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Improved Yorùbá Language Option of the Automated Teller Machine using Translation Equivalence Model

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ABSTRACT

The introduction of the Automated Teller Machine (ATM) by financial institutions has changed the face of banking globally, Nigeria inclusive. The mechanism has provided a kind of collective sigh-of-relief to both the bank and bank customers, offering convenientt, speedy and round the clock services to bank customers. However, it is not without some inherent challenges as many bank customers who are not proficient in English language found the ATM cumbersome and unfriendly. Attempting to provide solution to these challenges, some banks in Nigeria have developed and introduced the indigenous language version of the Automated Teller Machine options. Yet, user's response did not reflect the anticipated level of enthusiasm as a result of operational complexities and translation equivalence challenges especially for the Yoruba menu option. In view of this, this work makes an attempt to present an improved translation model introducing Yoruba tone marking to assist those who do not understand the English language, but are monolingual only in Yoruba language to effectively interact with the system. This it is believed, will overcome the challenges of the present design and consequently widen the scope of ATM usage in the interior parts of the country.

Keywords: *ATM, Yoruba Language, Translation Equivalent Model, Source Language, Target Language*

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1. Introduction

The most predominantly used e-transaction solution in the country even before the new move for cashless policy was the Automated Teller Machine (ATM). According to Ayo & Ukpere (2010), ATM was responsible for about 89% (in volume) of all e-payment instruments since 2006 till introduction of the new policy. Moreover, since banks in Nigeria introduced card system as a medium of e-payment, report on e-banking system in Nigeria reveals that card technology is presently enjoying the highest popularity in the Nigerian banking market. Interswitch statistics reveal that Nigeria has 30 million ATM card holders who conduct over 100 million transactions on the machine every month (Thakor & Olazabal, 2012).

There is no doubt, that the technology has tremendously stimulated expansion of the banking networks and range of the offered services during recent years. All banking services, such as electronic payments, loans, deposits, or securities have become heavily dependent on the technology. The technology has provided a kind of collective sigh-of-relief to both bank and bank customers since its introduction as an instrument to aid banking operations. However, as its introduction has changed the face of banking in Nigeria, it also leaves behind some inherent challenges as many bank customers who are not proficient in English language find it difficult to interact with the machine.

By the report of the National Bureau of Statistics in 2010, only half of the Nigerian population is literate in English language (NBS, 2010). This indirectly

implies that half of the Nigerian population is disenfranchised from the use of the Automated Teller Machine. Bank customers in this category who took the bold step to apply and obtain ATM cards due to the cashless policy with the cash-lite banking by the Central Bank of Nigeria (CBN), tend to hire the services of those who are proficient in English language whenever they want to make transactions. In the process, some of the customers do expose their secret codes to strangers and thereby suffer loss in the hands of fraudsters in the name of rendering assistance to them. In addition, some children become their fathers' card holder since their parents are not literate enough to navigate the menu of the ATM, consequently they use the opportunity to defraud their parents and inflict on them psychological trauma.

1.1 Statement of Problem

Some researchers and financial institutions in Nigeria have developed and introduced the indigenous language version of the Automated Teller Machine options to improve user's interaction with the system and attract more customers especially those that are not literate in the English language. However, user's response has not reflected the anticipated level of enthusiasm as a result of operational complexities and translation equivalence challenges. Hence, this work presents an improved approach to assist the customers who are not literate in English language to also have their own share in the new technology. Special focus was on the Yoruba menu option of the ATM using Yoruba tone mark based on translation equivalence model.

1.2 Research Objectives

The main aim of this research work is to develop an improved version of the Yoruba menu option of the Automated Teller Machine (ATM).

2. Literature Review

2.1 Impact of Automated Teller Machine on Banking Performance

Automated Teller Machine is a computerized telecommunications device that provides customers of financial institution with access to financial transactions in a public space without the need for a human clerk or bank teller. Using an ATM card, either debit card, or credit card, bank patrons can electronically access their accounts and withdraw or deposit funds, make payments, or check balances without waiting at the counter. To the banks the following has been identified as benefits of the ATM: investment opportunities, reduction in costs, effective service delivery, branding of shared network, satisfaction of customers and competitiveness, etc (Ebiringa, 2010; Maiyaki & Mokhtar; 2010).

According to Adeoti (2011), the Automated Teller Machine (ATM) was introduced into the Nigerian market in 1989, and the very first Automated Teller Machine (ATM) in Nigeria was first installed by National Cash Registers (NCR) for the defunct Societe Generale Bank in 1987, First Bank Plc came on stream with their own ATM in December 1991 (Jegede 2014).

The ATM is playing a key role in any retail banks' efforts to use technology as a quality weapon to defeat competition. It provides a major role in offering convenience, speedy, round the clock services and save time for customers (Cabas, 2001). The ATM has made settlement of bills in the Nigerian banking system easy and safer. These benefits have resulted into phenomena growth in number of ATMs in Nigeria. The growth of ATMs in Nigerian banks has risen from 83% in 2006 to 289% in 2007.

Figure 1 depicts the increase level of ATM usage between 2005 and 2018. As depicted in the graph, over the past 13 years this indicator reached a maximum value of 16.92 in 2018 and a minimum value of 0.68 in 2005.

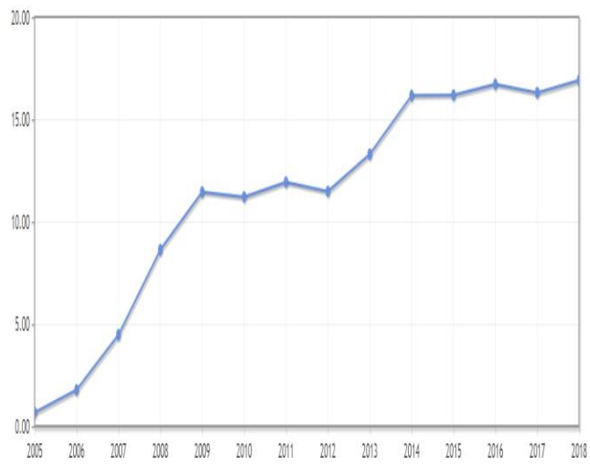

Figure 1: Increase level of ATM usage.

Figure 2 presents selected payment channels in Nigeria for the 4th and 1st quarters of year 2018 and 2019 respectively.

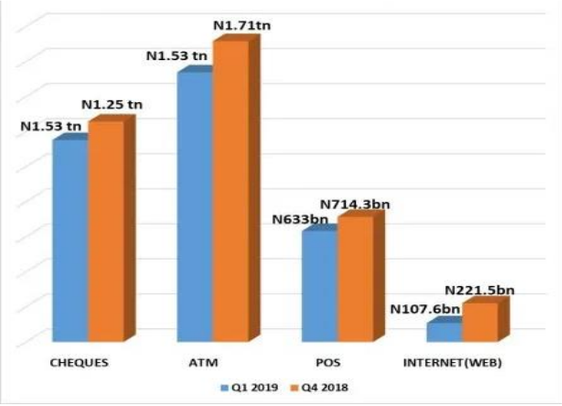

Figure 2: selected payment channels in Nigeria for the 4th and 1st quarters of year 2018 and 2019
Source: (Nairametrics, 2019).

Other great impact of automated teller machine technology is the immense contributions to the promotion of marketing banking services. With the aid of this technology, funds can be moved from one account to another at the push of a button, essential information relating to a transaction could be made available thousands of miles away within minutes (Adeoti, 2011).

Since the bank customer must interact with the machine through the interface of language, a linguistic input into this technology becomes crucial. In a multilingual society such as Nigeria, such an input imposes the challenge of providing translational equivalence to the default language of the ATM.

2.2 Translation Equivalence Model

According to Merriam-Webster Dictionary (2019), translational equivalence is the similarity between a word (or expression) in one language and its translation in another. This similarity results from overlapping ranges of reference. A translation equivalent is a corresponding word or expression in another language. According to Adejumo (2019), equivalence is a key term to linguistic translation theories. He argued that ideally equivalence is synonymous to sameness. In view of this, equivalence in this work is used in the sense of similarity on any linguistic level from form to function.

Theories of Equivalence believes that equivalence comes in three types: intersemiotic (equivalence between sign systems), interlingual (equivalence between languages) and intralingual (equivalence within one language; paraphrasing or rewriting the same content (Newmark, 2009).

Figure 3 shows different perspectives of Translation Equivalence Theory.

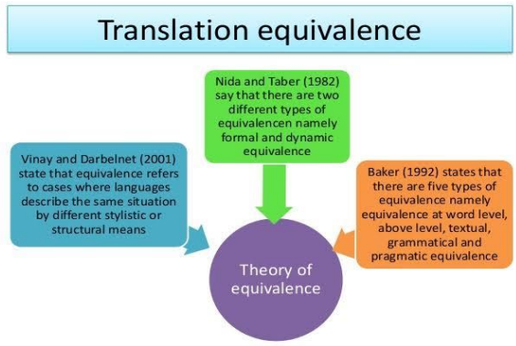

Figure 3: Translation Equivalence Perspectives

Newman (2009) noted that Translation equivalence is a relation that holds between two expressions with the same meaning where the two expressions are in different languages. Some scholars have argued that translational equivalence does not exist, in the sense that, no two words have exactly the same meaning; However, Yinhua (2011) opines that since translation involves at least two languages, each language has its own peculiarities in phonology, grammar, vocabulary, way of denoting experience in addition to the fact that translation involves different cultures, any translation must of necessity involve a certain degree of loss or distortion of meaning of the source text. Nevertheless, an adequate translation will not just aim to capture the form of its equivalent but rather the meaning as informed by the social and cultural experience of the target language.

From this, it is obvious that it is not possible to have perfect equivalence particularly when translating from English language into the Yorùbá language in the domain of ICT because, there are some words in the domain of ICT that are not well presented in Yoruba language. In this case, a translator has to take a holistic appraisal of the meaning of such a word viz-a-viz its usage in the domain of ICT to have its equivalence and not just near equivalence as the case may be.

For example, when text message first appeared in the domain of ICT, it was translated from English into Yorùbá to mean òrò-ìfiránsé. But after critical examination of the meaning of the compound word in relation to its semantic implication in telephony, it has now been suggested and received that it should be ‘òrò-àtèjísé or òrò-àtèránsé” (i.e. ‘word that is typed out to deliver a massage’). In this work, an attempt is made to translate the menu option of Automated Teller Machine in conformity with the phonological and morphological processes in Yorùbá, following the natural

strategy of lexical expansion in the Yorùbá language itself.

By definition, translation is the transfer of meaning from source language (SL) text to the receptor language (RL) text. A good translation is one that is meaning based; that is, one that has the ability of conveying an equivalent message in the most accurate and natural way possible. (Okon & Noah, 2004).

According to Noah (2000), translation is an essential aspect of global ommunication in a world that is becoming more and more plural lingual. Translation involves at least two languages in contact and the transfer of a message. It is the process of transferring equivalent textual material from Language1 to Language2 and vice versa. The main goal of the translator is to produce the message contained in the text in the second language as accurately and as naturally as possible. Therefore, a translator is at least a bilingual and he/she uses the two languages alternatingly.

In the core machine translation, the translation process is divided into three sequentially ordered steps or stages: Analysis, transfer and synthesis (or generation) (Noah, 2000). The first has to do with the application of monolingual rules to Source Language input, based on monolingual lexical and morphosyntactic input. The 'transfer' stage concerns the application of bilingual rules to the representation which result from step one, based to a large extent on lexical information and to a lesser extent on morph-syntactic inputs. The last step in Machine Translation operation, 'synthesis or generation', applies monolingual rules to the representations which result from step two, 'transfer'. And, care must be taken that all operations are meaning-preserving so as to guarantee semantic equivalence of Source Language and Target Language sentences, otherwise the translation has failed. In conclusion, human beings can create sentences without much ado but man has to teach the computer many aspects related to expression be it spoken or written.

3. Methodology

3.1 Research Design

Figure 4 shows the architecture of the Translation Equivalence model considered. The structural model is composed of five modules, namely: the source language input, analysis, transfer, synthesis and the target language output. The analysis has to do with the application of monolingual rules to Source Language input, based on monolingual lexical and morphosyntactic input. The 'transfer' stage concerns the application of bilingual rules to the representation which result from step one. The last step in Machine Translation operation is the synthesis or generation which applies monolingual rules to the representations which result from step two, 'transfer'.

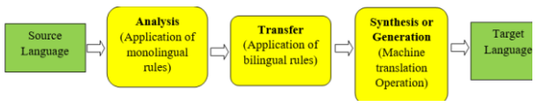

Figure 4: Translation Equivalence Model

3.2 Data Collection and Translation Process

The ATM boots of some banks in Southwestern Nigeria were visited and critical studies about the operation of the machines as regards menu options, phrases and sentences of translation were conducted. Translation equivalent model was employed. The data (content) considered were arranged bearing in mind the principle of relatedness for proper reference and analysis. During translation of the menu of ATM used for the study, the strategies of morphological processes of semantic extension, borrowing, nominalization, indigenization and composition were used.

In the research, efforts were made to involve both the linguists, computer scientists, bank officials and local end users where appropriate on the choice of the words viz-a-viz translation of those words. It is important to know that the research worked within the track fashioned out by the eminent scholars who prepared the Yorùbá of metalanguage. The researchers were very conscious of end-user acceptability of the translation, hence the services of groups of individuals mentioned above were employed in order to come up with actual Yorùbá equivalents of the words in the menu of the ATM. Specifically, the language translation was carried out with the aid of erudite Yorùbá language scholars in the Department of Linguistics and the system development was handled by the Department of Computer Science from Adekunle Ajasin University, Akungba Akoko, Ondo State, Nigeria.

4. Discussion

The Yorùbá translation on the ATM of the financial institution used as a case study for this survey was characterized by some inadequacies which the present work addresses. The first flaw is that, none of the Yoruba translation equivalence on the ATM under review has tone mark. Adejumo

(2017) observes that in African languages tone is like a master hormone owing to the indispensable role it plays in determining the meaning of an utterance. In general, African languages are tone languages as such an African language without tone mark may pose problem to the reader or user of such language.

Let us consider the following as evident on our interaction with the machine.

S/N	Translation on the ATM of the financial institution considered	Proposed equivalence	English equivalence
1	Eku owuro	Ẹ kú òwurọ̀	Good morning
2	Fi ranse	Fi ránṣẹ́	Transfer
3	Fagile	Fagilé	Cancel
4	Gba owo	Gba owó	Withdraw
5	Owo to wole	Owó tó wọlé	Credit
6	Beko	Bẹ̀ẹ̀ kọ́	No
7	Iye to ku ninu apo	Iye tó kù nínú àpò	Available balance
8	Jowo mu iye owo	Jọ̀wọ́ mú iye owó	Please select the amount
9	Jowo yo kadire	Jọ̀wọ́ yọ káàdì rẹ	Please take your card
10	Beko	Bẹ̀ẹ̀ kọ́	No

Secondly, the lack of distinction between the mid-low vowels (with the use of sub-dots) is another crucial defect in the menu under review. It is synonymous with the English menu not making a distinction between, say, [p] and [b] where, instead of 'pay' the hypothetical menu uses 'bay'.

The third observable flaw on the Bank ATM under review is the faulty borrowing of indigenization and lack of equivalence for some terminologies:

S/N	Translation on the ATM of the financial institution considered	Proposed equivalence	English equivalence
11	jowo te PINI re	Jọ̀wọ́ tẹ píìnì rẹ	Please enter your pin
12	Te si ori reciti	Tẹ̀ ẹ́ si orí rìsíìtì	Show on receipt
13	Jowo yo kadi re	Jọ̀wọ́ yọ káàdì rẹ	Please take your card
14	Glo Top up	Àfikún owó ipè Glo	Glow top up
15	Airtel Top up	Àfikún owó ìpè Airtel	Airtel top up
16	MTN Top up	Àfikún owó ìpè MTN	MTN Top up
17	Airtime Top up	Àfikún owó ìpè fóònù	Aittime Top up

It is obvious from the presentation above that item 11, 12 and 13 suggest faulty rendition of borrowing 'PINI' instead of 'Píìnì': reciti" instead of "rìsíìtì" and 'kadi' instead of "káàdì". Item 14 to 17 suggest terminologies that were not provided with Yorùbá equivalence. While borrowing an equivalence to terminologies from English into Yorùbá particularly in the domain of ICT, it is important that the researchers has to improvise words that would be user friendly. On selection of the withdrawal account option on the ATM, the researchers contended the use of equivalence for current, savings and credit. For instance, let us considered the following:

S/N	Translation on the ATM of the financial institution considered	Proposed equivalence	English equivalence
18	Nibayi	Kọ́rẹ̀ntì	Current
19	Ifowopamo	Séfísì	Savings
20	Owotowole	Kírẹ́díti	Credits

A critical analysis of the data presented in item 18-20 depicts that some users may not be able to decode the meaning of 'nibayi', 'ifowopamo' and 'owo to wolé to some extent in as much as they are familiar with **current, savings and credit accounts** respectively. As such, kọ́renti, sefisi and kirediti should be more appropriate.

The fourth flaw is the faulty syntax of Yorùbá translation equivalence on the ATM considered. Olubode-Sawe(2010) observes that faulty syntax is the use of structure that are aberrant by Yorùbá syntactic or morphophonemic rules.

S/N	Translation on the ATM of the financial institution considered	Proposed equivalence	English equivalence
21	Fagile or pare	Fagilé e tàbí paá rẹ́	Cancel
22	Tẹ si ori	Tẹ̀ ẹ́ sí orí	Print on
23	Bẹni	Bẹ̀ẹ̀ ni	Yes
24	Beko	Bẹ̀ẹ̀ kọ́	No

"Fagile or pare" (cancel) is a clause without a mandatory object. "tẹ si orí (print on), bẹni (yes) 'bekọ́ (No) are clauses without objects. The correct forms should be 'fagilé e tàbí pa árẹ́', 'tẹ̀ ẹ́ sí orí', bẹ́ ẹ̀ ni and 'bẹ̀ẹ̀ kọ́'.

The translation process in this work involves the extension of the meaning of existing words in a language in the field of translation. The whole work is replete with semantic extension. Owing to newness of some of the words used in the menu of the ATM, it is pertinent to analyze beyond the word level so as to capture the intended meaning of the word in Yorùbá language, let us consider the following examples of the translation:

a. **Please insert your card** "jọ̀wọ́ ki kaadi rẹ wọlé"

b. **Please enter your pin** "jọ̀wọ́ te nọ́ọ́bà ìdánimọ̀ rẹ"

c. **Press 'Accept' Button to perform cardless Transaction** "Te bọ́tìnì 'mogbà' láti ṣe ìṣẹ aláìloike"

In examples a and c, it is observed that 'card' which is generally acceptable as 'káàdì' in Yorùbá language is referred to as 'ike' in the context. The use of 'ike' is to acknowledge the fact that if not properly guided, the card is breakable. In like manner, in example 'b' 'pin' which is personal identification number is translated as 'nọ́ọ́bà ìdánimọ̀'.

Borrowing by language developers is occasioned mostly by the non-existence of corresponding indigenous words, and sometimes by the inexactness or inappropriateness of competing indigenous terms, examples from Yorùbá include; páànù 'pan' dérẹ́bà 'driver', bárékè 'barracks' (Olúbòdé-sàwè 2010). Some

words were borrowed into Yorùbá language in order to have a good translation of the ATM menu options. For example:

d. **Press 'Accept' botton** – te bọ́tìnì 'mogbà'

e. **Please Select your network** – "jọ̀wọ́ yan nẹ́tíwọ́kì rẹ"

f. **Temporarily out of service** - kòsí nẹ́tíwọ́kì fún ìgbà díẹ̀ ná"

In example 'd', 'botton' is translated to be 'bọ́tìnì' while 'network' and 'service' which mean the same thing but in different contexts are translated to be 'nẹ́tíwọ́kì'. Some of these borrowings are as a result of the attempt of the researchers to conform with the natural resources of the language. These borrowings have already become part of the lexical resources of the language introduced through the medium of broadcasting.

When a word is borrowed from any language into the Yorùbá language, such a word must conform with all the morphological processes in the Yorùbá language. Hence:

Botton 'bọ́tìnì"

Network 'nẹ́tíwọ́kì"

Service 'nẹ́tíwọ́kì'

Yorùbá does not encourage consonant clustering, nor does it tolerate words that end in consonant; if any of these violations occur, the language resorts to a repair strategy of vowel insertion.

In translation of the word ATM, composition was used. By description, composition in translation involves the stringing of two or more words to make a phrase or sentence (Ofulue, 2015).

Considering the phrase in (g)

g. Automated Teller Machine: "ẹ̀rọ tí n pọ owó"

Going by 'word for word' translation of Automated Teller Machine, the principle of semantic implication of the intended meaning will fail. But through the description of the machine we have:

ẹ̀rọ tí npọ owó
Machine that continuous vomits money aspect 'the Machine that vomits money 'Automated Teller Machine'

5. Conclusion

The research work presented a framework of an improved version of the Yoruba menu option of the Automated Teller Machine (ATM), introducing Yoruba tone marking to assist those who do not understand the English language, but are monolingual only in Yoruba language to effectively interact with the system. Data (content) considered for the work were collected and arranged, bearing in mind the principle of relatedness for proper references and analysis. During the translation, the strategies of morphological processes of semantic extension, borrowing, nominalization, indigenization and composition were used. Specifically, Translation Equivalence Theory was employed to guide the process of the translation. The research work does not only assist those who are not proficient in English language to effectively interact with the system, but also overcomes the challenges of the present design and consequently widens the scope of ATM usage in the interior parts of the country.

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