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MORPHOPHONEMIC ALTERNATIONS OF EKEGUSII NOMINAL DERIVATION: AN OPTIMALITY APPROACH

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ABSTRACT

The study examined the morphophonemic alternations in derivation of nouns in Ekegusii to describe the types of derived nouns, the phonological processes involved in the nominal derivation and to formulate phonological constraints of prefixation. A descriptive research design was employed to collect, analyze and describe data. A list of 50 derived nominal was generated, Rogooro dialect speakers of Ekegusii in Moi University were identified to verify data. Sample data were obtained from each noun class through purposive sampling which were analyzed and coded into semantic classes and explained using Transderivational Anti-Faithfulness (TAF) Theory. Findings of the study indicate that nominal derivation forms deverbal, deadjectival, diminutive and abstract nominals. Noun Class prefixes induce vowel deletion, alternation and lengthening, consonant mutation, deletion and nasal assimilation because of unfaithful mappings of inputs to the outputs as a result of the interaction of markedness and faithfulness constraints in Optimality and TAF Theories.

Keywords: Nominal Derivation, Morphophonemics, Transderivational Anti-Faithfullness Theory and Optimality Theory.

1. INTRODUCTION

This study is on the interface of morphology and phonology. Particularly, the study sought to investigate the morphophonology of the noun in Ekegusii. This language is agglutinating since it is characterized by diverse combinations of morphemes in word formation. Some phonological alternations, changes and modifications occur in the internal structure of bases and affixes in derivational morphology. The changes include both the segmental and suprasegmental levels.

Ekegusii is a language spoken by the Gusii people in Kisii highlands and other regions in Kenya like Molo, Kitale, most towns and cities in Kenya as well as USA where they are settled. Kisii region covers eight districts, namely, Nyamira, Kisii Central, Kisii South, Manga, Borabu, Masaba, Gucha South and Gucha in Nyanza Province. The Gusii claim Mogusii as their founder and they have taken their name from him. The term Mogusii is a noun that consists of two morphemes: mo- (Noun Class 1 prefix) denotes personal nouns and *–gusii* is a base that means kisiiland that are joined into one word. According to Cammenga (2002), Ekegusii is spoken by about 1.5 million people. He classifies it as an Eastern Bantu language spoken in the northern region between the eastern shore of Lake Victoria and the western branch of the Great Rift Valley.

Ekegusii has two dialects: Rogooro and Maate. The Rogooro dialect is the northern variety spoken in Kisii Central and Nyamira sections while the Maate dialect is the southern variety spoken in Gucha District. The differences between the two dialects are experienced at the phonological level especially on the /d/ sound used by Maate speakers in place of the sound

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/t/ as used by Rogooro speakers. Regardless of the linguistic differences, speakers from both sides of Kisii communicate with each other effectively. The data used in the current study consist of the Rogooro variety since the researcher is a native speaker of the northern variety. Hence in this study, the term Ekegusii is used to refer to the northern variety and generalizations about nominal morphophonemics are made on the Rogooro dialect.

Nominal morphology

Nominal morphology involves a system of adjustments in the noun's form and modifications in the ways speakers intend to be interpreted in discourse. According to Payne (1997), a speaker alters words' meanings in a particular context by combinations of various morphemes to communicate with the intended listener. Words are at the interface between phonology, syntax and semantics. Words have phonological properties; they combine to form phrases and sentences. This is a clear indication that words contribute a lot to syntax and the information a sentence communicates is derived from the words that make it. A word can either be a morpheme or consist of morphemes. Katamba (1993:24) defines a morpheme as 'the smallest difference in the shape of a word that correlates with the smallest difference in a word or sentence meaning or in grammatical structure.' The structure of Ekegusii noun consists of the noun class prefix and the base. The prefix is analyzed into an augment (pre-prefix) and a noun class marker. The base can be further subdivided into a root and a final vowel as below: -

Omoibi *'thief'*

o-	-mo-	-ib-	-i
Augment	Noun class marker	Root	Final vowel

The pre-prefix is the initial vowel that occurs before the noun class prefixes (NCP). It emerges as a full syllable as shown above. Pre- prefixes occur in Ekegusii and they are identical with the Noun Class Marker (NCM) vowels in almost all cases. The initial vowel has been referred to as a weak determiner since it denotes specificity of the word to which it is prefixed (Petzell 2003). The pre-prefix can either be used or omitted from a noun depending on the degree of particularization implied. In Ekegusii, the pre-prefix is used before noun class markers for particularization purposes. However, Noun Classes: 1a/2, 5b, 10, 10a and 21 do not have pre-prefixes as shown in Table 1 that is presented later in this chapter. Omission of the pre-prefix, in some instances, implies that the topic referred to is familiar to both the hearer and the listener.

The root and the prefix are bound morphemes that do not constitute words by themselves in Ekegusii. In Ekegusii, roots are core elements in words since they carry basic meanings as in *[o-mo-ib-i]*, the root *[–ib-]* has the meaning 'steal' since the noun *omoibi* 'thief' is derived from a verb through prefixation, but the root is not a word in Ekegusii where a word cannot in any circumstance end in a consonant. A word in Ekegusii must have the VCVCV or CVCV syllable structure. The root requires addition of the final vowel *[-i]* and the Noun Class 1 prefix *[omo-]* since all nouns in Ekegusii are grouped into semantic and morphosyntactic classes (Cammenga 2002). Thus, the noun class prefixes are widely used in Ekegusii nominal derivation. The object of analysis in this study is phonological change in word forms that arise from derivation. Therefore, the base is the basic unit of analysis which constitutes the imperative forms of the verb, bases of adjectives and nouns in Ekegusii. Katamba (2003:45) defines a base as

> any unit whatsoever to which affixes of any kind can be added. The affixes attached to the base may be inflectional affixes selected for syntactic reasons or derivational affixes which alter the meaning or grammatical category of the base.

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The term base is used in this study to refer to the morphemes to which derivational prefixes are added.

Table 1. Ekegusii Noun Class prefixes.

Class	Pre-prefix	Noun class prefixes
1	o-	-mo-
1a	Ø	Ø
2	Ø	Ø
2b	a-	-ßa-
3	o-	-mo-
4	e-	-me-
5	e-	-ri-
	Ø	rii-
6	a-	-ma-
7	e-	-ke-
	e-	-ge-
8	e-	-ßi-
9	Ø	-e-
9a	e-	-n-
10	Ø	ci-
10a	Ø	ci-n-
11	o-	-ro-
12	a-	-ka-
	a-	-ga-
14	o-	-ßo-
15	o-	-ko-
16	Ø	a-
21	Ø	ña-

Table 1 above illustrates Cammenga's (2002:199) noun class system that was adopted in this study. Ekegusii noun derivatives are prefixed by choice of a noun prefix from the morpho-syntactic classes. Some nouns in Table 1 are derivatives of verbs like *okoruga* 'cooking'. This is a clear indication that derivational morphology is productive in Ekegusii. Once derivations have been made, they can be grouped into the various classes depending on the prefix they bear and their semantic meaning in Ekegusii.

Ekegusii phonetic inventory

The segmental inventory of Ekegusii is described using the IPA notation. In morphophonology, segmental changes occur since morphology triggers phonological changes. Sound segments are basic units of analysis that should be taken into consideration in order to establish the relationship existing between morphology and phonology. In this study, vowel

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and consonant alternations are analyzed. This requires an established segmental system that lays a basis for the arguments that are presented in this study.

Ekegusii vowel system

Ekegusii has a total of 14 short and long vowels. According to Cammenga (2002), Advanced Tongue Root (ATR) feature is distinctive in Ekegusii vowels. The vowels [i], [a] and [u] are specified phonetically for +ATR. All the vowels on the chart are produced with an open vocal tract. The changing shape, movement and position of the tongue determine their quality.

Table 2. Ekegusii vowel system

The vowels are presented in Table 2 below: -

	Front		Central		Back	
	Short	Long	Short	Long	Short	Long
High	i	i:			u	u:
Upper mid	e	e:			o	o:
Lower mid	ɛ	ɛ:			ɔ	ɔ:
Low			a	a:		

Consonant system

The consonant inventory of Ekegusii is presented in this section based on the criteria of place and manner of their articulation. Ekegusii consonants are twenty-one in total and voice is distinctive. The prenasalized consonant sounds presented here are seven in total and they are on the last row of the table. The consonants in the Table 3 below have been presented as per Cammenga (2002) and in relation to the researcher's knowledge of Ekegusii sounds as a native speaker.

Table 3: Ekegusii consonant system

	Bilabial		Alveolar		Alveo-palatal		Velar	
	Voiceless	Voiced	voiceless	Voiced	voiceless	Voiced	Voiceless	voiced
Plosives	p		t				k	
Fricatives		ß	s					ɣ
Flapped liquid				r				
Affricate					c			
Nasals		m		n	ň			ŋ
Semi-vowels		w				y		
Prenasals		mb	nt ns	nd	ňc		nk	ŋg

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Morphophonemics

Morphophonemics is a process of phonological alternations and modifications when morphemes combine. In word formation processes, sound segments and features like voice originally not in the base and affixes become evident in the derived form. At the same time, some phonological features e.g [+voice] and segments may be lost in the process. For example, the initial voiceless consonant of the nominal stem *[kasa]* is voiced due to affixation of floating feature [+voice] to form a singular noun *[gasa]* in Aka language (Akinlabi 1996). A phonological rule associates [+voice] feature to the initial consonant of the root. The underlying [–voice] feature is delinked from the consonant resulting in the surface form *gasa*. In derivational morphology, phonetic shapes of bases and affixes are modified due to application of such phonological processes. This study sought to investigate the morphophonemic modifications of the base in Ekegusii nominal derivation.

Statement of the Problem

Morphology and phonology interact within the morpheme domain in natural languages to result in a number of phonological alternations. Bantu languages exhibit combinatory morphophonological operations in word formation due to their agglutinating nature. For example, the biggest percentage of words is formed through prefixation in Ekegusii. Ogechi (2006:65-66) notes that Ekegusii is highly agglutinatinative since "most words typically consist of a basic root followed by one or more affixes and each affix represents a specific grammatical category." The combinations of Noun Class Prefixes with roots generate derived nouns.

Agglutinating languages are characterized by phonological alternations in formation of words. The study examines the phonological modifications and alternations that accompany derivation of the noun in Ekegusii. The study sought to identify and explain the phonological processes associated with formation of the noun. Therefore, the study aimed at describing the types of derived nouns, phonological alternations and phonological constraints using Transderivational Anti-Faithfulness Theory.

Aim

The aim of the study is to explain the interaction of morphology and phonology in nominal derivation in Ekegusii.

Objectives

i. To explain the phonological processes that occur in derivation of Ekegusii nominals.
ii. To formulate phonological constraints of prefixation in Ekegusii nominal derivation.

2. LITERATURE REVIEW

Morphologically conditioned phonological alternations are changes that occur between morphemes of the base. Yun (2003) defines it as a case where mophophonology turns into morphology first and most quickly where phonological conditioning is weakest. Previous studies on Bantu languages' morphophonemics indicate that morphology has an influence on phonology, though much of it is on tonal changes.

Meeussen (1967) analyzed Bantu grammatical systems. Among them is morphophonology. In his analyses of morphophonology, the vowel *[i]* appear as*[e]* after either *[e]* or *[o]* in verbal and nominal stems. For example *[–tend-id-]* becomes *[–tend-ed-]* 'say to' and *[–dondid-]* becomes *[-donded-]* 'seek for.' On the other hand, *[u]* appears as *[o]* after *[o]*. Further Meeussen postulates that the rule applies even in cases where *[e]* or *[o]* is followed by a sequence of [*i*]or [*u*] which is not interrupted by *[i, a, u]*.' this is a general observation that might apply to some languages but not all. Meeussen recommends a proto-Bantu rule (Meinhof's rule) for consonant mophophonemes. In Meinhof's rule, the consonant sequence

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consisting of a nasal and voiced oral in a word is manifested as a double or long nasal if the following syllable has a nasal. For example, *[n-bon-]* becomes *[mmon-]* 'I see' and *[n-ndim]-* becomes *[nnim]* 'I cultivate'. However, Meeussen did not explain the applicability of such postulations if they occur due to a morphological process or not.

Another study on tonal changes in prefixation by Sharman (1963) shows that the phonological structure of the stem in Bemba greatly influences the phonological representation of the pre-prefix and noun class marker. According to Sharman (1963), the phonetic shape of the nominal is VCV type and this shape is a result of the initial vowel plus noun class marker. The stem induces tonal changes on the noun class marker and the initial vowel. The initial vowel always constitutes structurally high monophone and the class marker structurally low tone. High monophone, low structural tone before a stem with high tone gives high phonological tone. Although tone is not within the scope of the present study, these studies indicate a possibility that Bantu affixes induce phonological changes in the stem and vice versa. So the present study narrows its scope to look at segmental changes.

Kambou (2003) found out that the verbo-nominal roots in Lobire show morphophonological operations in suffixation. Lobire is an African language spoken in Southwest Burkina Faso and Northwest Ghana in West Africa. Kambou is a native speaker of the language. He collected nouns and verbs which he observed with regard to the deletion of the suffix vowel and sought to propose a rule of such behavior. He recorded the data he had collected while on a field trip and transcribed himself and cross-checked with the informant who was a native speaker. 300 nouns and verbs were analyzed within Autosegmental theory where six groups of verbo-nominal roots were established based on their syllable structure. Lobire roots are verbo-nominal in nature such that either a verbal suffix or a nominal suffix can be adjoined to them to obtain a verb and a noun respectively. The roots refer to the concept they represent in terms of meaning. The results of the study showed that the suffix consonant undergoes consonant harmony to give the different allophones. Also, contour tones in verbs and nouns are as a result of the adjunction of CV suffix morphemes with polar tones and deletion of the suffix vowel. Kambou's study is relevant to the present study not because he analyzed suffix changes, but because of the methodology used in a morphophonological study. The methodology is also used in this study to collect Ekegusii nominals which display phonological changes. The methodology is less costly and it enables the researcher to collect authentic data due to the direct contact that is between the researcher and informants as well as data.

In another study, Yun (2003) explains that vowel elision is a function of suffixation in Aymara. A suffix is lexically specified to delete the final vowel of the base. His definition coincides with that of Inkelas (1998) study of dominance where affixes induce phonological alternations to the bases they are attached. Dominant suffixes trigger the deletion of a vowel which comes before it in Aymara. Yun's study is relevant in this study that analyzes sound changes in Ekegusii nominal derivation. His definition is used to analyze the effects of prefixation in Ekegusii in order to establish a relationship existing between morphology and phonology.

Inkelas, Orgun and Zoll (1997) analyzed morphologically conditioned phonology in reduplication using Mother Doubling Theory. They recorded cases of assimilation, dissimilation, deletion, insertion, lenition, coda sonorization, and neutralization in input-output modifications. In their study, reduplicative phonology is not different from non-reduplicative phonology. Therefore, their findings indicate that morphologically conditioned phonology can apply in other word formation processes. This study investigates morphophonology of Ekegusii nominal derivation using TAF theory.

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Transderivational Anti- Faithfulness Theory (TAF)

Alderete (1999) developed TAF theory as a reversal of faithfulness constraints that were initially proposed by McCarthy and Prince (1995) and later refined by Benua (1997). Prince and Smolensky (1993) introduced Optimality as a theory for linguistic analysis. They explore the idea that Universal Grammar consists of a set of constraints out of which well-formed structures of individual grammars are constructed. They support markedness and faithfulness constraints. Markedness constraints asses well-formedness of outputs while faithfulness constraints maintain identity of underlying structures in the output. The two constraints operating in a particular language conflict and their conflict is resolved by their violation and ranking in a strict dominance hierarchy. Constraint ranking differs from one language to another and this determines the output representations. In Optimality Theory (OT), a constraint has absolute priority over other constraints in the hierarchy.

TAF theory requires a violation of at least one faithfulness constraint- type. The basic tenet of TAF theory according to Alderete (2001:210) is that:

For every faithfulness constraint F, there is a corresponding
Anti- Faithfulness constraint F that is satisfied in a String S
iff S has at least one violation of F.

The researcher uses TAF theory's principles to explain morphophonological operations in Ekegusii nominal derivation and pluralization.

The present study explains the morphologically conditioned phonological changes. These alternations are as a result of affix dominance as explained in TAF theory. TAF theory posits that most languages have both recessive and dominant affixes. The latter induce base alternations that lead to differences in the base in derivation while recessive affixes do not. For example in Ekegusii, the plural prefix [*ama-*] is recessive since when attached to [*–goro*] 'leg' to form *ama-goro* 'legs' it does not trigger any base change as is the case of the *chi-* when attached to [*-n'gombe*] to form *chi-ombe* which deletes the velar nasal consonant [ŋ]. The problem posed in the study is to find out and explain the base mutations as a result of dominance effects and TAF theory provides a framework within which the dominance effects are explained.

Transderivational Anti-Faithfulness theory is devoted to solve the morphophonological base mutations by proposing four hypotheses which explain data (Alderete 2001:213-215). Firstly, TAF theory describes the property of affix specificity. Affixes must have a dominance property to induce base mutations. There are affixes that can trigger phonetic changes while others cannot. This property is pertinent in the present study. Thus, the researcher describes and explains the data of Ekegusii nominal affixation and how affixes trigger segmental alternations observed.

Secondly, output-output correspondence requires certain morphological processes that will trigger base mutations. In Ekegusii, words are formed through morphological processes like derivation and pluralization. The researcher was concerned with prefixation of bases to form plurals and nominal derivatives in this study. The base and derivative output pairs stand in relation to one another. For instance, both the verbal base *tuka* 'investigate' and the nominal derivative *obotuki* 'investigation' are ouput correspondents. TAF theory applies since it identifies and describes the phonetic differences between the two correspondents.

Thirdly, TAF constraints trigger phonetic changes on the base of the derived word and the theory explains morphologically conditioned base alternations. In this study, the researcher explains phonological alternations that occur in derivation of the base of derived noun.

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Fourth, TAF constraints are grammar dependent. The activity of TAF constraints and the resulting changes depend on the larger constraint system of OT. TAF constraints narrow down an alternation by specifying the alternating feature and the faithfulness violation required. These constraints do not offer explanations on the location of the feature that alternates and the explanation why such changes occur. In this study, the researcher explained data using different approaches including Optimality theory, Autosegmental theory and researcher's interpretation of data.

Transderivational Anti- Faithfulness theory was preferred over Lexical Phonology and Morphology and Faithfulness theory since TAF theory accounts for the affix- induced base alternations and the ultimate effects. This is true since TAF enabled the researcher to provide an understanding on morphophonology of the base in Ekegusii nominal derivation. This was done by the formulation of constraints that govern well- formed structures. However, TAF theory could not work independently without seeking some explanations from the mother theory, OT. Particularly, the researcher drew the conflicting nature of OT's constraints from the postulations of Prince and Smolensky (1993) in order to explain the concept of winning candidates and constraint ranking. In addition to that, TAF theory is limited in the sense that it doesn't provide an explanation why some phonetic alternations occur but it only specifies the alternating feature. The researcher had to seek explanations from general observations of Bantu data on Bantu languages, Autosegmental theory (Wolf 2007) and by observing the language pattern and came up with explanations for each noun and phonetic characteristics it displayed.

Morphology is construed as being antifaithful in nature in TAF theory. Its function is to create contrast between lexical categories when words are formed especially through affixation. The anti-faithfulness constraints require the output to be phonologically distinct from the input by violating the related faithfulness constraints. In Optimality Theory, the markedness and faithfulness constraints conflict so that when markedness constraints outrank faithfulness, the output (derivative) is unfaithful to the input (base) and when faithfulness constraints outrank the markedness constraints, the output is faithful to the input. In a grammar there are morphological constraints which are also anti-faithful in nature which trigger various phonological alternations. There arise phonological mutations, deletions and insertions once the anti-faithfulness constraint outranks the faithfulness constraint. According to Alderete (1999), it is only the dominant affixes which can induce a phonetic contrast between the base-derivative pairs by triggering deletion, insertion or mutation in the base.

2.2.4. Transderivational Anti- Faithfulness constraints

Alderete (2001:211-213) proposed anti- faithfulness constraint families in the TAF theory as negations of the faithfulness constraints. These constraints are presented below:

¬ OOMAXIMALITY constraint family:

Requires obligatory deletion of at least one x in the s1 ⟶ s2 mapping.

¬ OODEPENDENCY constraint family:

Requires obligatory insertion of x in S2 not present inS1.

¬ OOIDENTITY (F) constraint family:

Requires that at least one pair of correspondent segments must differ in feature F.

In (11) b above, a glide is inserted as follows:

[to:ŋa] ⟶ [egeto:ŋwa]
Anti- faith

This satisfies the constraint:

¬OODEP [glide] requiring insertion of [w] before the final vowel.

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The above constraint families with their sub-constraints are used to explain base mutations and modifications of the kind in nominal derivation.

3. RESEARCH DESIGN AND METHODOLOGY

This study is descriptive in nature since the researcher aimed at describing the phonetic characteristics of derived nouns in relation to their bases. The researcher generated a list of Ekegusii words and identified two adult Rogooro dialect speakers in Moi University who verified the data as acceptable. Two male informants were selected to verify the data that the researcher, who also speaks the Rogooro dialect, had generated. This was done in order to avoid wastage of time in verifying the same data using several informants. The researcher sought clarifications from informants in Moi University where the research was conducted to cut on the cost of travelling to areas settled by the Gusii people. This was important because much time and resources were saved in the process of data collection. The researcher used adult informants who corrected spellings and pronunciations of Ekegusii nouns that were contentious since they have good mastery of Ekegusii. Sample data were obtained from Ekegusii noun classes through purposive sampling which were later analyzed and coded into semantic classes. Each group of nouns was dealt with in isolation to identify the unique phonetic changes each nominal class displays. Then, the phonetic changes in derivation and number inflection of Ekegusii nouns were explained using Transderivational Anti-Faithfulness Theory.

Methodology

Data Collection

The researcher generated nouns and later asked informants to verify these nouns. They were given a list of nouns which they read out aloud one by one. As they read the list, the researcher recorded the nouns on paper. After the whole process, both the researcher and respondents checked the final copy of the list and agreed that those were the correct nouns as used in the Rogooro dialect. Nouns were obtained from the researcher's knowledge of Ekegusii and others were obtained from Cammenga (2002), Whiteley (1960, 1965) to make a list of 50 derived nominals. The researcher selected between two to seven nouns from each noun class so that the selected nouns could act as representative data for each noun class. The researcher recorded the nominals on paper and read them to the two respondents who confirmed that they were acceptable words in Ekegusii by proposing the accurate pronunciations that were contentious especially vowel length in some bases. These nominals were then ready for transcription and analysis.

Data Analysis and Interpretation

The derived nouns were analyzed into the deverbative, adjectival, gerundive, abstract and diminutive types. Further, both derived nominals were transcribed morphemically to distinguish the noun class prefixes from the bases then, phonetically to identify the segmental mutations, deletions and insertions the noun class prefixes induce. These morphophonemic alternations are explained using Transderivational Anti-Faithfulness theory.

4. RESULTS AND DISCUSSION

Nominal derivation in Ekegusii

Derivation of nouns in Ekegusii is divided into: the class changing and class maintaining nominal derivation. The different types of nouns that fall under each class are listed and discussed in order to identify the phonetic contrasts each base-derivative pair displays. The two types are presented and discussed in sections below:

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Class Changing Nominal Derivation

Ekegusii nominals are formed from bases of adjectives and verbs. The derived nouns were classified into four major categories, deverbatives, gerundive, deadjectival and diminutive nouns as presented in the sections that follow.

Deverbative nouns

These nouns were identified in Noun Classes 1, 3, 9 and 14 of Ekegusii Noun Class system. The data were further divided and grouped into classes depending on the characteristics the nouns displayed. These groups are discussed under the sub-topics that follow.

Agentive nouns

Agentive nouns are formed when the Noun Classes 1 and 2 prefix to the base of a verb and the change of a final vowel as shown in the following examples:

	Base	**gloss**	**noun**	**gloss**
(1)	a. -kung-a	'protect'	o-mwe-kung-i	'protector'
	b. -rug-a	'cook'	o-mo-rug-i	'*cooker'
	c. -anch-a	'love'	o-mwa-nch-i	'lover'
	d.-eesik-a	'respect'	o-mw-esik-i	'respecter'
	e.-gor-a	'buy'	o-mo-gor-i	'buyer'
	f.-gamb-a	'rule'	o-mo-gamb-i	'ruler'
	g.-orok-i-a	'teach'	o-mwo-rok-i-a	'teacher'

The above data indicate that the class of the word changes from the verb to a noun. The change is characterized by the change of the final vowel. The final vowel *[a]* denotes most imperative verbs in Ekegusii such that when it changes to *[i]* the class shifts and the resulting word is a noun. Agentive nouns denote the performer of an action. Thus the final vowel /i/ marks nouns and it refers back to the performers of a given action meant by the verb from which the noun is derived. The word *omwekungi* in the language refers to a woman who takes up the responsibility of maintaining and building her self-esteem in society. Additionally, *omorugi* is a noun given to a person whose profession is to cook or a wife who should cook for her husband. Similarly, *omwanchi* refers to a person who loves another person. The final vowel changes when a derivational prefix is attached to the imperative verb. The change is predictable since most agentive nouns have the final vowel *[i]*. Example (1g) above shows that the final vowel is [a] retained in the derived noun which shows that there are a few exceptions where the final vowel of a derived nouns remains the same as that of the base. However, this study seeks to explain irregular phonetic changes within the stem not regular changes such as those of final vowels which seem obvious and predictable for each type of derived nouns. Thus, regular phonetic changes are not within the scope of this study.

Personal nouns

These nouns were identified in Noun Classes 1 and 2 and they take the prefixes *[o-mo-]* in the singular and *[a-ba-]* in plural. Just like agentive nominals, they are derived by the attachment of the noun class prefix to the imperative verbal base.

	Base	**gloss**	**derivative**	**gloss**
(2)	a. -eesik-a	'respect'	o-mo-isek-e	'girl'
	b. -kung-a	'protect'	o-mo-kung-u	'woman'
	c. -sib-a	'imprison'	o-mo-sibw-a	'prisoner'

The nouns in example (2 a-c) are nouns assigned to people. In their derivation, the final vowel may change phonetically from *[a]* to *[e]* or *[u]* or not. Unlike in agentive nouns, this change is unpredictable. Similarly, internal phonetic changes in the base are not obvious, for instance, in Example (13a) there is change of the long, low mid front vowel *[ɛ:]*, to a high, front vowel, *[i]*

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and *[i]* to *[e]* in derivation of *omoiseke* from *[omo+eesika]*. The final vowel changes are triggered by the derivational prefix.

Impersonal deverbatives

These nouns were observed in Noun Classes 3, 9 and 14. The nouns that were collected denote events, actions and abstract ideas. First, deverbatives denoting events are derived nouns in Noun Class 3 formed by the attachment of the prefix *[o-mo-]* to the stem of the verb as shown in the following examples:

	Base	**gloss**	**noun**	**gloss**
(3)	a. -chaak-a	'begin'	o-mo-chakan-o	'beginning'
	b. -roober-i-a	'plan'	o-mo-rober-i-o	'plan'

Data indicate that nouns derived from verbs in Class 3 name events and plans for the future. The term *omochakano* refers to the beginning which in the Biblical sense refers back to the period when the world was created. The word *omoroberio* refers to a plan of events intended to happen in the future. It is evident from the above data that the long vowels in the stem shorten while the final vowel *[a]* in the stem changes to *[o]* in the derivation of impersonal nouns in example (14) above.

Second, deverbatives denoting action were identified in Noun Class 9a and 10a and they are formed by combining the Class Prefix, [e-n-], and the verb stem. The data below were sampled from the list generated during the study.

	Base	**gloss**	**noun**	**gloss**
(4)	a.-busur-a	'sow'	e-m-busur-o	'seed'
	b.-sook-a	'get out'	e-n-sook-o	'getting out'
	c.-gaamb-a	'talk'	e-n-gaamb-o	'a talk'

The nouns in the examples above are assigned to things depending on the action conveyed by the verb from which the noun is derived. The term *ensooko* given to the small river (spring) conveys some characteristic of the verb i.e. oozing of water from the ground. Nouns in this Class denote rivers, seeds, foods and other social cultural objects. Derivation of these nouns is characterized by post-nasal hardening and changing the final vowel *[a]* to *[o]* as shown in (4) above.

Third, Noun Class 14 prefix, [o-bo-], is attached to the verbal stem to form deverbal nouns that denote abstract ideas. The data are presented in 16 below:

	Base	**gloss**	**noun**	**gloss**
(5)	a. -rend-a	'watch'	o-bo-rend-i	'protection'
	b. -toong-a	'create'	o-bo-toong-i	'creation'
	c. -anch-a	'love'	o-bw-anchan-i	'love'
	d. -ra-a	'lead'	o-bo-ra-i	'leadership'

The above data indicate that the nouns in Class 14 refer to concepts which we conceive abstractly. We cannot touch, feel, smell, see, taste or experience concepts such as protection, creation, love and leadership but we only understand them without any physical reality. The derived abstract nouns end with the high final vowel *[i]* which is dissimilar to *[a]* in the base. This implies that when a verb becomes a noun through prefixation, the final vowel has to change to signify the class shift.

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Gerundive nouns

Data indicated that gerundive constructions in Ekegusii are very many since nearly every verb can form a gerund if Noun Class 15 prefixes are attached to it. They are formed from the imperative form of the verb when the prefixes *[o-ko-]* and *[o-go-]* are combined with the verb. Data are presented below:

	Base	gloss	noun	gloss
(6)	a. -iigw-a	'obey'	o-ko-igwer-a	'obeying'
	b. -teer-a	'sing'	o-go-teer-a	'singing'
	c. -rem-a	'dig'	o-ko-rem-a	'digging'
	d. -gend-a	'go'	o-ko-gend-a	'going'
	e. –sib-a	'tie'	o-go-sib-a	'tying'

The final vowels in all the gerunds above are the same as those of the imperative verbs. However, the prefix has two morpheme variants *[o-ko-]* and *[o-go-]*. Dahl's law is operative in Ekegusii where the voiceless consonant *[k]* of the prefix marker changes to *[g]* when it comes before word stems with voiceless consonants through dissimilation. The prefixes *[o-ko-]* and *[o-go-]* are the same as the English suffix *[–ing]* which indicate that a word is a gerund. Baker (2005:5) noted that the gerundive display a mixture of nominal and verbal properties that make us to say that the gerunds are nominal and verbal simultaneously. The words formed in Ekegusii with this prefix function both as nouns and verbs. When they function as verbs they express the progressive aspect in sentences and they are preceded or modified by an adverb. So the gerund is a derived noun since attachment of the prefix results in shifting the grammatical category of the imperative verb to Class 15 of Ekegusii noun class system. In example (7) that follows, adjective acts as a complement of the noun/gerund and it functions as the subject in the sentence.

(7) Ogoteera kwaye nokuya 'Her/his singing is good'

The gerund *ogoteera* 'singing' is preceded by the possessive adjective *kwaye* 'her/his' that acts as a determiner and which comes after the noun in Ekegusii. In the above example, the gerund functions as the subject of the sentence and is post-modified by the possessive adjective. Therefore in Ekegusii, the gerund functions as the noun.

Nouns formed from verb stems in derivational morphology of Ekegusii account for the largest group of nouns in the language. This is a characterization in the data that has already been discussed above. Most of these nouns are distributed in Classes 1 and 2, 3 and 4, 9 and10 and 14 and 15. Nouns derived from verb stems retain semantic and some phonetic characteristics of the verb from which they are derived. Thus these nouns denote events, plans, actions and agentive roles.

Diminutives

Nouns that were collected from Noun Class 12 are referred to as diminutives which bear the diminutive prefix *[a-ka-]*. They are derived through the combination of Noun Class 12 prefix *a-ka-* and verb bases as shown in the data below:

	Verb	gloss	noun	gloss
(8)	a. -ban-a	'prophesy'	a-ka-ban-i	'small prophet'
	b. -ib-a	'steal'	a-ka-ib-i	'small thief'
	c. -riik-a	'write'	a-ka-riik-i	'small writer'

Data indicate that the derived nouns in this Noun Class represent small individuals, for instance, in *akabani, [a-ka-]* means 'small' and *[-bani]* meaning 'prophet'. The name is used

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to show that the person or object referred to is small metaphorically. The final vowel changes from a low central vowel *[a]* to a high front vowel *[i]* in derivation of such diminutives.

Another group of diminutives is derived by the prefixation of Noun Class 7 prefix to the verb base. The following are the sample data:

	Base		**derivative**	**gloss**
(9) a.	-raand-a	'spread'	e-ke-raand-i	'guard'
b.	-gaamb-a	'rule'	e-ke-gaamber-o	'rulling throne'
c.	-saang-a	'share'	e-ge-saangi-o	'communal work'

These nouns are classified under diminutives since the bear the prefix e-ke- thogh in the real sense they do not refer to things as being small. The diminutive nouns in Noun Class 7 exhibit long vowels in their bases. The long vowels precede nasal consonants while final vowel *[a]* alternates with *[i]* and *[o]* as shown in 9 a-c above.

Deadjectival nouns

The study identified and sampled nominals derived from adjective stems from Noun Classes 1 and 14. They are divided into attributive and abstract nominal types and they are presented below:

Attributive nouns

	Base	**gloss**	**noun**	**gloss**
(10) a.	-tambe	'long'	o-mo-tambe	'tall person'
b.	-gotu	'old'	o-mo-gotu	'old person'
c.	-mwamu	'black'	o-mo-mwamu	'black person/thing'

The data presented in (10 a-c) above indicate that when Noun Class 1 prefix, [o-mo-] is attached to the adjective base attributive nouns are formed. These nouns are qualitative in nature since they qualify nouns and retain some characteristics of the adjectives. They form nouns which have some attributes describing the noun. For instance, the noun *omotambe* refers to a tall person in the context of Noun Class 1. The derived noun 'tall person' derives from the base adjective while the prefix *[omo-]* qualifies it to be in Noun Class 1 in Ekegusii.

Abstract nouns

Noun Class 14 data in Ekegusii noun class system consist of deadjectival nouns denoting abstract ideas. Their derivation is through prefixing *[o-bo-]* to the adjective base.

	Base	**gloss**	**noun**	**gloss**
(11) a.	-kendu	'cold'	o-bo-kendu	'coldness'
b.	-riri	'foolish'	o-bo-riri	'foolishness'
c.	-be	'bad'	o-bo-be	'badness'
d.	-kong'u	'hard'	o-bo-kong'u	'hardship'

The nominal derivatives denote properties which are intangible but we can conceptualize them. Formation of these nouns does not display any phonetic alternations on the base of the derivatives.

Class maintaining nominal derivation

Nominal derivation of Ekegusii is mainly prefixal. Data that were collected indicated that some nouns are derived from bases of nouns. The researcher was able to identify two kinds of noun-noun derivation. The base and derivative pairs display similar phonetic characteristics while the prefixes change to indicate modification of the meaning of the base noun. The two types are presented below.

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Abstract nouns

These nouns shift from Noun Class 1 to Class 14. The derived nouns are different in meaning from their bases. So, the names in Noun Class 14 refer to things about which we do not have any physical reality unlike their bases. Some nouns are presented below:

	Base	gloss	derivative	gloss
(12) a.	o-mo-saacha	'man'	o-bo-saacha	'manhood'
b.	o-mw-aana	'child'	o-bw-aana	'childhood'

The prefix *o-bo-* replaces Noun Class 1 prefix which is used in nouns that represent animate things which are tangible to form abstract nouns.

Diminutive nouns

The researcher observed that nouns shift their class membership to form diminutives. For example, nouns from Noun Classes 1 and 9 shift to Noun Class 7 when prefix of the class is attached to the base in formation of diminutive nouns presented below.

	Base	gloss	noun	gloss
(13) a.	o-mo-ib-i	'thief'	e-ke-ib-i	'small thief'
b.	e-mor-i	'calf'	e-ke-mor-i	'small calf'

The meaning of the base is modified by the prefix *[e-ke-]* to express smallness of the thief in (13a) above. A speaker may use the diminutive noun to mean that the thief is either young or nonspecialized. The two kinds of thieves, small thief and big thief, are differentiated based on how much they can steal. The base and derivative have some semantic relationship.

Morphophonological operations and constraints in Ekegusii noun formation

Formation of nouns is associated with a number of both vowel and consonant changes. General Optimality Theories' constraints, Transderivational Anti-faithfulness theory's (TAF) principles and constraints (Alderete 2001) are used to explain both vowel and consonant alternations. TAF constraints are negations of faithfulness constraints (McCarthy & Prince 1995) and TCT (Benua 1997). The researcher uses markedness and faithfulness constraints (McCarthy &Prince 1993, 1995**)** to explain data. Markedness constraints impose requirements on the structure wellformedness of the output. The markedness constraints used in this study include: ONSET, NOCODA, NLV and *VV. ONSET requires that syllables must have onsets, NOCODA requires that syllables must be open, NLV prohibits long vowels and *VV prohibits vowel sequences. Faithfulness constraints explain the relation between the input and output. The output form must match the input form in some specific way. Therefore they prevent every input from being realized as a different form in the output. The faithfulness constraints are obeyed if the output candidate is identical in every regard to the input. Markedness and faithfulness constraints conflict in formation of the outputs so that the winning candidate violates the constraints. MAX_IO(X) fathfulness constraint prohibits linguistic feature deletion requiring that input segments must have output correspondents. DEP_IO (X) prohibits linguistic feature insertion and requires that output segments must have input correspondents. IDENT_IO (X) constraint prohibits linguistic feature mutation, PRENASAL prohibits prenasalization and PARSE- μ constraint requires that all moras are parsed into syllables.

Transderivational correspondence OO constraints (Benua 1997) are also used in explaining data. TCT constraints explain phonetic similarities between base and derivative outputs pairs. They were developed from the original faithfulness constraints which asses input- output pairs but TCT constraints asses output candidates. TCT constraints have a general constraint OO_FAITH- X which requires that every element of the derivative form has a correspondent

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in the base and vice versa. They borrow the symbols of faithfulness constraints i.e OO-MAX-X etc.

The current study employed TAF theory as its conceptual framework but because of its inadequacy in analyzing the data that was collected, the researcher used other OT constraints in interpreting the data. Anti-faithfulness constraints by Alderete (2001:211-213) were used in identification of the alternating features. ¬ OOMAXIMALITY constraint family requires obligatory deletion of at least one x in the s1 to s2 mapping, ¬ OODEPENDENCY constraint family requires obligatory insertion of x in S2 not present inS1 and ¬ OOIDENTITY (F) constraint family requires that at least one pair of correspondent segments must differ in feature F. TAF constraints can be simplified further as follows:
¬ OO- MAX – X: requires obligatory deletion of feature X
¬ OO- DEP- X: requires obligatory insertion of feature X
¬ OO- IDENT-X: requires obligatory mutation of feature X

The TAF constraints above are formulated in tableaux proposed in OT together with rankings in relation to how nominal derivation trigger the morphologically motivated phonology. The morphophonological changes that were observed are discussed below.

Vowel changes in nominal derivation
These are changes of the phonetic qualities of vowels in derivation of nouns in Ekegusii. The derivational prefixes induce vowel changes at the initial, medial and final positions of the base. Some of these changes are regular while others are irregular. In particular, vowel changes at the final position are regular except for a few cases where the changes depend on the type of derived nouns. The findings are presented in the following sub-topics.

Vowel Deletion
Deletion is the complete loss of a sound from a word. Derivation of deverbal nouns indicated that some segments are eliminated from the base in the course of forming nouns.

	Base	**gloss**	**derivative**	**gloss**
(14)	-eegw-a [ɛ:ɣwa]	'be given'	e-ke-ɛɛgw-a [ekɛ:ɣwa]	'gift'

Combination of the imperative verb with a noun class prefix in formation of a diminutive noun results in deletion of the vowel at the morpheme boundary.

Markedness constraint conflicts with faithfulness constraint in formation of the surface structure *ekeegwa*. The formation of the noun results in loss of a vowel and this cannot be explained by TAF constraints since it is a case of root dominance. TAF constraints specify and explain phonetic alternations the prefix triggers on the base. The researcher explains example (14) using faithfulness and markedness constraints proposed by McCarthy & Prince 1995 as shown in Table 5 below.

[ɛ:ɣwa] ⟶ [ekɛ:ɣwa]

Table 5: Vowel deletion in derivation

Base	Derivative /eke+ɛ:ɣua/	VV*	IO-MAX[upper]
[ɛ:ɣwa]	+i.ekɛ:ɣwa		*
	ii.ekeɛ:ɣwa	*!	

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Diminutive formation is characterized by deletion of the upper-mid vowel as indicated by the above example in Table 5. The upper-mid vowel *[e]* occurring in a sequence with the lower-mid vowel *[ɛ:]* is deleted due to incompatibility of features between the stated vowels. [e] [+ATR] of the prefix meets with [ɛ] [-ATR] of the base and the base wins over the prefix which leads to deletion**.**

In OT, there is a markedness constraint prohibiting vowel sequences within a single phonological word *VV. This constraint is inviolable in that vowel deletion occurs to avoid its violation. Its satisfaction results in violation of the faithfulness IO-MAX [upper] constraint. As shown in Table 5 above, candidate (i) is optimal following the ranking *VV>>IO-MAX where the faithfulness constraint is violated at the expense of satisfying *VV, the constraint that is against vowel sequences.

Welmers (1974:39) observes that vowel elimination exists when two vowels occur in a sequence across a morpheme boundary. In addition to that, Hyman (2003) and Mtenje (2007) contend that vowel sequencing is prohibited in Bantu languages and this is a phenomenon that is presented in (14) above. Hyman (2003) explains that vowel, V1V2, in a sequence within or across a domain resort to elision where either V1 or V2 is deleted.

Similarly, Mtenje (2007) found out that vowel deletion occurs in Cindali, Cinyika and Citonga, Malawian Bantu languages, to avoid vowel sequences. Therefore, a conclusion can be drawn from the above data that Ekegusii does not allow sequencing of a short and long vowels (V+V:) in words instead, it prefers long vowels or different vowels with compatible features in a sequence. When prefixes with short vowels are combined with stems with long vowels to form the diminutive noun, the form *[ekɛ:gwa]* 'gift' emerges instead of *[ekeɛ*:g*wa]* ' this be given' as shown above, the prefix vowel is elided due to the conflict of [+ATR] of [e] and [-ATR] of [ɛ] of the base since there is no compromise in between. One vowel is deleted so as to create a CV syllable structure commonly found in Ekegusii.

Vowel alternation

Deverbal nouns in Noun Classes 3 and 14 display vowel quality alternation when the class prefixes are attached to the base. Long vowels at the medial position of the base shorten upon prefixation.

	Base	**gloss**	**derivative**	**gloss**
(15)	a.-chaak-a [c**a:**ka]	'begin'	o-mo-chakan-o [omoc**a**kano]	'beginning'
	b.-roober-i-a [ro:ßeria]	'plan	o-mo-roberi-o [omor**o**berio]	'plan'

The pre-prefix and the Noun Class marker 3 *[o-mo-]* are combined with the imperative verb to form the impersonal devebative noun. The consequence of the switch from verb form to noun is vowel alternation at the medial and final positions as it is clear from the above data. The long, low central vowel *[a:] ~ [a]* at the medial position shortens in the formation of the impersonal deverbatives presented in (15a) above. The final vowel changes from *[a]* to *[o]* in derivation of the impersonal deverbatives. These vowel changes occur when a class changing prefix is attached to the imperative verb to derive nouns.

The formations of personal nouns also result in vowel alternation. The interaction of Noun Class 1 prefix with the verb base to form deverbative nouns results in the following nouns:

	Base	**gloss**	**derivative**		**gloss**
(16)	a. -eesik-a [e:sika]	'respect'	o-mo-isek-e	[omoiseke]	'girl'

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b.-kung-a [kuŋga] ‘protect’ o-mo-kung-u [omokuŋgu] ‘woman’

Vowels at the medial and final positions alternate when the form changes from the imperative verb to a noun. In example (16a), the vowel *[e:] ~ [i]* medially since [*o]* and *[e:]* are both upper mid vowels but *[e]* is a front vowel and *[o]* is a back vowel. The upper mid front vowel *[e]* changes to a high front vowel *[i]* when it combines with an upper mid back vowel *[o]* through dissimilation to make articulation easier. The low, final vowel *[a]* changes to the upper mid vowel *[e]* due to the change from a verb to noun. Also, prefixation of *[–kung-a]* results in *omokungu* where the final low, back vowel *[a]* becomes a high back vowel *[u]*.

Transderivational Anti-Faithfulness constraints require an opposition between the base and the derivative. Derivation of deverbal nouns displayed vowel changes. The derivation of the personal noun below illustrates the changes.

Vowel alternation is explained in Table 6 below using OT, TCT and TAF constraints in order to show the output structure and how it is assessed using these approaches .TAF constraints are negations of faithfulness constraints in TCT and CT and that is why they cannot explain data without making reference to OT, TCT and CT. Constraint violation and satisfaction in derivation of the noun *omoiseke* ‘girl’ is presented in Table 6 below.

[ees**i**ka] ⟶ [omois**e**ke]

Table 6: Vowel alternation in nominal derivation

Base	Derivative /omo+e:sika/	*VV	¬OOdomIDENT[high]	OOdomIDENT[high]	OI-IDENT [high]
[eesika]	+ i.omoiseke			*	**
	ii.omoeesika	*	**!		

¬OOdom-IDENT [high] >> OOdom-IDENT [high]

The upper-mid vowel *[e]* in the base changes to the high vowel *[i]* when the derivational prefix is attached to it. The derivation prefix induces alternation of the stem medial vowel. Such an alternation satisfies the high ranked TAF constraint ¬OOdom- IDENT [high]. Thus the winner indicated by the symbol [+] is the most harmonic output. It least violates the high ranked TAF constraint, but it violates the faithfulness constraint OO dom-IDENT [high] which is ranked below ¬OOdom- IDENT [high].

According to McCarthy & Prince (1993, 1995), unfaithful mapping of the input to output is as a result of the interaction of markedness and faithfulness constraint. The output, *omoiseke*, in Table 6 (i) above is unfaithful to the input *[omo- + e:sika]*. The upper-mid back prefix vowel *[o]* is incompatible with the stem initial long, upper-mid front vowel *[e:]* so the stem vowel changes to a high front vowel *[i]*. This leads to satisfaction of the markedness constraint *VV which prohibits vowel sequences which in turn enforces violation of the faithfulness constraint, OI-IDENT [vowel] that prohibits linguistic feature alternation.

Consonant changes in derivation

Consonant changes were observed in this study in nominal derivation. Formation of the noun is accompanied by mutation of the initial consonant of the base. They are explained below using Transderivational Anti-Faithfulness Theory.

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Consonant mutation

Mutation refers to the stem internal phonetic change that is conditioned by word-formation processes. Consonant mutation in this study is manifested in two stages: post nasal hardening and nasal assimilation. These stages are discussed below.

Post nasal hardening

Hardening is a process which turns voiced continuants into non-continuants. This process turns the voiced continuant [β] into a non-continuant [b] and the voiced flapped liquid [r] into a stop [d] when preceded by the nasal prefix. The following data illustrates the contrast existing between the verb base and the derived noun.

	Base	**gloss**	**derivative**	**gloss**
(17) a.	-bong-a [βoŋga]	'destroy'	e-m-bong-i	[embongi] 'weevil'
b.	-busur-a [ßusura]	'sow'	e-m-busur-o	[embusuro] 'seed'
c.	-raager-a [raaɣera]	'eat'	e-n-daager-a	[endaaɣera] 'food'

Noun Class 9a nasal prefix has two surface variants: *[n]* and *[m]*. The deverbal nouns in 17(a-c) are derived by attaching the nasal noun class marker before the verb base. Consequently, the bilabial fricative *[β]* of the base (17a and b) becomes *[b]* and the flapped liquid *[r]* of the base (17c) becomes *[d]* in formation of a noun.

Homorganic nasal assimilation

Homorganicity refers to a process where the nasal prefix preceding the stops [b] and [d] are articulated at the same point with the stops after consonant hardening. Nasal assimilation in Ekegusii involves a nasal prefix assimilating to the point of articulation of the initial consonant of the base it precedes. The following are nouns that were selected from Noun Class 9a.

	Base	**gloss**	**derivative**	**gloss**
(18) a.	-busur-a [ßusura]	'sow'	e-m-busur-o [embusuro]	'seed'
b.	-bong-a [ßoŋga]	'destroy'	e-m-bong-i [embongi]	'weevil'
c.	-raager-a [raaɣera]	'eat'	e-n-daager-a [endaaɣera]	'food'

The above data shows changes that occur in derivation of the noun. The nasal prefix [–n-]/[-m-] of Noun Class 9a *[e-n-]* combines with the imperative verbs *busura*, *bonga* and *raagera*. Then, nasal prefix assimilates to the point of articulation of the first consonant of the base to form prenasalized consonants. In 18 a and b above, the prenasalized consonant *[mb]* is formed and in 40c the prenasalised consonant *[nd]* is formed. The nasal and the following consonant become homorganic are articulated as a single sound.

In transderivational Anti faithfulness Theory, consonant mutation occurs when TAF constraints override faithfulness constraints. Consonant mutation in derivation and pluralization is illustrated in Table 8 and 9 below:

Consonant mutation is explained in Table 8 below using both OT and TAF theories. The markedness constraint NOCODA and faithfulness constraint PRENASAL explain constraint conflict and formation of the prenasalised consonant while TAF constraint ¬OO-IDENT specifies the alternating feature in formation of the noun *embusuro* 'seed' as shown in the table below.

[**ß**usura] ⟶ [em**b**usuro]

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Table 8. Consonant mutation in nominal derivation

Base	Derivative /e-n+ßusur+a/	NOCODA	PRENASAL	¬OOdom-IDENT[cont]	OOdom IDENT[cont]	IO-IDENT[cont]
[ßusura]	+ i.embusuro		*		***	***
	ii.en.ßusura	*		**!		

¬ OOdom-IDENT [cont] >> OOdom-IDENT [cont]

The fricative *[ß]* in the base alternates with the obstruent *[b]* when the dominant nasal prefix is combined with the base to derive a deverbal noun. The Anti-Faithfulness constraint IDENT requires obligatory mutation of a given feature. In this case, the constraint triggers loss of the feature [+cont] of the initial consonant of the stem such that the initial *[ß]* [+continuant] of the deverbal noun becomes an obstruent *[b]* [-continuant] which contrasts with the base in the feature [continuant] upon prefixation. The winning candidate, (i) *embusuro*, satisfies the high ranked TAF constraint ¬ OOdom- IDENT [cont] which outranks the faithfulness constraint OOdom-IDENT [cont] and requires mutation of the consonant of the stem. This leads to violation of the related faithfulness constraint.

Consonant mutations exemplified in Table 8 and (9a-b) above occur since the nasal prefix assimilates to the place of articulation of the oral consonant which consequently leads to formation of prenasalized consonants. Surface realization of prenasalized consonants is the result of the conflict between PRENASAL and NOCODA constraints (McCarthy & Prince 1993, 1995). PRENASAL prohibits prenasalized consonants while NOCODA prohibits codas. There is another way of interpreting the above features. Wolf (2007:1-5) conceives consonant mutation as the attachment of floating features in the underlying representation to output segments. He suggested the MAXFLOAT constraint requires that all phonological material that is not linked in the input is fully preserved in the output i.e MAXFLOAT prohibits deletion of floating features. This constraint works closely with markedness constraint *FLOAT which is against ungrammatical forms in a language to trigger attachment of floating features. So both features [+continuant] and [-continuant] exist in the underlying level. The feature [-cont] docks to the initial consonant of the stem when the derivational prefix is attached to it and this leads to violation of the IDENT [cont] constraint and satisfaction of MAXFLOAT constraint which states that all autosegments floating in the input have output correspondents. In reference to Table 8 and 9 above, the phonological feature [-continuant] of the prefix is associated to the root node of the adjacent stop triggering delinking of the [+ continuant] feature and hence mutation of the initial segment of the stem.

Morphologically motivated phonology in Ekegusii indicates that Antifaithfulness constraints are ranked above Faithfulness constraints (ANTI-FAITHFULNESS>>FAITHFUNESS). This is so because of dominance effects of some derivational prefixes which mutate segments in the stem. Phonetic contrast between the base and the derivative occur in a morphological environment which triggers it. These findings are equivalent to those by Akinlabi (1996) who found out that morphologically conditioned phonology in Terena triggers nasalization of sonorants where the first person singular in Terena is marked with the feature [+nasal]. Additionally, Kurisu (2001) shows that affixed plural forms in German incur mutations in the base. The researcher uses Realize Morpheme constraints which require derived forms to differ in any way from the morphological bases.

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5. CONCLUSION

Findings of this study indicate that nominal derivation is mainly through prefixation. The dominant prefixes induce phonetic modification of the base through derivation. This implies that particular nominal derivations are morphologically conditioned. The dominant prefixes trigger idiosyncratic phonetic alternations in the base in formation of acceptable structures in Ekegusii. Such alternations satisfy Transderivational Anti-Faithfulness constraints which are ranked above the OO and IO Faithfulness constraints. Therefore, antifaithfulness constraints dominate faithfulnesss constraints in Ekegusii. In addition to that, findings of the study give us evidence that nouns in Ekegusii are systematically organized in the Noun Class system in the language. Class groupings are based on the type of prefix a base takes and so words which have similar prefixes are grouped together. Derivation modifies the meaning of the base in formation of new derivatives though the meanings of bases and derivatives are related but they are not the same. This is clearly indicated by the data that were collected as presented in this study.

6. RECOMMENDATIONS FOR FURTHER RESEARCH

This study describes segmental morphophonology in Ekegusii noun formation through derivation. There is need to expand knowledge on the Ekegusii where, to the best of my knowledge, most lexical items have not been documented and some morphophonological processes have not been discussed. Hence, there are other crucial areas that need thorough investigation. These areas are outlined below:

i. A study of the morphologically conditioned suprasegmental features in Ekegusii nominal derivation and inflection for example tone, vowel harmony, consonant harmony and syllabification.
ii. Morphophonemics of other word formation processes like compounding, reduplication and conversion.
iii. An investigation of derivation of adjectives and adverbs.

The interaction of morphology and phonology at the phrasal level for instance the noun phrase, verb phrase and adjectival phrase

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