

The consonant system of Alege

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Abstract

Alege is a minority Bendi language spoken in Alege community in Cross River State, Nigeria. Hitherto, the language remains largely undescribed. This study therefore examines the consonant system of the language. The goal is to provide an adequate description of the distinctive consonant inventory that will be useful in designing an orthography for the language. Data for this study were gathered through series of fieldwork undertaken between 2016 and 2019 in the community. The study adopts a descriptive approach for the analysis of both phonetic and phonemic data. For instrumental analysis, a palatography test is used to interpret phonetic data while the Phonology Assistance is employed for phonemic analysis. In addition, the study also adopts the classical phonemics method in determining the phonemic status of consonants in the language. Based on the findings, thirty-seven (37) phonetic consonants were identified. Using the principle of contrast, twenty-nine (29) phonemes were established in the language. Although a phoneme, the voiced labiodental fricative /v/ it has very limited occurrence in the language. The voiced bilabial fricative [β] is considered a social variant of the voiced bilabial stop [b] since it is conditioned by the age of the speaker. The voiced bilabial and voiced alveolar nasals /m n/ are the only consonants permitted as codas in the language. Homorganic nasal assimilation and labialization are some of the prevalent features of the consonant system of the language.

Keywords: Alege Language, Consonant System, Phonetic Analysis, Phonemic Analysis.

Introduction

Alege (ISO code: 693-3 alf) is a minority Bendi language spoken in Alege community. The Bendi (Southern Bantoid) languages are located in the northern part of Cross River State in South-eastern Nigeria and adjacent parts of Cameroon (Crozier and Blench 1992, Blench 2001). Alege community is located in the southern part of Obudu Local Government Area, Cross River State, Nigeria. On the Expanded Graded Integrational Scale (henceforth EGIDS), Alege is rated level (6a) – Sustainable Orality.

Like Alege, languages that exist through this oral medium perform very limited function within the community and are more susceptible to plunge into extinction. With the high rate of urban migration of young people from the community mainly for education and economic

reasons, there are genuine concerns on the continued sustainability of the language. Due to this awareness, in 2014, the Alege community inaugurated a language committee to pioneer a language development project in the language. The first of such efforts to be undertaken is a Bible translation project. For language developers (researchers and speech community), adequate language description is an essential prerequisite for other activities in favour of language development such as orthography development, use grammar, primers, dictionaries and other literacy materials. Since the Alege language has no previous orthography, providing an adequate description of the sound system is key in developing an orthography for the language. This study forms part of the general attempt towards resolving the problem of unavailability of a writing system in the language.

Literature review

Human language when vocalized is perceived as audible sound. Speech sounds are only meaningful to those who have acquired or learnt the language. In phonological analysis, the meaning that words hold in any language is based on features of the composite segments. While some segments are regarded as phonemes, others are referred to as allophones. The concept of the phoneme plays a central role in phonology. McCarthy (1994) defines a phoneme as a contrastive element by which two words can be distinguished. In discussing the phoneme, Clark and Collin (2006) explains that in languages, some differences in pronunciation are crucially distinctive. It is these distinctions or contrasts that are recognised by speakers of the language as making different words and acknowledged by linguists as systemically functional. Yul-Ifode (1999) notes that in the phonological system of any language, some sounds are distinctive, effecting meaningful changes while others are not. The distinctive sounds of a language are called phonemes while the non-distinctive sounds are called allophones.

In concrete terms, these phonemes are defined in terms of consonants and vowel. All languages of the world have a phonemic inventory made up of distinctive sounds, classified as vowels and consonants based on certain phonetic parameters. Davenport and Hannahs (2010) explain that the essential difference between vowels and consonant sounds have to do with the degree of stricture, that is, the distance between the active and the passive articulators. For consonants there is some kind of obstruction in the oral tract, whereas for vowels there is no such hindrance to the out flow of the air.

Theoretical Framework

This research is a descriptive study since the overall goal is to provide a description of the consonant system of the language in a way that is useful in developing the orthography. However, every phonological analysis must be done within a certain theoretical framework. As succinctly put by Hyman (1975:59), in phonology, “the specific analysis of the phonetic data of a language greatly depends on the phonological theory underlying the analyst’s work, a fact that must be constantly kept in mind”. The classical phonemics theory provides us with the necessary framework for description.

Classical Phonemics

Phonological development in the 20th century witnessed the emergence of American and European structuralism which has become the basis for nearly all research in phonology. Although Ferdinand de Saussure left a legacy for modern structuralism in linguistics in general, prominent figures of this period were Leonard Bloomfield, Edward Sapir, Roman Jakobson and Nikolai Trubetzkoy. Classical phonemics as an offshoot of structural grammar, emphasizes the study of the structures of language and analytical or discovery procedure. For instance Pike (1947:63) succinctly defines a phoneme as follows: “a phoneme is one of the significant units of sounds arrived at for a particular language by the analytical procedures developed from the basic premises previously presented”.

The basic premise referred to by Pike is highlighted by Hockett (1942:100) who defined a phoneme as “a class of phones, determined by six criteria which include similarity, non-intersection (no phonemic overlapping), contrastive and complementary distribution, completeness, pattern congruity and economy. In this study however, our focus will be on the three principal criteria as captured by Yul-Ifode (1999). They include; functional contrast, variation and distribution.

Empirical studies

In terms of research, very little work has been carried out on Alege. In fact, most previous studies that make mention of Alege are basically attempts towards the genetic classification of the Bendi family within the Cross River group. Even on Bendi, Blench (2004) laments that very little research has been conducted on Bendi languages and modern works that exist, mostly on Bekwara and Bokyi, remain unpublished and inaccessible. Blench’s (2001) study on comparative Bendi includes few examples of lexical items from Alege. Although fairly comprehensive (compared to other previous studies), the data provided were however limited to few words gathered from multiple secondary sources. Otronyi, Ajaegbu, Muniru, and Nweke (2013) conducted a sociolinguistics survey on Alege, Ukpe and Ubang. The main goal of the survey was to find out the possibility of widespread bilingualism in Alege, Ukpe, Ubang and Bette among speakers of Alege, Ukpe and Ubang and to determine the most suitable language(s) each language group understands and accepts as the best for a standard written form that would serve all groups. Their report showed that Alege is closely related to Ukpe with which it shares 60% lexical similarity and Ubang with which it shares 53% lexical similarity. As a result of this relationship, there is some form of mutual intelligibility (to a varying degree) among adult speakers but seldom children. This is likely due to the fact that these communities have had a long history of social contact through intermarriages, trading and schooling. From their findings, they conclude that the bilingualism (or multilingualism in some cases) in Alege, Ukpe and Ubang is acquired not inherent.

Irrespective of the dearth in literature, some languages within the Bendi family to which Alege belongs have enjoyed more recent scholarship. Bendi languages like Bekwarra, Boyki, Utugwang have been previously described. According to UNESCO’s (1993) publication *Alphabets of Africa*, Bekwarra language comprises twenty consonants; /p, b, t, d, k, g, kp, m,

n, ɲ, ŋ, f, ʃ, h, tʃ, dʒ, r, l, w, y/ and five vowels; /i, e, u, o, a/. One significant feature of the phonology of this language is the prevalence of palatalisation and labialisation processes. In Bokyi language, Ayugha (2011) notes that there are basically seven vowels /i ɪ e a o u ʊ/ and twenty distinctive consonant sounds /p b t d k g kp gb m n r f s z ʃ tʃ dʒ l j w/.

Vowel lengthening, consonant palatalisation and labialisation are some prevalent features of the sound system of the language. In addition to their shared linguistic relationship, Utugwang and Alege communities share the same boundary and the people of both communities have a lot of interaction. Ayugha (2013) notes that Utugwang has twenty-seven consonants; /p, b, t, d, k, g, kp, gb, m, n, ɲ, ŋ, f, v, ʃ, h, tʃ, dʒ, r, l, w, j, k^w, g^w, ŋ^w, h^w/ and seven vowels; / i, e, ε, u, o, ɔ, a/. Vowel lengthening and vowel hiatus are some distinct features of the sound system of the language.

Geographically, Alege shares boundaries with Mbube (speakers of Mbe language) in Ogoja Local Government Area. Although the Mbe language does not belong to the Bendi family, the relevance of its geographical proximity on language research such as this is significant. Mbe is an Ekoid language spoken by the Mbube people in Ogoja Local Government Area of Cross River State. Even though it does not belong to the Bendi family with Alege, both Alege and Mbube share a common geographical boundary. The indigenes of both communities have had centuries of constant interaction. Bangbose (1967) examines the phonological structure of the Mbe language. His findings show that Mbe has twenty-six distinctive consonants; /p, b, t, d, k, g, kw, kp, gb, m, n, ŋ, f, s, ʃ, h, ts, dz, tʃ, dʒ, r, l, w, y, ỹ, ỹ̃, seven simple vowels; /i, e, ε, u, o, ɔ, a/ and ten diphthongs; /iε, ia, , ie, io, iɔ, ue, ua, uɔ, uo, ue/.

Methodology

This research is a qualitative study whose focus is the description of synchronic features of the language. The cross-sectional design which involves collecting a comparatively large amount of data on how the language is currently spoken in the speech community was employed. The estimated number of the Alege people according to the Ethnologue is about 16,300. Using the purposeful sampling technique ten (8 males, two females) respondents were selected with consideration of age, gender and competence in the language. Out of the ten respondents, two (males) reside in Port Harcourt

Data for this research were mainly gathered during the course of 5 fieldworks between 2016-2019. Elicitation of over 2000 lexical items was also done using the SIL Comparative African Wordlist (Snider and James, 2004). The Marantz PMD 660 digital recorder was used for recording. Data of natural and connected speech, narrative texts and folktales were also recorded.

All the data for this research was first transcribed manually with the aid of IPA help; a software developed by the Summer Institute of Linguistics (SIL). Data management was effectively done with the aid of Fieldwork Explorer – a data management software developed by the SIL.

To ascertain the various articulators that are involved in the production of certain consonants in the language, palatography and linguography tests were carried out. For the identification of phonemes in the language, we used the minimal pair test and further analysis gave consideration to the distribution of sound segments in the language. Further phonological analyses were aided by the Phonology Assistant software – developed by the SIL.

Consonant System of Alege

After a careful phonetic analysis and transcription of the data gathered, a total of thirty-seven phonetic consonant sounds were identified in the language. These sounds are classified based on their articulatory features in the table 1.

Table 1: Phonetic chart of Alege consonants

	Bilabial	Labialized Bilabial	Labio-Dental	Alveolar	Labialized Alveolar	Palatal Alveolar	Labialized Palatal Alveolar	Palatal	Velar	Labialized Velar	Glottal	Labialized Glottal
Plosive	p b	b ^w		t d	t ^w			k g	kp qb	k ^w q ^w		
Implosive	β											
Nasal	m			n				ɲ	ŋ	ŋ ^w		
Flap				r								
Affricate				ts dz		tʃ dʒ	tʃ ^w dʒ ^w					
Fricative	β		f v	s z		ʃ	ʃ ^w				h	h ^w
Approximant				l				j		w		

In ascertaining the place of articulation of consonants, certain instrumental analysis helps to identify the place in the oral cavity where contact is made.

Instrumental analysis of Consonants in Alege

In this study, palatography and linguography tests were used to investigate three categories of sounds; alveolar, post-alveolar and palatal sounds as shown in fig 2-4 below. The pictures of the roof of the mouth and the tongue provide a clue as to what parts of the articulators are involved in the production of each group of sounds. For alveolar sounds, (figs. 2), the part of the floor of the mouth coloured black is the rough ridge (the alveolar) just after the teeth. In figs. 3, we can see the black colouring extending from the alveolar ridge down to some part of the hard palate. Sounds produced with contact in both the alveolar and the palate is referred to as post alveolar sounds. For the palatal sounds, we see that the region after the teeth is relatively untainted by the black colouring. The region mostly covered is the entire length of

the palate. From the pictures of the tongue, we see that the tip - as in /d/, /n/, /r/, /l/, mid as in /z/, dz/, /j/ and blade – as in /ʃ/, /dʒ/ play a very important role in the production of sounds. It is worth nothing that the difficulty in controlling the active articulator (the tongue) before and after contact poses some difficulties.

Alveolars

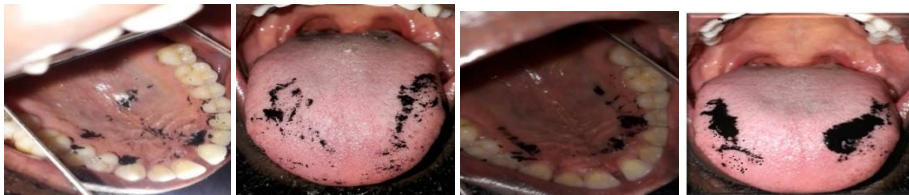
/d/as in /dó/ ‘beat’

/n/as in /nè/ ‘spread’



/r/as in /ré/ ‘watch’

/z/as in /zí/ ‘eat’



/dz/ as in /dzò/ ‘divide’

/l/ as in /lé/ ‘shoot’

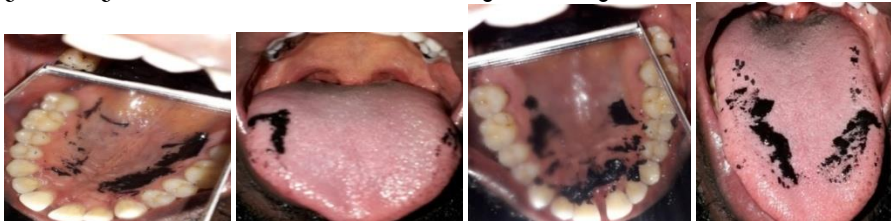


Figs. 2. Palatograms and lingograms for alveolar consonants in Alege

Post Alveolars

/ʃ/as in /ʃí/ ‘burn’

/dʒ/as in /dʒó/ ‘lean’



Figs. 3. Palatograms and lingograms for Post alveolar consonants in Alege

It is significant to note the marked difference between the palatogram for the voiced palatal alveolar affricate /dʒ/ and the voiceless palatal alveolar fricative /ʃ/, even though they have the same place of articulation. The picture (fig. 3) for /ʃ/ shows a very slight colouration of the alveolar region due to the fact that a fricative articulation does not require a firm contact of the articulators. The voiced palatal alveolar affricate /dʒ/ on the other hand is a double articulated sound which is produced with the firmness of a plosive and the partial contact of a fricative. This difference in the intensity of the contact between the voiced palatal alveolar

affricate /dʒ/ and the voiceless palatal alveolar fricative /ʃ/ explains the difference in the palatograms in fig. 3.

Palatals

/ɲ/ as in /ɲá/ ‘suck’

/j/ as in /jò/ ‘fair’



Figs. 4. Palatograms and lingograms for palatal consonants in Alege

The analysis provided so far has been centred on the phonetic features of the consonants of the language. To establish the distinctive consonants in the language, a phonemic analysis is useful in determining which sound is a phoneme and which is an allophone.

Phonemic analysis of Alege consonants

From the phonetic analysis, thirty-seven (37) phonetic consonants were identified. However, not all the sounds are phonemic. In establishing the phonemic status of these sounds, we considered their contrast, distribution, environment and variation in relation to other sounds. Based on these parameters, twenty-nine (29) phonemes were established while the allophonic relationship of other phonetic sounds were also examined and explained.

In this section, we present three different pairs of minimal contrast of each sound in table 2

Table 2: Minimal pair test of Alege consonants

Phonemes	Minimal Pair 1	Minimal Pair 2	Minimal Pair 3
p	pré ‘mix’ gbrè ‘crush’	òpì ‘copper’ ódí ‘gallbladder’	pám ‘avoid’ k ^w ám ‘thresh/beat’
b	bé ‘come’ gé ‘jump’	èɲìbèné ‘slither’ èɲìrèné ‘drizzle’	ìká ‘jaw’ ìbá ‘wound (animal)’
t	támfé ‘accuse’ kámfé ‘bump’	ótí ‘table’ ógb!í ‘fruit’	bá ‘slaughter’ wá ‘that’
d	ódí ‘gallbladder’ ófí ‘month’	rèdò ‘cold weather’ rèkò ‘harmattan’	ódí ‘gallbladder’ ógb!í ‘fruit’
k	ìká jaw ìlá toilet	èkó ‘fish scale’ énó ‘sap’	òké ‘kernel’ òré ‘money’
g	gí ‘pluck’ mì ‘grow’	gé ‘jump’ g ^w è ‘get’	ògé ‘sweat’ òpè ‘wife’
k ^w	k ^w ám ‘scrape’ kám ‘squeeze’	k ^w è ‘take’ jê ‘sell’	òk ^w à ‘hoe’ ònà ‘law’

g ^w	g ^w á wá	'join' 'that'	òg ^w è òpè	'in-law' 'wife'	g ^w á fá	'join' 'castrate'
kp	kpé fè	'light(v)' 'blow(v)'	m̀!kpé m̀gbé	'stupid' 'catfish'	kpé vé	light(v) ascend
gb	gbè mé	'polish' 'recover'	ógbá ósá	'animal track' 'engagement'	ó!gbí ótí	'fruit' 'table'
β	àβè àkpè	'threshing floor' 'hawk'	òβò òdzú	'termite' 'omen'	ìβò isò	'hat' 'elephant'
m	mè vè	'finish' 'ascend'	émú éhú	'juice' 'foam'	ómú órú	flour rope
n	nà bà	'stretch' 'sharpen'	ènìmèné èrìmèné	'bare' 'whitewash'	ìnè ifè	'four' 'reverence'
ɲ	òná òtsá	maggot sheep	ɲó tó	'push' 'draw (water)'	òpè ògé	'wife' 'sweat'
ŋ ^w	ŋ ^w á wá	'enter' 'that'	ŋ ^w é nè	'drink' 'spread'	ŋ ^w é fè	'drink' 'put'
r	rím sím	'pierce' 'harvest'	rá wá	'why' 'that'	ríè dzíé	'hide' 'torn'
f	fám fóm	'harvest' 'pull'	fré pré	'steer' 'mix'	kífé kídzé	'honour' 'leave(v)'
v	vé tsé	'ascend' 'dive'	vé lé	'ascend' 'shoot'	vé dzé	'ascend' 'fat'
s	sí bí	'cover' 'ripe'	ìsò ìfò	'bennie seed' 'hyena'	rísí rízí	'lay down' 'food'
z	zí tí	'crunch' 'shell (v)'	òzì òpì	'thief' 'copper'	ízìn ìpín	'few' 'sharp'
ʃ	fóm kóm	'pull' 'hit/strike'	ʃí gí	'nurse (baby)' 'pluck'	ìfò ìβò	'hyena' 'hat'
h	hó sô	'ask' 'wash'	éhú émú	'foam' 'juice'	ihó ìpó	'buffalo' 'soul'
ts	tsé té	'lay' 'dig'	rítsé rìbé	'foot' 'marriage'	itsá idá	'flock (of sheep)' 'root'
dz	dzé té	'fat' 'peel'	ìdzá idá	'grandchild' 'root'	dzé gé	'move' 'jump'
tʃ	tʃó bó	'send' 'open'	tʃí tí	'groan' 'shell (v)'	òtʃí òdì	'cackle' 'venom'
dʒ	dʒó tó	'lean' 'fade'	èdʒè èbè	'wide' 'we'	dʒô nô	'hear' 'smell'
l	lé té	'shoot' 'peel'	ìlá ìbá	'toilet' 'bruise'	ól!é óp!é	'anus' 'canoe'
j	jé k ^w é	'slice' 'hold'	jó nó	'light (complexion)' 'choke'	jé βé	'slice' 'animal trap(v)'

w	wá ‘that’ pá ‘untie’	ówó ‘needle’ ógó ‘belch’	wá ‘that’ g ^w á ‘join’
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All the consonants provided in table 2 are considered phonemes, since they fall into minimal contrast with at least another consonant sound. From our investigation (as shown in table 2) the voiced labiodental fricative /v/ even though it shows contrasts, has very limited number of occurrence. In a data of over two thousand words analysed for this study, the voiced labiodental fricative /v/ appeared in just four lexical items. One of these words is an English loanword - /ògòvà/ which is the adapted form for English /gwa:və/ ‘guava’. One plausible explanation of the minimal occurrence of the voiced labiodental fricative is to suggest its gradual diachronic disappearance in the language. The evidence to support this argument is that a similar case is reported in Utugwang (Bendi) by Ayugha (2013) where the voiced labiodental fricative /v/ is only found in one lexical item (‘igo:va’ the Utugwang word for ‘guava’) which was borrowed into the language. Unlike Alege, the voiced labiodental fricative has completely disappeared saved for the case of the loan word. Again in other related languages like Bekwarra, Mbe and Bokyi (Bendi), the voiced labiodental fricative is absent from the sound system.

Distribution

In discussing the distribution of a sound, consideration is given to the place of occurrence of such sound (word initial, medial or final) as well as adjacent segments. In Alege, most segments occur in word initial and medial positions as shown in table 3.

Table 3: Consonant distribution in Alege

Consonant Sounds	Word-initial Position	Word-medial Position	Word-final Position
p	pòng ^w è ‘float’ pá ‘loose’	ìpè ‘glory’ ópípí ‘flute’	-
b	bérì ‘bring’ bḗ ‘destroy’	ìbòbè ‘cliff’ ìbòá ‘rubbish’	-
t	tèmbé ‘approach’ tí ‘burst’	ritè ‘journey’ ètiétìè ‘different’	-
d	dùsèráné ‘hope’ dò ‘bid goodbye’	ídá ‘root’ ídídíbé ‘flying ant’	-
k	kḗbwá ‘grassland’ kísí ‘floor’	íkí!kó ‘story’ íké ‘shoe’	-
g	gí ‘pluck’ gákḗm ‘hug’	èrigá ‘shirt’ àgódó ‘bed’	-
k ^w	k ^w é ‘die’ k ^w óré ‘snore’	ìk ^w étsé ‘cripple’ ìk ^w á!bó ‘once’	-

g ^w	g ^w á g ^w ó	'join' 'remember'	ìg ^w ùdù rìg ^w é	'cow' 'hunger'	-
gb	gbé gbèk ^w ó	'polish' 'cream'	m̀gbé ó!gbí	'catfish' 'fruit'	-
β	βilé βé	'begin' 'blaze'	ìβóté ìβìβè	'shield' 'shelter'	-
m	miò máre	'disappear' 'taste'	ímóè ètíméné	'swelling' 'braid'	kóm ńgém 'hit' 'fist'
n	nìbè nìmèné	'crooked' 'groan'	ìné ínínè	'spot' 'eight'	ízìn àńín 'few' 'bird'
ɲ	ɲébó ɲó	'defecate' 'choke'	íné rìńíé	'pimple' 'knowledge'	-
ŋ	ń!ká ńgèrè	'insect' 'turtle'	éńká áń!gó	'omen' 'black mamba'	-
ŋ ^w	ŋ ^w à ŋ ^w á!bé	'enter' 'orphan'	ìŋ ^w àné òrèŋ ^w é	'tired' 'neighbour'	-
r	rìgbó rìbí	'snail' 'sky'	pré ìré	'mix' 'lamp'	-
b	-		íkáβé kòβé	'bone' 'bow'	-
f	fìfí fónò	'end' 'kiss'	ìfèfè kífé	'new' 'honour'	-
v	vé vén	'ascend' 'break'	ìvántó ògúvà	'dragon fly' 'guava'	-
s	sé sèrú	'sweep' 'breath'	ìsísó kísí	'cockroach' 'floor'	-
z	zí zífí	'chew' 'inherit'	ízìn rízí	'few' 'food'	-
ʃ	ʃóó ʃíé	'descend' 'harvest'	ìʃíʃí ìʃò	'black' 'hyena'	-
h	hóró hóá	'fold' 'roast'	ìhùhù ìhó	'darkness' 'buffalo'	-
ts	tsìbè tsím	'dip' 'bake'	kítsá rítsé	'tether' 'leg'	-
dz	dzízí dzòg ^w é	'low' 'overtake'	ìdzá mídzé	grandchild' 'self'	-
tʃ	tʃók ^w è tʃóé	'snatch/seize' 'refuse'	àkpítʃí àtʃí	'bowl' 'cooking pot'	-
dʒ	dzìé dzòé	'torn' 'laugh'	ìdzé ìdzó	'language' 'thirst'	-
l	lé lání	'shoot' 'deceive'	ìlíló ìlùm	'plate' 'bulb'	-
j	jê	'slice'	ájí	'groan'	-

	jô	'light'	òbòjí	'servant'	
w	wèrò	'that'	éjìwó	'pity'	-
	wá	'that'	ówó	'needle'	

From the data gathered from the language, the bilabial nasal /m/ and the alveolar nasal /n/ are the only consonant phonemes that can occur in word initial, medial and final position in Alege.

The distribution of other consonant phonemes restricted to word initial and final positions. In this language, velar nasal [ŋ] is a homorganic allophone of the alveolar nasal /n/ since it exclusively occurs before velar consonants. Consider the data in example 1.

Example 1

- a. ñgám 'fist'
- b. ñkò 'guinea fowl'
- c. ñdò 'big'
- d. ñtú!hú 'fishing net'
- e. mbà 'bag'
- f. mgbé 'catfish'
- g. m!kpé 'stupid'

This process where a nasal assimilates the place of articulation of the following consonant is well attested in most Niger-Congo languages with syllabic nasals such as Igbo, Yoruba, Efik, Bokyì, Utugwang. Apart from the NC sequence, Alege also has a VN syllable type. When the VN syllable is followed by a CV syllable type, the nasal coda of the first syllable still agrees in the place of articulation with the onset (a stop) of the following syllable – a clear case of hormoganicity.

Example 2

- a. ómkpá 'armpit'
- b. émgbé 'groundnut'
- c. ántí 'stinger'
- d. éndó 'equal'
- e. á!ngó 'green mamba'

Apart from the position of segments in the word, other phonological environments such as adjacent segments are crucial in defining the phonemic status of consonants in this language. Like Utugwang (Ayugha 2013), Alege has a wide spread of consonant labialization. In the language, labialized consonants /b^w, t^w, f^w, tʃ^w, dʒ^w, h^w/ are all allophones of their non-labialized counterparts, given that they only occur before rounded vowels as exemplified in 3.

Example 3

- a. òb^wób^wó 'hollow'
- b. òt^wò 'oil palm'
- c. tʃ^wó 'carry (on the head)'
- d. ʃi^wò 'quick'
- e. h^wó 'count'
- f. dʒ^wù 'ask'

g.	ib ^w ú	‘cloud’
h.	ilèt ^w ú	‘bracelet’
i.	òtʃ ^w ó	‘antenna’
j.	éh ^w ú	‘foam’

Variation

One interesting phenomenon in Alege is the social variation between the voiced bilabial fricative [β] and the voiced bilabial stop [b]. Age is the sole determinant for the choice of either /b/ or /β/. The voiced bilabial fricative features only in the speech of elderly speakers (55years and above) and alternates with the voiced bilabial plosive in the speech of young speakers (35years and below) as shown in example 4.

Example 4

Elderly speakers	Younger speakers	Gloss
a. íkáβé	íkábé	‘bone’
b. gbíkáβé	gbíkábé	‘skeleton’
c. òkábísìm	òkábísìm	‘spine’
d. lóβé	lóbé	‘slap’
e. kòβé	kòbé	‘bow’
f. kòβésí	kòbésí	‘bend down’

It should be noted that the voiced bilabial fricative [β] only occurs in intervocalic position. Such phonological environment in most cases results in the weakening of stops to become fricatives. It is also significant to state that the voiced bilabial stop also occurs in this same intervocalic environment as the bilabial fricative in the speech of elderly speakers. Consider example 5.

Example 5

a.	íbú	‘rust’
b.	òtìbè	‘okra’
c.	ìbìbà	‘wing’
d.	ìbìbò	‘flower’
e.	òbó	‘pit’
f.	ìbòbè	‘valley’

Our argument therefore is that historically, there was an intervocalic weakening of the voiced bilabial stop to voiced bilabial fricative. This phonological innovation is no longer absolute - however, there is still some lexical retention (see example 4). This sociolect situation reflects a diachronic continuum (the generational shift) which will implicitly result in the eventual loss of the bilabial fricative in the language.

After a careful phonological analysis, twenty-nine (29) phonemic consonants have been identified in Alege as presented in table 4.

Table 4: Phonemic consonants in Alege

	Bilabial	Labio Dental	Alveolar	Palatal Alveolar	Palatal	Velar	Labialized Velar	Glottal
Plosive	p b		t d			k g	kp qb k ^w q ^w	
Implosive	ɓ							
Nasal	m		n			ɲ	ɲ ^w	
Flap			r					
Affricate			ts dz	tʃ dʒ				
Fricative		f v	s z	ʃ				h
Approximant			l		j		w	

Conclusion

Based on the principles of contrast, distribution and variation, we identified twenty-nine (29) phonemic consonants /p b t d k g kp gb k^w q^w ɓ m n ɲ ɲ^w ts dz tʃ dʒ r f v s z ʃ h l j w/ in the Alege language. In terms of distribution, only the voiced bilabial and voiced alveolar nasals /m n/ are permitted as codas in the language. One interesting nasal feature in this language is homorganicity. Nasals that occur in both NC and VNCV syllable sequence take on the place of articulation of the following consonant. Non-contrastive labialization is a wide spread feature of these consonants /b, t, ʃ, tʃ, dʒ, h/ when they are followed by rounded vowels. One interesting phenomenon in Alege is the social variation between the voiced bilabial fricative [ɓ] and the voiced bilabial stop [b]. Age is the sole determinant for the choice of either /b/ or /ɓ/. The voiced bilabial fricative features only in the speech of elderly speakers (55years and above) and alternates with the voiced bilabial plosive in the speech of young speakers (35years and below).

Findings from the analysis of data from this language have so far provided vital information on the phonemic inventory of Alege consonants. Since the scope of this study is limited to the analysis of the consonant system of the language, it will also be useful if further study is conducted on other aspects of the sound system like the vowel and tone system which are also very essential in developing an orthography for the language.

References

- Ayugha, K.E. (2011). Reading Bokyì without tears. Unpublished Language primer.
- Ayugha, K.E. (2013). A grammatical sketch of Utugwang. Unpublished Research Project. The Theological College of Northern Nigeria, Jos.
- Bamgbose, A. (1967). Notes on the phonology of Mbe. *Journal of West African Languages*, 4. 5–11

Blench, R.M. (2001). *The Bendi languages: lost Bantoid languages?* Paper presented at the 32nd Annual Conference on African Linguistics: Benue-Congo Workshop Berkeley, March

Clark, J. & Colin, Y. (2006). *An introduction to phonetics and phonology*. Malden MA: Blackwell Publishing.

Crozier, D. and Blench, R.M. (1992). *Index of Nigerian Languages (edition 2)*. SIL, Dallas.

Davenport and Hannahs (2010) *Introducing phonetics and phonology*. London: Arnold.

Hockett, C. (1942). A system of descriptive phonology. *Language*, 18, 3-21.

Hyman, L.M. (1975). *Phonology: theory and analysis*. New York: Holt, Rinehart and Winston.

McCarthy, J.(1994). The phonetics and phonology of Semitic pharyngeals. In P. Keating (ed). *Papers in laboratory phonology III*. Cambridge: Cambridge University Press.

Otronyi, L., Ajaegbu, G., Hon, L., Muniru, J., & Nweke, U. (2013). A summary report of a sociolinguistic survey of the Alege language of Cross River State, Nigeria. SIL Publication.

Pike, K.I. (1947). *Phonemics: a technique for reducing languages to writing*. Ann Arbor: University of Michigan Press.

Snider, Keith and James Roberts. 2004. SIL comparative African word list (SILCAWL). *Journal of West African Languages* 31(2):73-122

Yul-Ifode, S. (1999). *A Course in Phonology*. Port Harcourt: River Side Communications.