.e. 21.4% are AI-powered. These are Natto, Microsoft Translator and Lingvanex. These apps translate texts without human intervention. The new trend is the use of AI apps to execute not just translations but also other forms of communicative texts. In this AI era, a lot of translation apps are being developed. Examples are Copy.ai Translator, Smartling Translate, DeepL Translator, Microsoft Bing Translator, Google Translate, Smartcat, QuillBot AI Translator and KUDO, which is able to translate speech simultaneously. These AI-powered apps can translate big data including documents, speeches, audio and visual scripts like videos. AI can generate captions and subtitles for videos making content creation in different languages easy. The figure below shows the sampled translation apps features and abilities in the translation process.

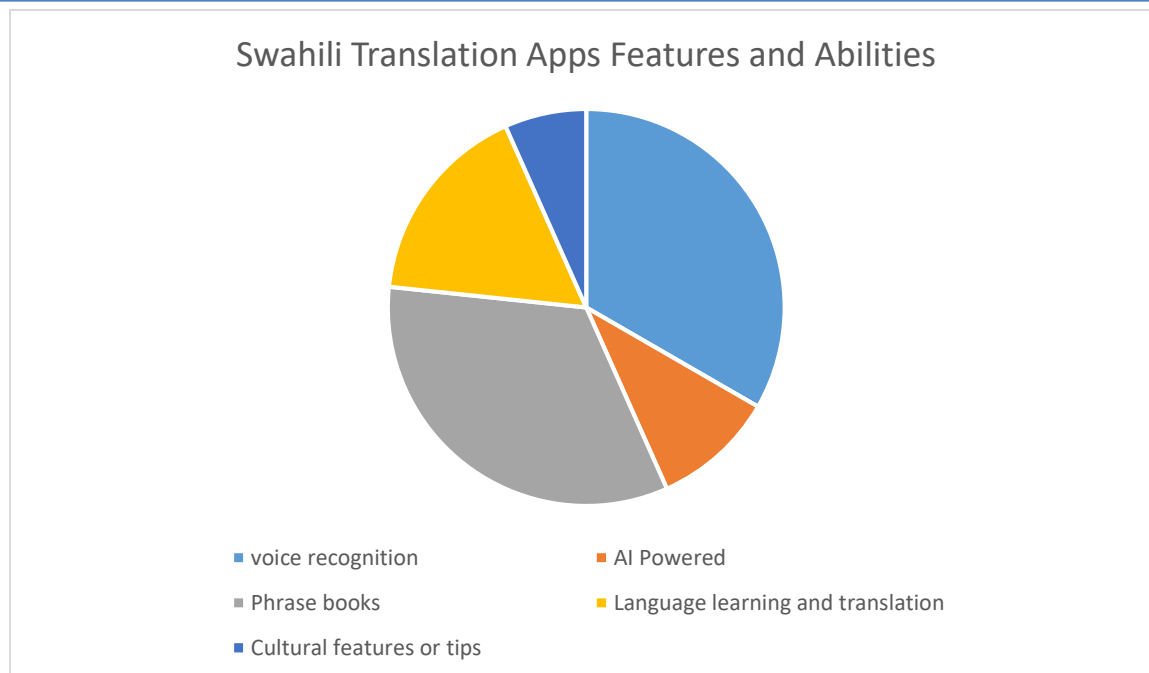


Figure 1: Translation Apps

The apps were tested for accuracy, relevance and communicative abilities by inputting words and sentences under different themes such as day to day usage, proverbs, words with spiritual meanings and names of different types of food. The translatum (TT) was classified as either poor, good or fair. This is because the translated text uses Kiswahili lexical forms but may have a few words that are inaccurate or just estimated equivalents.

Sentences

Ten (10) Kiswahili sentences were subjected to translation in the translation apps. Some had fair translations while other apps had no matches. Translation outputs were varied across apps. However, some apps such as Google Translate seemed reliable in the translation of basic words within sentences but challenged when words were used in specialized contexts such as the different ways of stating time between English and Kiswahili. For example the sentence,

- Kiswahili (ST): *Hajachelewa kufika ila tulimtarajia aje saa tatu kama ilivyo kawaida yake was*

English (TT): He did not arrive late, but we expected him to come at *three o'clock as usual.

Saa tatu refers to nine o'clock in Kiswahili. This mistranslation due to deviation of meaning renders the sentence miscommunicative. Another example is:

- Kiswahili (ST): *Chamcha kilinoga ingawa mgeni alikatiza safari bila kutarajiwa.*
English (TT): *Chamcha *kilinolo* although the *stranger *disrupted the journey unexpectedly.
- Kiswahili (ST): *Ninapenda kula vyakula vya kienyeji kama vile dagaa na sima, mnavu, mchicha, mhogo na magimbi.*
English (TT): I like to eat local food such as seafood, *sima, *spinach, cassava and *magimbi.

A word like *chamcha* is a blend of three words – *chakula cha mchana*, which Google could not pick, meaning it is lacking in the corpora same as *mchicha*, *sima* and *magimbi*. There is no verb like **kilinolo* in the Kiswahili language. Google translate got 50% of the translations accurate, that is 5 out of 10 the sentences searches. Wrong word or deviation of meaning was observed in 6 cases out of the ten sentences making it 60%. Sentences of this nature are uncommunicative due to meaning transfer. In cases where the apps could not translate, identical words appeared in both source and target texts. There were 3 such cases in two sentences. Out of the 14 apps, three seemed to obtain matches 60% of the time while 9 produced no matches 90% of the time upon random searching. Another observation was that the apps seemed to rely a lot on Google Translate, iTranslate, Wordpress and Duolingo for the translations such that the sentences produced would usually match. This is due to the interoperability of digital apps and AI generated searches that are able to pick translated texts across different apps. Most of these digital media translations seem to rely on apps that are programmed using a limited corpus and therefore they tend to miss semantic, stylistic and pragmatic or contextual uses of language. For example, the Kiswahili sentence below was translated from English on iTranslate and Google Translate:

Kiswahili: *Haya yanajiri miezi michache baada ya habari za mvulana mmoja *kugonga vichwa vya habari kwa kumuiga rais *aliyechelewa (*kugonga vichwa vya habari is direct translation)*

- iTranslate: This is **hiring* a few months after the news of one boy hit the headlines **by* imitating the late president.
- Google Translate: This comes a month after news of a boy making headlines for **impersonating* the late president.

In the example above, ‘*kujiri*’, which means ‘to happen’, takes the semantic form ‘*kuajiri*’ which means ‘to hire’. The word ‘*late*’ is translated as in the semantic form of ‘*time*’ instead of ‘*death*’. ‘*Kuiga*’ means *imitate* and *impersonate*. Therefore, the entire English sentence is distorted. In this case, there is deviation of meaning or wrong lexical choice. The implication of these errors is that the translated text then loses its communicative ability and fails to serve the purpose intended. In some of these cases meaning is totally lost such as in the case where a non-existent word is used as an equivalent.

Cultural Lexical Elements

Proverbs

In order to test cultural relevance and accuracy various cultural forms of language such as names of foods, jewelry, proverbs and religious beliefs were tested. The researcher randomly selected 7 proverbs. Ten commonly used proverbs were subjected to translation on the 14 apps sampled. Upon random searches from the 14 apps, sampled 10 proverbs were translated. Google translate seemed to have the most accurate translations. 3 out of 14 (21.4%) apps were observed to have interoperability possibly from the fact that they are AI enabled and can generate translated texts across different apps.

The following pie chart shows the binary classification of translated texts quality i.e. either accurate or inaccurate. Out of the 10 proverbs translated, 3 (30%) were accurately translated while 7 were inaccurate making it a 70% occurrence rate.

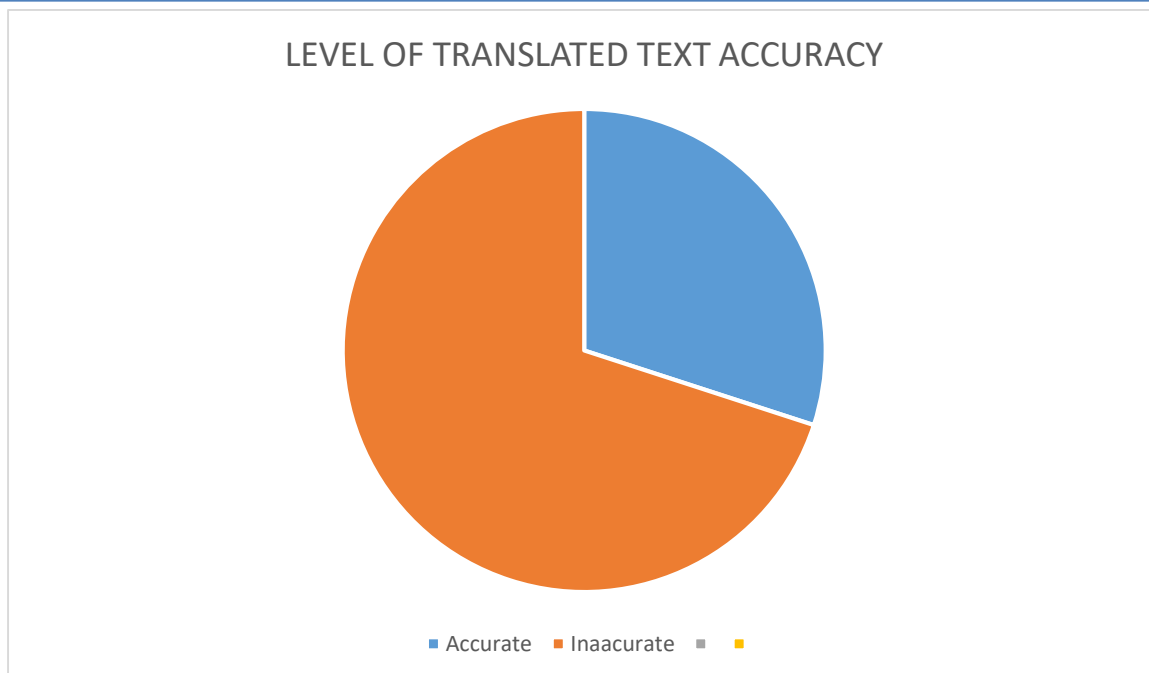


Figure 2: Level of Translated Text Accuracy

Upon random searches, some apps had no matches for the proverbs i.e. 6 out of the 14 or 42.8% of the apps and 8 apps had varying degrees of translations.

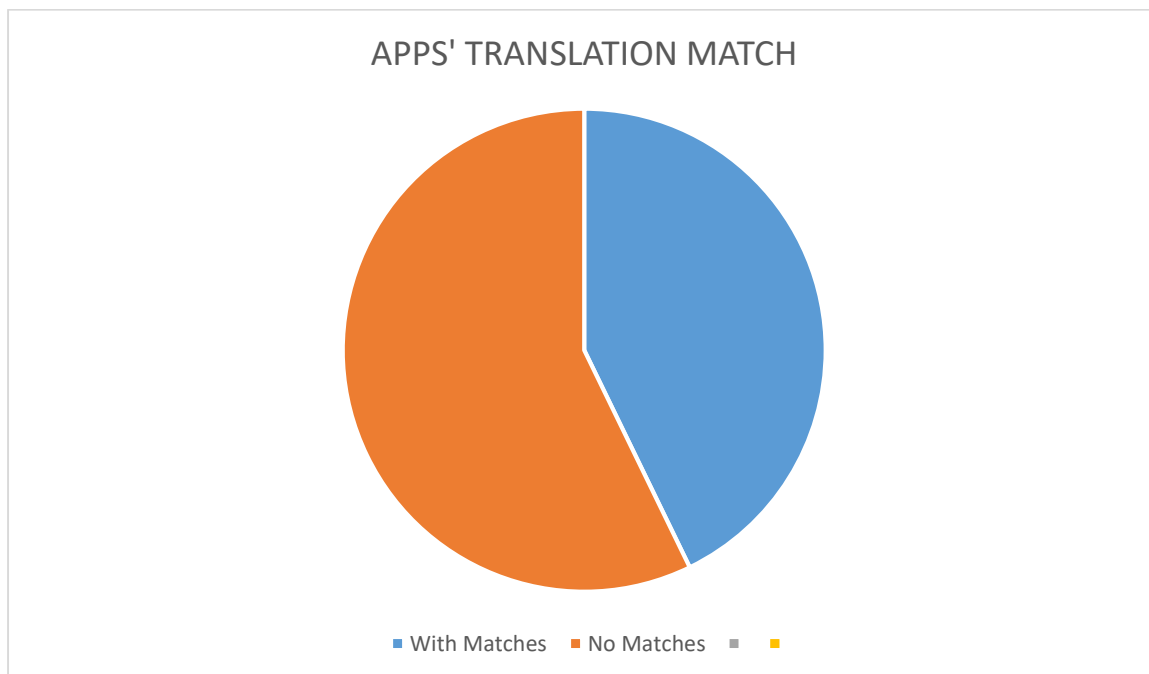


Figure 3: App's Translation Match

The inaccurately translated texts had either inadequate translation (20%), omission (10%), identical source and translated texts (10), wrong lexical choices and/or deviation of meaning (60%). For instance in the proverb: *Mchagua jembe si mkulima* (he who is choosy about farm tools is not really farmer) three apps translated it as; 'A plowman is not a farmer', hence,

'*mchagua jembe*' as *plowman which is a wrong lexical choice. The same is observed in the proverb, *Mchumia juani hulia kivulini* (He who toils for his living in the sun, enjoys the fruits of his labour in the shade) is translated as; a farmer in the sun *cries in the shade". Direct translation and meaning transfer where the closest semantic equivalent is picked seemed to be the most common feature, occurring in 80% of the translated texts. For example, the proverb, *asiyesikia la mkuu huvunjika guu* is translated as, "he who does not listen to the *prince will break his leg" in two apps and "he who does not listen to the *great will break his leg" in three apps. 'Prince' for *mkuu* that is meant to stand for 'the people in authority' as per status or age giving counsel to others, as the Kiswahili proverb insinuates. Direct translation is observation in the segment *huvunjika guu*, which is translated to 'break his leg'. The gloss for the translated proverb should be- 'He/she who does not heed to the counsel of those in authority or older than him/her does not go far'.

The proverb, *Usiache mbachao kwa msala upitao* (Gloss: Do not abandon your old prayer mat for a temporary new one), carried the most mistranslations with five lexical elements given the wrong equivalents. There were three variations in the translation of the proverb obtained from six apps. These are: Don't leave the *bachao for the next *prayer; Don't leave your *care for the *past prayer; Don't leave your *worries for the last prayer. In this case, the word *mbachao* (your old prayer mat) is taken as a synonym of 'prayer' and 'care'. Further, the singular form prefix 'm' is omitted in the first instance, and the TT text picks **bachao*. This is not only a case of same source and translated text form but also inadequate translation. In the end, the proverb loses meaning and becomes uncommunicative in the TT. The errors may be due to cultural aspects in the target language that the translator is not able to pick, instead of which the focus is on basic meanings of the words.

Inadequate translation and omission were also observed in some translations. For instance in the proverb, *Mtegemea cha nduguye hufa maskini*, the TT is, 'A dependent of his brother dies poor'. In this case, the possessive pronoun *cha*, which would change the TT to 'He/She who depends on his kin's possessions dies poor', is omitted hence leading to inadequate translation. The tree map below shows this distribution of errors in the 10 proverbs translated from Kiswahili to English.

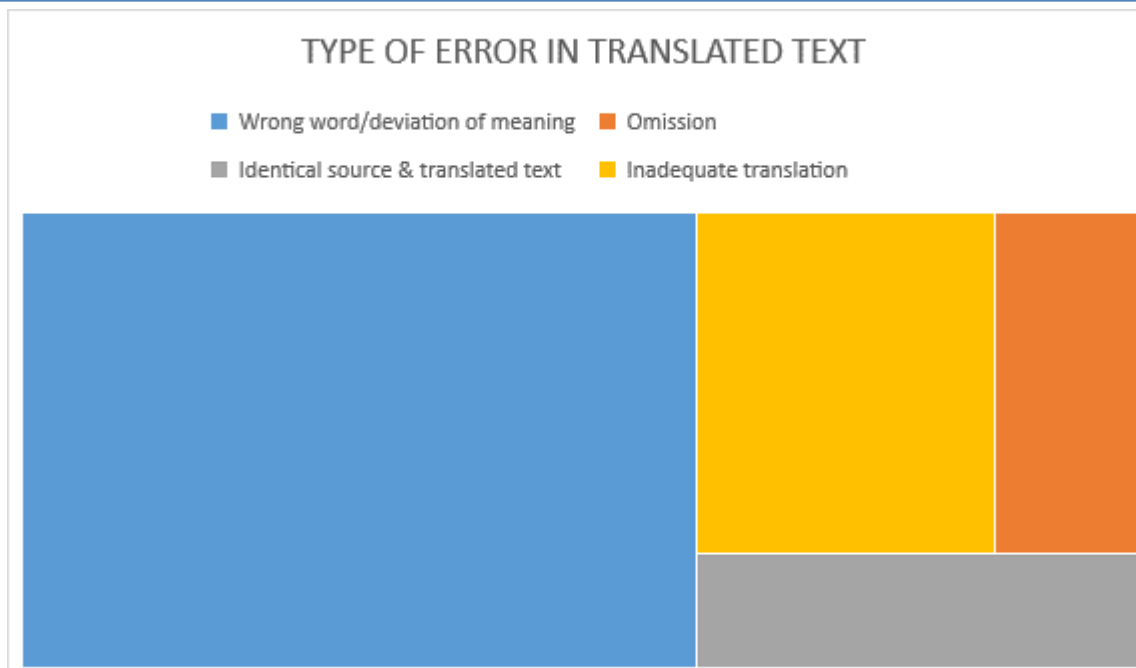


Figure 4: Types of Error in Translated Text

Spiritual Word Forms

Five sentences that had lexical elements that had spiritual meanings were randomly searched on different apps. These elements include words like demons, evil spirits, God, faith, spirit, soul, superstition, charms and possession by evil spirits. Google Translate and iTranslate got three out of the five sentences accurately translated, which is equivalent to 60% accuracy. All the other apps had inaccurate translations with different errors such as omission, deviation of word, wrong word choice and inadequate translation. For instance, the sentence, *‘Imani yake hafifu ilimfanya aonekane kuwa na roho nyepesi ilhali alihofia moyo wake’* was translated by 9 apps as: ‘His faith made him light hearted but what he feared was his heart’. The word *hafifu*, which means ‘weak’, was omitted in the TT. In all apps, the word ‘moyo’, which may mean ‘soul’, or ‘heart’ depending on context, was translated as ‘heart’. The accurate translation should have been ‘soul’. Therefore, the translation for that spiritual word was 100% inaccurate in all apps. Wrong word choice and deviation of meaning was also observed in other sentences. For instance, the sentence, *Alifanya matambiko ya kufukuza pepo wabaya*, was translated as, *‘He performed rituals to remove evil spirits.’ Kufukuza pepo (drive away spirits) was translated as ‘remove evil spirits’. This may be taken as a case of direct translation and deviation of meaning. The same error was observed in the sentence: *Mashetani yalimwingilia akamsahau Mungu pamoja na mja aliyekuwa karibu naye* was translated as: The *devils interfered with him and he forgot God along with the devotee who was next to him. The word ‘*mashetani*’ was translated as ‘devils’ instead of ‘evil spirits’ in all apps searched. *Mja* was also wrongly translated as *devotee other than simply person.

Food

Food items in Kiswahili seemed to produce many cases of no matches in English. For example, *chapati* had a mismatch in Google Translate i.e. pancake, there are equivalents in English e.g. paratha, flat bread and so on. Notta and Smelly by, SayHi and Waygo translated *pilau* as

'banter'. Google Translate translated *nguru* as 'pig'. This may be a case of looking for the closest possible equivalent. As for other food items like *sima* and *ugali* the translations on Google were *stop* which is probably a case of association i.e. the word *zima*. There were no matches in all other apps despite this being a common East African meal. 60% or 6 out of 10 sentences had deviation of meaning. 4 out of 10 sentences had wrong word choice. Identical source and target texts were 3 out of the 10 sentences. Some sentences had more than two errors. None of the apps was able to get 100% translation accuracy. Inadequate translation was observed in three sentences. For example, the word *wali* was translated as rice instead of cooked rice. Another example is *mbaazi nazi* was translated as peas meaning that nazi was omitted and mbaazi was translated. Identical source and target texts were observed in situations where there was no equivalent e.g. mahamri, pilau and biriani. Direct translation occurred in one instant where *samaki wa kupaka* was translated as 'fish to paint', 'fish to fry' and 'oily fish'. Deviation of meaning was observed in *viazi karai* translated as 'potato curry' and pancake for chapati. Curry is not the equivalent term for *karai* which means 'basin' or 'deep pan'. Such a translation ends up not being communicative and therefore does not serve its purpose.

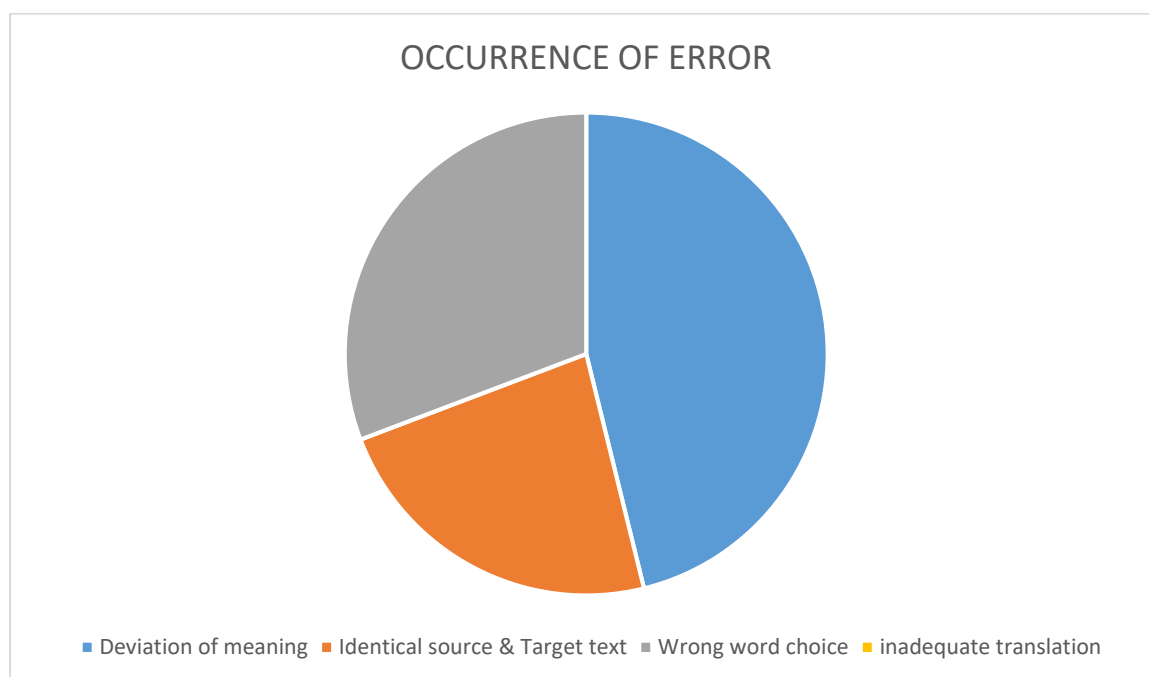


Figure 5: Occurrence of Error

Attire and Beauty Accessories

The apps were also tested on other word forms like beauty, family relations, housing and gender roles or sexual orientations. Words such as *mapambo*, *bangili*, *vipuli*, *ushanga*, *kipini* had diverse translations. E.g. decorations for *mapambo*; Bracelet and *bengl for *bangili*; handle, haft, idiot, pin for *kipini*; bracelet for *ushanga*. These translations were obtained from iTranslate and Google Translate. The concept of relevance seems to lack in some of these translations as most elicited mistranslations and therefore there was loss of meaning and communicative ability.

Family Relations

Kiswahili seems to also define family relations differently from English and hence not all family oriented words have equivalents between English and Kiswahili. Examples are: Shangazi – aunt in English; Mjomba- uncle; Amu – father’s brother; Binamu/bintiamu – male/female cousin; Mama mkwe – mother in law; Bavyaa/mavyaa – father/mother in law; Wifi – co-wife/ sister to husband; Shemeji- brother in law; Mama mdogo/ mama mkubwa- younger/elder sister to one’s mother; Bibi mkubwa- first wife; Bibi/nyanya – grandmother.

Some family related terminologies in English that may not get direct equivalents in the Kiswahili language include homemaker, professional woman, governess, mistress, lover, husband, step son/daughter, step mum/dad. Sexual orientation terms such as lesbian, gay, bisexual, transgender, queer, Intersex, asexual and others (LGBTQIA+) in Swahili face inadequacies in translation. The translations for the sexual orientation terms from Google Translate are: Lesbian – **usagaga*; gay-*shoga*; bisexual-*mwenye jinsia mbili*; transgender-*mtu aliyebadili jinsia*; queer- **malkia*; intersex-**jinsia tofauti*; androsexual-**androsexual*; asexual-**bila kujamiiana*. Out of the the seven words analyzed, only two were accurately translated, that is, ‘gay’ and ‘transgender’. The rest are mistranslated. For instance, bisexual is translated as intersex while intersex was translated as having various gender other than both male and female. Same source text is used in the translation of ‘androsexual’, meaning there is no equivalent and queer is completely mistranslated as **queen*. Asexual, which refers to not identifying with any gender, is translated as ‘without engaging in sexual intercourse’. These sexual orientation translations are therefore completely misleading semantically. Meaning was lost in these translations. The most viable explanation for this TT outputs is the cultural difference between the two languages. Some of these orientations are simply foreign concepts.

Lexical elements that refer to housing in the English language are diverse and clearly distinguished. These include structures such as bungalow, castle, cottage, town house, country house, maisonnette, inn, penthouse, apartment and flats. However, the Kiswahili language lacks the equivalents for most of these lexical terms or has inadequate translations probably due to cultural and environmental realities. Kiswahili words for housing include Dwelling-*Makazi*; Hut-*kibanda*; small house-*kijumba*; big house/mansion-*jumba*; house-*nyumba*; nest-*kiota* and castle- *kasri*. Clearly most of the housing structures in the English language have no equivalents in Kiswahili and so in most translations the closest equivalent is picked.

Kiswahili Translation in Social Media Platforms

Besides Kiswahili translation taking place through the different apps and blogs, the translation also takes place in social media platforms e.g. Facebook, X, Tik Tok, You Tube as well as entertainment-streaming platforms such as Netflix. Social media platforms have played a major role in the growth of Kiswahili through different types of content shared on these platforms. These translations involve themes like entertainment, edutainment, language learning, teaching specific skills e.g. cookery, beauty, relationships e.g. love and romance language/key words. Digital apps have certain features that enhance comprehensive translations in these platforms as shown below.

Tik Tok

Tik Tok is one of the fastest growing social media platforms. It combines text and audiovisual features such as video, animations and caricature to pass information. Many content creators on TikTok (popularly known as Tik Tokers) engage in activities ranging from serious educative

pieces, to politics to mere entertainment. Tik Tokers also tend to use Kiswahili. There are Tik Tok pages that are specifically for teaching Kiswahili. Most of these are translations from English. E.g. Learn Swahili has Conversational Swahili Phrases. There is also a lot of Swahili comedy on Tik Tok. Some of the topics on Kiswahili found on Twitter are Swahili food, Someone Speaking Swahili, English Swahili, English-Swahili-Kinyarwanda, Tujifunze Kiswahili na Kiingereza and English for Swahili.

Tik Tok pages on Swahili translations include: Ronia Teaches Swahili (conversational), Swahili-English –Luganda (sentences e.g. classroom conversations, words and word phrases), Learn Swahili with me (phrases, words, sentences), Arabic-Swahili-English (words), Learn English Kiswahili Translation With Me connected to Duolingo (words, sentences), Swahili Tik Tok – uses capcut, Swahili with Twea (regular speech, words, phrases),

On Tik Tok we have several English- Swahili translations such as proverbs, phrases, names of spices, romantic-love words, Introductory conversations, daily use sentences, proverbs, technological devices or words referring to emerging issues, translation of songs subtitles, interrogatives, greetings, time, classroom discourse, greetings and shopping/market vocabulary.

Examples from English for Swahili

1. Likewise the pleasure is mine- *Vivyo hivyo furaha ni yangu*
2. It is great meeting you too – *Ni furaha kubwa kukutana nawe pia*
3. Thank you, I feel the same – *Asante nina hisia kama hizo*
4. The pleasure is all mine- *Furaha ni yangu yote*
5. I am glad we could finally meet – *Nafurahi tumeweza kukutana hatimaye*

These translations are more or less direct translations because this is not how a typical Kiswahili conversation would go. The sentences may be grammatical but they are pragmatically inadequate.

Learn Kiswahili

Single phrase translations e.g.

My wife- *Mke wangu*

My child/baby – *mtoto wangu*

My grandfather- *babu yangu*

All the 10 phrases sampled in the Learn Kiswahili video were grammatically and semantically correct.

Translated Swahili Proverbs on Tik Tok:

1. *Si lazima kuzima taa ya mwenzio ili yako ionekane*–It is not necessary to blow out the other person’s lantern to let yours shine

This translation though direct makes semantic sense and is grammatically correct.

Kiswahili natives who are content creators do the translations on Tik Tok videos. Many engage in language teaching and have competence in Kiswahili and English. The translations by these creatives possess better communicative abilities.

Netflix

Netflix introduced Kiswahili in 2019 with the intention of bringing Kiswahili speakers on board. However, Kiswahili was only used to translate subtitles. This service was discontinued on July 30 2021 after complaints were raised on Twitter over poor translation outputs. Kenyans shared screenshots and hashtagged messages on Twitter. For example on May 4 2019, one Kenyan commented:

“Netflix translation, “ati ‘Bye guys’ – *Kwa heri wanaume* – are you crazy? Bad bad bad translations is worse than no translations. Stop making a mockery of our languages.”

On May 15, 2019 another Twitter user commented, “Guys have you seen the Netflix Swahili subtitles. Dear @netflix here in East Africa we now understand English very well???? You can collaborate with Swahili speakers here to give you accurate translations. #IkokaziKe.”

Most users of Netflix complained of captions and subtitles that are off and embarrassing to Kiswahili speakers. For example, on August 28, 2020, one user commented, “have you seen how weird Netflix Swahili translations feel...The comic effect will get lost in the process...it is not just about words and language but also culture that is best portrayed in a particular language”.

Facebook

Facebook has several languages used for translation. As at July 2022, Meta, the parent company claimed that Facebook has an updated version of its machine-learning- based language translation engine that can handle over 200 languages. Facebook started translating its services into Swahili in 2015 but Swahili Facebook was launched in 2009. Facebook Swahili in Tanzania was launched in 2014 through TIGO. Facebook uses set see options for these translations. Facebook is also able to translate cultural and metaphorical concepts using Google Translate. Google translate is also used to translate posts in Facebook. However, all the challenges outlined in the analysis above include wrong lexical choice, inadequate translation, mistranslation and same source word translations are a frequent outcome of Facebook TTs. Facebook also has language learning pages where different language teachers create content for potential Kiswahili language learners e.g. Learn Language with Mwalimu Patricia. Most of these lessons are English-Swahili or Swahili- English translations whose purpose is to teach conversational or communicative Kiswahili to foreigners interested in learning the language.

You Tube

You Tube is a video streaming social media platform, which is popular among Kenyan content creators who prefer multimedia channels. These content creators are popularly referred to as You Tubers. In Kenya, You Tubers engage audiences in English and local vernacular languages including Kiswahili. The platform hosts diverse content including educative content and entertainment. Translation involving Kiswahili is widely done on You Tube. Most of the translations are on language learning videos targeting foreigners who may want to learn Kiswahili. Native Kiswahili speakers from East Africa create most of the content. Examples of such videos are those on Kiswahili lessons based on concepts like verbs, riddles, idioms, similes, proverbs, types of trees, clothes, and so on. The researcher sampled similes (*tashbihi*) from a Kiswahili You Tube account where the language educator is teaching similes using the translation method. That is, the Kiswahili simile being translated into English for the target learners. Most of these similes had accurate translations. However, some similes had inaccurate

translations. Examples of these inaccurate translations: *Mtundu kama tumbili* – As *noty as a monkey. This TT should be, as mischievous as a monkey. In this instance, the translated text had wrong lexical choice. The right word should be mischievous not naughty, that was also misspelt. Others had errors in both source and translated texts. For instance, *Mwenye kiburi kama mbuzi* - as stubborn as a goat, which is an inaccurate simile. It should be *as arrogant as a goat. The translated text should be, as arrogant as a lion among sheep. Another example is *Adhibiwa kijeshi* - Punished like military. These translations are not communicative even though the words are used are from the target language.

E-Commerce Apps

The study sampled 16 e-commerce Apps serving five East African Countries, which is, Rwanda, Burundi, Tanzania, Uganda and Kenya. Sampled E-commerce platforms in Kenya include Jiji.ng/jiji kenya, Kilimall-Affordable Online Shopping, MYDAWA, Masoko (by Safaricom), Cheki Kenya, jumia.co.ke. In Tanzania, we have platforms like Kaymu.co.tz, Kivuko Inauzwa.com, and Shopping.co.tz. In Uganda, we have platforms such as Kikuu Uganda, Masikini, Condala, U-Buy Uganda Limited, OdukarStore, OnDuka, Kikuubo Online, Soko.ug Online Shopping, Kweli.shop. In Rwanda, we have Shopify, Kaymu, Lamudi, Jovago, Carisoko, Ntuma and Hellofood. Burundi has Kukasoko, Ilani Concepts, Burundi en Temps Reel, Oversoft, WooCommerce and Wix. These apps seemed to all in the English language and only explanations about them would be translated into Kiswahili when one chooses Google Swahili. The e-commerce platforms generated have international roots and seem to originate from other countries. Examples are Jiji.com, Jumia.com, Shopify, Kilimall and so on. This would then call for the development of different languages software in the app. If this happens and Kiswahili is adopted then that would situate Kiswahili as an important business language in East Africa. The conversations by potential customers on some of these apps on Google sometimes elicit Kiswahili words, phrases or complete sentences as people engage online. However, searches subjected to these apps in Kiswahili yielded no results.

However, many ads and responses come from big organizations marketing online in the Kiswahili language. A good example are the telecommunications companies such as Safaricom, Airtel and TIGO. Many of their ads are in Kiswahili and they are found online in their websites and Facebook pages. Therefore, Kiswahili still has a place in e-commerce especially on the social media platforms. These apps seemed to have pages that were in the English language and only explanations about them would be translated into Kiswahili when one chooses Google Swahili option. The e-commerce platforms generated have international roots and seem to originate from other countries. Examples are Jiji.com, Jumia.com, Shopify, Kilimall and so on. This would then call for the development of different languages software in the app. If this happens and Kiswahili is adopted then that would situate Kiswahili as an important business language in East Africa. The conversations by potential customers on some of these apps on Google sometimes elicit Kiswahili words, phrases or complete sentences as people engage online. However, API generated searches subjected to these apps in Kiswahili yielded no results.

Trends of Kiswahili Translation in Digital Media Platforms

The data analyzed in this paper demonstrates that Kiswahili is an important language in online translations. Kiswahili translations are on blogs, social media platforms and on scholarly fora. The study confirms that Kiswahili translation takes place online and has continued to grow in

terms of translation apps use and through activities like entertainment, language learning and business. Translation has propelled Kiswahili to an international language level and entrenched it as a lingua franca for East African countries and its users in the diaspora even in online platforms. The use of Kiswahili in digital media translation is an indication of the globalization of Kiswahili. Integrating Kiswahili in the digital platforms can drive economic and social change in East Africa since as a lingua franca; the language unites all regardless of socioeconomic status or level of education. Besides unifying online communities, Kiswahili language content in digital media platforms is critical in enhancing learning by providing educational content to learners who would otherwise be marginalized. There are many translation apps specifically for language learning and teaching. Digital resources enhance lifelong learning due to nature of the internet whereby a learner is able to access information beyond spatial and temporal boundaries. These apps and social media platforms have played a major role in the learning of Kiswahili by foreigners. Besides education, Kiswahili contributes to socioeconomic development through e-commerce. Digital technologies enable people to access information, business, news and opportunities including business coaching as well as expanding their market share. Those in business can use the Kiswahili language to reach their potential customers.

Digital transformation in East Africa has brought shopping apps and e-currency closer to the people. For instance Jiji, Jumia, Shopify, Glovo, Uber and many others have provided business and employment opportunities for many and revolutionized shopping. Inquiries into the available goods and services can be done in Kiswahili through embedded apps. E-currency platforms like M-pesa have transformed exchange and transfer of goods, and empowered those who would otherwise be out of the banking league. These services are enabled by the concept of the 'Internet of Things' (IoT), which refers to interconnectivity of all devices through an interface that is internet-enabled. Hence, one can use a phone, iPad, laptop, desktop or even a tablet to transact across platforms such Mpesa, Paypal, T-Kash, Intasend, Google Pay, e-banking and so on, and send communication via email or WhatsApp on the same device. These transactions are conducted through different languages and therefore translation is a key driver of these activities. Kiswahili effectively plays this role in East Africa.

Some emerging trends in Kiswahili translation in the analyzed data include the use of AI driven tools and apps in Kiswahili translations. The TT outputs seem to pick only basic word forms and are unable to translate less used words or lexical elements that refer to cultural or spiritual forms. AI powered tools are used for information gathering, packaging and dissemination including translation. The use of code mixing in source and target texts makes the whole translation exercise of Kiswahili texts on digital platforms, especially social media, unique. Another trend is the emergence of creative industry content. There are several content creators taking up the role of language teachers and their main teaching strategy is translation. This is especially happening on You Tube and Tik Tok as demonstrated above. Activism/discursive practices are another emerging trend. Users are generating content in response to political or socioeconomic situations with the aim of highlighting the plight of the voiceless or general citizenry in their specific countries. For example, the recent youth protests in Kenya included mobilization activities on social media platforms especially X. The Finance Bill 2024, was translated and interpreted into different Kenyan languages, including Kiswahili, during the GenZ revolt in Kenya. This brought out another role of translation; that it can be used for political mobilization and civic education among people with diverse linguistic backgrounds.

Challenges facing Kiswahili Translation

Malangwa, P. (2019) argues that technological innovations from rich or developed countries, which tend to be the dominant speech communities online, are transmitted to the less developed communities through translations. Due to this dominance, most of the translations end up having elements of foreign language structures in the target language. Examples are English syntactic, morphological, phonological and lexical features in Kiswahili translations in different social media platforms and apps discussed in this paper. One of the challenges that Kiswahili integration in the digital platforms faces is the diverse nature of dialects in the language, the existence of street code and Sheng, making it difficult to create reliable and accurate algorithms for translation. For instance, Google Translate picks common words through the AI system and sometimes these words may not be accurate especially for cultural, metaphorical and context or dialect-based words. Another challenge is that some of the Kiswahili translators online are content creators who may not have any linguistic background or training in translation. Intertextuality due to high connectivity of devices and content interaction produce translation outputs that have similar errors meaning that having many apps may not always translate to diversification of quality. For instance, many of the apps sampled for the study have algorithms that heavily depend on English as the base language, hence the many inaccurate translations when Kiswahili is the target language.

Results

From the data analyzed in this study, we come to the following findings: One, that Kiswahili is one of the most important languages of digital translations. It has more than 35 Apps dedicated to it and is translated into more than 20 languages. These languages have in many ways contributed to democratization of language and culture through the various interactions. Secondly, due to the very nature of online translations where machine-learning-based apps are used, most of the translation outputs may not align with the Skopos principle where purpose precedes form or style. Furthermore, in most cases the translations are direct word for word translations and may not recognize the cultural or contextual elements advocated for by Relevance theorists. This may lead to misunderstandings and cultural insensitivity. The target language may lose out communication wise due to errors. Some of the translation apps are AI enabled but understanding human contexts and communicative needs requires human intervention. As indicated in the pie chart (see Fig.1), most of these apps have phrase books and voice recognition but only a small fraction are equipped with cultural forms of language. Another finding is that day-to-day conversations score higher in the translations as compared to spiritual or cultural forms of translation in the different Apps and platforms. This indicates that cultural differences remains one of the key barriers to accurate online translations.

Social media Apps especially Facebook and Tik Tok, which tend to allow more written characters in form of solid texts and captions seem to have better translation outputs than other apps. Tik Tok has many Kiswahili learning and entertainment pages where videos are uploaded. Several of these are specifically for translation. 99% of the sampled conversations on Tik Tok are accurate confirming the Skopos theory's rule of the TT and the T1 role in terms of purpose of translation. Facebook has a longer history of Kiswahili translation and seems to lead the way in terms of apps and algorithms used for translation. Sadly, Netflix failed in the Kiswahili translation arena after continuously producing inaccurate translations.

E-commerce Apps have a huge presence in the East African digital spaces but they have failed in translating their services into Kiswahili. There are Apps that bear Kiswahili names such as Masoko but the language used in the Apps is English and in some cases French.

Recommendations

Recommendations of the Study

The findings of this study indicate that there is need to bridge the Kiswahili language gaps in the digital spaces. For instance, machine translation algorithms need to be improved in order to accommodate Kiswahili. Many of the apps sampled for the study have algorithms that heavily depend on English as the base language, hence the many inaccurate translations. The dominance of the English language in the digital technologies may create a linguistic barrier for many East Africans thus increasing the digital divide. To make these more workable, language experts, technology-based companies and experts as well content creators should consider collaborating to create the databases and corpora needed for better Kiswahili translations. The study acknowledges the fact that content creators and tech companies have in the last decade done a lot in terms of language inclusivity through multilingual features such as AI powered machine learning and translation. Kiswahili serves millions of people across East Africa and it is right at the centre of this diversification and inclusivity in the digital platforms. It plays a critical role in promoting linguistic diversity, information sharing and commerce in the digital space and should be enabled to continue doing the same in a more productive way. One of the challenges that Kiswahili integration in the digital platforms faces is the diverse nature of dialects in the language, the existence of street code and Sheng, making it difficult to create reliable and accurate algorithms for translation. Google Translate picks common words through the AI system and sometimes these words may not be accurate. This paper recommends the integration of AI in the Kiswahili translation apps. This will enable not only more accurate translations but also more standardized ways of translating Kiswahili content. This is because when words and phrases are used severally on diverse AI-powered apps, the data is archived and retrieved as and when needed regardless of the app. AI is capable of enhancing interoperability between apps and other digital platforms but the corpora needs to be updated with all levels of language and lexical elements.

Recommendations for Future Research

The study confined itself to the analysis of Kiswahili texts translated through different Apps some of which are AI driven. A study on specific AI translation tools would elicit more understanding of machine-aided translation as the world transforms into more AI driven technologies. The study did not delve deep into online language teaching and therefore future research may explore the role of translation in e-learning of foreign languages including Kiswahili. More understanding of the role of Kiswahili language scholars in digital media translations would be add invaluable knowledge to the field of translation. More studies on digital translations in other languages would also be beneficial in creating greater understanding of translation apps and AI capabilities across different languages used in the internet.

Conclusions

In conclusion, while the future of Kiswahili translation in digital media holds great promise for expanding linguistic diversity and cultural representation online, it also presents several challenges that must be addressed. By leveraging advancements in machine translation

technology, investing in linguistic expertise, and promoting cultural sensitivity and authenticity, digital platforms can ensure that Kiswahili translation remains a vital tool for promoting inclusivity, accessibility, and engagement in the digital age. Therefore, Kiswahili contributes not only to the growing research efforts in translation studies but may also be useful to digital content creators and language policy experts interested in understanding and enhancing the role of Kiswahili in the promotion of linguistic diversity, cultural exchange and digital access to information.

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