A SEGMENTAL PHONOLOGICAL ANALYSIS OF THE CONSONANT SYSTEM OF THE SABU LANGUAGE

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ABSTRACT

This study investigates the consonant sound system of the Sabu language (Hawu) within the framework of segmental phonology, aiming to provide a systematic and theory-driven phonological description. Sabu (Hawu), a regional language spoken in one of the provinces of Indonesia, East Nusa Tenggara, has received limited phonological attention, particularly with respect to its consonant inventory and distributional patterns. A comprehensive description of its consonantal system is essential not only for advancing linguistic research but also for supporting ongoing efforts in language documentation and preservation. The objectives of this study are: (1) to identify and establish the consonant phoneme inventory of Sabu, (2) to analyze the distribution of consonant phonemes according to syllabic positions— namely word-initial, medial, and final positions—and (3) to describe the phonological characteristics of Sabu consonants based on articulatory features, including place of articulation, manner of articulation, and voicing. In addition, the study examines phonotactic patterns related to consonant occurrence within the syllable structure of the language. The theoretical framework is grounded in contemporary segmental phonology, which conceptualizes phonemes as abstract units defined by distinctive features and their contrastive functions in meaning differentiation. The analysis adopts recent developments in phonological theory as presented by Carlos Gussenhoven and Jacobs (2024), emphasizing the interaction between segmental structure, phonemic distribution, and phonological environments. Articulatory classification and phonetic interpretation are supported by modern phonetic-phonological approaches (Ladefoged & Johnson, 2015), while phonetic transcription follows the standards established by the International Phonetic Association (2015). This research employs a qualitative descriptive method. The data consist of spoken Sabu language collected from native speakers through controlled elicitation, linguistic interviews, and recordings of natural speech. Informants were selected based on strict linguistic criteria, namely native competence and active daily use of the language. The recorded data were transcribed using the International Phonetic Alphabet (IPA) and analyzed using distributional techniques, including minimal pair analysis and identification of phonological environments, to determine the phonemic status of each consonant. This study are expected to yield a systematic and theoretically grounded description of the Sabu consonant system, contributing to the broader field of Austronesian and regional language phonology. Moreover, the results are anticipated to serve as a valuable reference for further linguistic research and as a foundational resource for sustainable language documentation and preservation initiatives.
Keywords*: Consonant System,Distinctive Features,Phonem,Phonological Distribution,Sabu Language*

ABSTRAK

Penelitian ini mengkaji sistem bunyi konsonan bahasa Sabu (Hawu) dalam kerangka fonologi segmental yang bertujuan untuk memberikan deskripsi fonologis yang sistematis. Bahasa Sabu (Hawu) merupakan bahasa daerah yang dituturkan di salah satu provinsi Indonesia, Nusa Tenggara Timur. Kajian fonlogis bahasa sabu masih terbatas khususnya yang berkaitan dengan inventaris konsonan dan pola distribusinya. Deskripsi komprehensif tentang sistem konsonan ini sangat penting tidak hanya untuk memajukan penelitian linguistik tetapi juga untuk mendukung upaya dokumentasi dan pelestarian bahasa. Tujuan dari penelitian ini adalah: (1) untuk mengidentifikasi dan menetapkan inventaris fonem konsonan Sabu, (2) untuk menganalisis distribusi fonem konsonan menurut posisi suku kata—yaitu posisi awal kata, tengah, dan akhir—dan (3) untuk mendeskripsikan karakteristik fonologis konsonan Sabu berdasarkan fitur artikulasi, termasuk tempat artikulasi, cara artikulasi, dan pelafalan. Selain itu, penelitian ini mengkaji pola fonotaktik yang berkaitan dengan kemunculan konsonan dalam struktur suku kata bahasa tersebut. Kerangka teoretis dalam kajian ini didasarkan pada fonologi segmental kontemporer, yang mengonseptualisasikan fonem sebagai unit abstrak yang didefinisikan oleh fitur pembeda dan fungsi kontrasnya dalam diferensiasi makna. Analisis ini mengadopsi perkembangan terkini dalam teori fonologi Carlos Gussenhoven dan Jacobs (2024) yang menekankan interaksi antara struktur segmental, distribusi fonemik, dan lingkungan fonologis. Klasifikasi artikulasi dan interpretasi fonetik didukung oleh pendekatan fonetik-fonologis modern (Ladefoged & Johnson, 2015), sedangkan transkripsi fonetik mengikuti standar yang ditetapkan oleh International Phonetic Association (2015). Penelitian ini menggunakan metode deskriptif kualitatif. Data terdiri atas bahasa Sabu lisan yang dikumpulkan dari penutur asli melalui elisitasi terkontrol, wawancara linguistik, dan rekaman ucapan alami. Informan dipilih berdasarkan kriteria linguistik yang ketat, yaitu kompetensi asli dan penggunaan bahasa sehari-hari yang aktif. Data yang direkam ditranskripsikan menggunakan International Phonetic Alphabet (IPA) dan dianalisis menggunakan teknik distribusi, termasuk analisis pasangan minimal dan identifikasi lingkungan fonologis, untuk menentukan status fonemik setiap konsonan.

Hasil penelitian menunjukkan bahwa bahasa Sabu memiliki inventaris konsonan yang relatif sederhana namun sistematis yang terdiri atas bunyi hambat, nasal, frikatif, aproksiman, dan hentian glotal. Distribusi konsonan menunjukkan adanya pembatasan posisi tertentu, terutama pada posisi akhir kata. Penelitian ini berkontribusi terhadap dokumentasi dan pelestarian bahasa Sabu serta memberikan pemahaman mengenai struktur fonologis bahasa-bahasa Austronesia.
Kata kunci: *fonologi segmental, konsonan, bahasa Sabu, fonem, IPA*

INTRODUCTION

Language is one of the most fundamental aspects of human life. It enables individuals to convey thoughts, ideas, experiences, feelings, and various forms of information to others. Beyond serving as a communication tool, language acts as a marker of community identity and a vehicle for transmitting cultural values from one generation to the next. Without language, processes such as social interaction, education, and cultural preservation could not function effectively. Indonesia boasts a remarkably high level of linguistic diversity; each region possesses a language with distinct phonological, morphological, syntactic, and semantic characteristics. This diversity constitutes a valuable part of the nation's cultural wealth that must be safeguarded. However, factors such as modernization, globalization, urbanization, and the increasing use of Indonesian and foreign languages across various sectors have led to a decline in the number of speakers for some regional languages. Consequently, documenting and researching regional languages is a strategic step toward preserving this cultural heritage. One such regional language still in use today is Sabu, spoken by the people of Sabu Island in East Nusa Tenggara Province. It remains a part of daily life, particularly within families, traditional ceremonies, and various social activities. Nevertheless, research into the linguistic structure of the Sabu language remains relatively limited compared to studies of other regional languages in Indonesia. This situation highlights the need for more in-depth research to ensure that the characteristics of the Sabu language are scientifically documented.

In linguistics, the study of a language's sound system is known as phonology. Phonology is the branch of linguistics that examines speech sounds based on their function in distinguishing meaning. It investigates how speech sounds operate as part of the language system (Ladefoged & Johnson, 2015). Phonology studies the patterns, rules, and organization of sounds within a language, enabling speakers to differentiate meanings through sound distinctions (Fromkin, Rodman, & Hyams, 2018). The study of phonology is divided into two primary fields: segmental phonology and suprasegmental phonology. Segmental phonology examines sound units such as vowels and consonants, whereas suprasegmental phonology analyzes elements like stress, intonation, pitch, and sound duration. Phonology addresses a language's sound system, including how phonemes are arranged and the rules governing their occurrence in speech (Yule, 2020).

The study of consonant systems constitutes a crucial aspect of segmental phonology, as consonants are fundamental elements in the formation of word structures within a language. Through the analysis of the consonant system, researchers can determine the inventory of consonant phonemes, places and manners of articulation, sound distributions, and patterns of consonant occurrence within words. Such information is vital for a comprehensive understanding of a language's phonological characteristics. Research findings forming the basis of this paper indicate that the Sabu language possesses 21 consonant phonemes distributed across various points of articulation, exhibiting diverse distribution patterns. Furthermore, several syllable structure patterns were identified that reflect the unique phonotactic nature of the Sabu language. These findings demonstrate that the Sabu language possesses a rich sound system that warrants further study.

Research on the Sabu language's consonant system not only contributes to the advancement of phonology but also supports efforts to preserve regional languages. Indonesia possesses a vast diversity of regional languages, making language mapping a crucial step in documentation, protection, and preservation initiatives (Language Development and Cultivation Agency, 2022). The research findings can serve as a reference for linguistics instruction, the development of teaching materials, language documentation, and further studies on Sabu dialects or phonological evolution. Consequently, a segmental phonological analysis of the Sabu consonant system constitutes a significant study that enriches the body of Indonesian linguistic research while supporting the preservation of regional languages as an integral part of national identity.

Based on this background, the research questions are formulated as follows: what is the inventory of consonant phonemes in the Sabu language?; what is the distribution of consonant phonemes in word-initial, word-medial, and word-final positions?; what syllable structure patterns are found in the Sabu

language?; what are the characteristics of the Sabu language's segmental phonological system based on the consonant analysis?

This study aims to: describe the inventory of Sabu consonant phonemes; explain consonant distribution based on their position within words; describe Sabu syllable structure patterns; and analyze the segmental phonological characteristics of the Sabu language based on its consonant system.

Theoretically, this study is expected to contribute to the development of linguistics, particularly in the field of segmental phonology. The findings may also serve as a reference for other researchers interested in studying regional languages in Indonesia. Practically, the results are expected to be utilized as teaching material for Phonology courses, serve as a source of information for the public regarding the characteristics of the Sabu language, and support regional language preservation efforts through systematic scientific documentation.

Consonant Classification

Consonants can be classified based on three main aspects:

a. Place of Articulation

The place of articulation refers to the location within the vocal tract where the airflow is obstructed. Places of articulation include:

Bilabial

Alveolar

Velar

Glottal

b. Manner of Articulation

Manner of articulation refers to how the airflow is obstructed during sound production. Manners of articulation include:

Stop (plosive)

Nasal

Fricative

Approximant

c. Voicing

Voicing relates to the vibration of the vocal cords during sound production:

Voiced sounds

Voiceless sounds.

Research on Austronesian languages indicates that most regional languages in Eastern Indonesia possess relatively simple consonant systems and rarely feature consonant clusters. However, specific research on the phonology of the Sabu language remains very limited, making this study important to undertake.

RESEARCH METHOD

This study employs a qualitative descriptive method. This method was selected because the research focuses on the systematic description of linguistic phenomena. Linguistic research must be conducted systematically—involving problem definition, data provision, data analysis, and the presentation of results—to yield findings with scientific validity (Mahsun, 2017). Qualitative research is also a method grounded in a naturalistic paradigm, examining phenomena in natural settings with the researcher serving as the primary instrument; data analysis is performed inductively to generate in-depth understanding (Sugiyono, 2023). Qualitative research aims to comprehend phenomena holistically through descriptive accounts situated in natural contexts, utilizing various scientific methods (Moleong, 2021). Furthermore, qualitative research emphasizes the process of interpreting social reality, whereby the data obtained are analyzed in depth to reveal the meanings underlying the phenomena (Bungin, 2017). Research data were obtained from native speakers of the Sabu language through speech recordings, vocabulary lists, and

natural conversations. Data collection techniques included interviews, audio recording, note-taking, and elicitation.

The data analysis procedures involved: data transcription using the International Phonetic Alphabet (IPA); identification of consonant phonemes; classification based on articulatory features using Praat software; and analysis of consonant distribution.

RESULTS AND DISCUSSION

Consonant Inventory

The consonant phonemes of the Sabu language are shown in the following table:

Table 1. Sabu consonant phonemes

No.		*Bilabial*	Alveolar	Velar	Glottal
1.	Stop	p, b	t,d	k,g	ʔ
2.	Nasal	n	ŋ		
3.	Fricative	s		h	
4.	Approximant	w	r,l		

Consonant Descriptions

a. Stop Sounds

Stop sounds are produced by a complete closure of the airflow.

Voiceless stops: /p, t, k/

Voiced stops: /b, d, g/

b. Nasal Sounds

Nasal sounds are produced by directing airflow through the nasal cavity; these include /m, n, ŋ/.

c. Fricative Sounds

Fricative sounds are produced through a partial constriction of the airflow; these are /s, h/.

d. Approximant Sounds

Approximant sounds are produced with minimal obstruction; these include /w, r, l/.

e. Glottal Stop

The phoneme /ʔ/ frequently appears in word-medial and word-final positions.

4.3 Consonant Distribution

a. Word-Initial Position

All Sabu consonants can appear at the beginning of a word.

Examples:

/p/ → pala

/t/ → tana

b. Word-Medial Position

Consonants also appear in the middle of a word.

Examples:

/k/ → baka

/n/ → kana

c. Word-Final Position

There are certain restrictions regarding the word-final position.

The glottal stop /ʔ/ frequently appears.

Stop sounds such as /p/ and /t/ are rarely found.

Table 2. Distribution of Sabu consonants

No.	**consonants**	**Initial**	**medial**
1.	w	wo ie	awu
2.	m	mili	amo
3.	y	ya	
4.	l	lamuhi	ngallu
5.	n	nangi	ana
6.	ŋ	ngaka	bunga
7.	ɲ	nya	henya
8.	k	kelebu	bakke
9.	h	habbu	huhu
10.	t	tunu	atte
11.	b	bale	tabbo
12.	p	petu	bapa
13.	d	dowala	wowadu
14.	r	rau	warru
15.	j	jau	
16.	dj	djala	raudju'u
17.	g	gatta	aga
18.	q	qiruai	
19.	ʔ		helaʔu

Syllable Patterns

There are nine syllable patterns, as shown in the following table

Table 3 Syllable patterns

No.		Sabu	Indonesian	English
1.	VKV	awu	abu	ash
2.	VV	ei	air	water
3	KVV	wiu	baru	new
4.	KV	ya	saya	I
5	KVKV	ngaka	anjing	dog
6	KVKKV	ngallu	angin	wind
7	KVKVKV	kelebu	apung	buoyant
8	KVKVKKV	merammu	awan	cloud
9	KVKVV	hedai	daging	meat

The consonant system of the Sabu language exhibits characteristics typical of Austronesian languages, particularly a tendency toward simple syllable structures and a scarcity of consonant clusters; indeed, no consonant clusters were identified in the Sabu language during this study. However, the prominent presence of the glottal stop stands out as a distinctive feature of the language.

The study's results also indicate that the Sabu consonant inventory is relatively stable and systematic. The observed distribution patterns reveal specific phonotactic constraints influencing consonant occurrence, particularly in word-medial positions.

CONCLUSIONS AND RECOMMENDATIONS

Based on the segmental phonological analysis of the Sabu consonant system, it can be concluded that the language possesses a distinctive phonological system that reflects the linguistic richness of Indonesia's regional languages. Through a segmental phonology approach, this study successfully described the consonant inventory, phoneme distribution, places of articulation, and syllable structure patterns that characterize the Sabu language. These findings demonstrate that the Sabu sound system operates with regularity and patterns amenable to scientific analysis. The results indicate the presence of 21 consonant phonemes distributed across various places of articulation—including bilabial, dental, alveolar, cacuminal (retroflex), medio-palatal, medio-velar, post-velar, pharyngeal, glottal, and uvular. This diversity in places of articulation highlights the complexity of the Sabu consonant system and underscores the phonological features that distinguish it from other regional languages. Furthermore, the existence of these varied consonant types demonstrates that the Sabu language possesses a rich sound inventory that plays a crucial role in shaping word meaning.

Regarding phoneme distribution, the study found that while most consonants can appear in word-initial and word-medial positions, their occurrence in word-final positions is relatively limited. This pattern indicates a tendency in the Sabu language to form words with open syllables—that is, words ending in a vowel. Such a distribution pattern is a phonological characteristic distinguishing Sabu from languages that more frequently employ consonants in word-final positions. Furthermore, the study identified several syllable structure patterns: VCV, VV, CV, CVV, CVCV, CVCVCV, CVCVCVCV, CVCVCVCCV, and CVCVV. This diversity of patterns demonstrates that the Sabu language possesses a phonotactic system that is quite flexible in combining consonants and vowels to form words. These patterns also illustrate that the phonological system of the Sabu language develops systematically and adheres to specific rules inherent to the language.

Overall, this study contributes to the development of phonological research on regional languages in Indonesia. The description of the Sabu language's consonant system is expected to serve as a resource for researchers, students, and regional language enthusiasts seeking to understand the phonological characteristics of the language. Furthermore, this study supports efforts to document and preserve regional languages, ensuring they remain known and used by future generations.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are offered. Future research on the Sabu language should expand into other linguistic aspects, such as the vowel system, morphophonemics, suprasegmental phonology, dialectology, and experimental phonetics. Follow-up studies could also compare the Sabu language's phonological system with those of other regional languages in East Nusa Tenggara to provide a more comprehensive picture of inter-language relationships. Educational institutions are encouraged to utilize these findings as teaching material for courses in Phonology, General Linguistics, and Regional Languages. Having a reference for the Sabu language's sound system allows students to study the application of phonological theory to an Indonesian regional language in a more concrete manner.

For local governments and cultural institutions, this study is expected to serve as a consideration when formulating preservation programs for the Sabu language. Documenting the sound system is a crucial initial step in developing dictionaries, teaching materials, and learning media for the Sabu language as part of broader regional language preservation efforts. Sabu language speakers are encouraged to maintain the use of the language in their daily lives, particularly within family and community settings. Active use of the regional language helps ensure its continuity, preventing language shift or even extinction caused by the influence of other languages.

This study has limitations as it focuses solely on the consonant system within the scope of segmental phonology. Therefore, further, more in-depth research—utilizing a broader dataset and a larger number of informants—is required to provide a more complete and accurate description of the Sabu language's phonological system. Such comprehensive follow-up research is expected to advance scientific documentation of the Sabu language and strengthen efforts to preserve this element of Indonesia's linguistic cultural heritage.

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