Austronesian: Journal of Language Science & Literature

P-ISSN: 2963-1548 E-ISSN 2961-9947

Journal Homepage:

https://www.ojs.wahanapublikasi.com/index.php/austronesian



The Distribution of Vowel and Consonant Phonemes in the Dengka Dialect of the Rote Language: A Phonological Analysis by Syllabic Position

Amerta Alexander Henukh[1*], Rudolof Jibrael Isu[2], Yanrini Martha Anabokay[3]

[1-3] English Education Study Program, Faculty of Teacher Training and Educational Sciences, Universitas Persatuan Guru 1945 NTT, Kupang 85116, Indonesia

ARTICLE INFO

Received:
22 July 2026

Accepted:
19 October 2026

Published:
01 December 2026

Keywords:

Phonology, Dengka Dialect, Rote Language, Phoneme Distribution, Syllable Structure

ABSTRACT

This study investigates the distribution of vowel and consonant phonemes in the Dengka dialect of the Rote language, an underdocumented Austronesian language spoken in East Nusa Tenggara, Indonesia. It aims to identify the phonemic inventory, examine the positional distribution of phonemes in initial, medial, and final word positions, and describe the phonological patterns underlying the dialect's syllabic structure. This study employed a descriptive qualitative approach. Primary data were collected from native speakers born and raised in the Dengka-speaking community through participant observation, guided interviews using a Swadesh word list, and audio recordings. Secondary data were obtained from the Rote–Indonesian Dictionary (Ingguoe, 2021). The data were analyzed through phonetic transcription using the International Phonetic Alphabet (IPA), distributional analysis, and contrastive analysis. The findings identified five vowel phonemes (/a, e, i, o, u/) and nineteen consonant phonemes (/b, d, f, h, k, l, m, mb, n, nd, ng, ngg, p, r, s, t, w, y, ʔ/). All five vowels occur in initial, medial, and final positions, whereas most consonants are restricted to initial and medial positions. The glottal stop /ʔ/ occurs exclusively in medial position, functioning as a hiatus breaker, while no consonants were identified in final position. These distributional patterns indicate a strong preference for open syllable structures (CV) in the Dengka dialect. This study contributes to the systematic phonological documentation of the Dengka dialect and provides empirical evidence for comparative studies of Austronesian phonology and regional language preservation.

Copyright © 2026 The Author(s)
Published by CV Wahana Publikasi.
This article is an open access article under the CC BY-NC-SA 4.0 License

* Corresponding Author: amerta.henukh@gmail.com
DOI: https://doi.org/10.59011/austronesian.5.3.2026.944-954

1. Introduction

Language is a system of arbitrary and conventional sound symbols that serves as a primary means of communication and social interaction (Bloomfield, 1933). At the linguistic level, phonology plays an essential role in understanding how speech sounds are organized, distributed, and patterned within a language. The identification of phonemes, their positional distribution, and their relationship to syllable structures provides fundamental insights into the systematic organization of a language's sound system (Fromkin et al., 2011; Schane, 1992). Phonological investigation is particularly important for lesser-documented languages because it establishes essential linguistic evidence for language description, comparative analysis, and documentation. Recent research has demonstrated the significance of systematic phonological documentation in revealing distinctive sound inventories, syllable structures, and phonotactic characteristics across under-documented languages (Lovestrand et al., 2022; Balukh et al., 2024; Yulianti et al., 2025).

Regional languages in Indonesia represent an important component of the country's linguistic and cultural heritage. However, many regional languages face challenges associated with declining intergenerational transmission, language contact, and increasing dominance of nationally and internationally used languages. These circumstances highlight the importance of linguistic documentation as an effort to preserve linguistic diversity and maintain the knowledge embedded in local languages. Phonological documentation, in particular, provides foundational information about the sound systems of languages that may otherwise remain inadequately described. Caballero and McPherson (2025) emphasize that phonological documentation contributes not only to linguistic analysis but also to the development of documentary resources that support language communities. Similarly, Balukh et al. (2024), in their study of the Modo language in East Nusa Tenggara, demonstrate how systematic phonological descriptions can document the distinctive linguistic characteristics of an endangered Austronesian language.

The Rote language, spoken on Rote Island in East Nusa Tenggara, Indonesia, represents one of the regional languages requiring further linguistic investigation. It comprises several dialectal varieties, including the Dengka dialect, which is spoken in particular communities on Rote Island. Despite the linguistic significance of this dialect, its phonological characteristics remain insufficiently documented, particularly concerning the distribution of vowel and consonant phonemes across different word positions. Earlier descriptions by Fanggidaej (1892) in Rottineesche Spraakkunst and Balukh (2007) in Kamus Bahasa Rote-Indonesia provided foundational information about the Rote language. Nevertheless, these works did not systematically investigate the positional distribution of phonemes specifically in the Dengka dialect. Consequently, a more focused phonological investigation is necessary to establish a clearer description of its segmental structure.

Previous studies of related languages in eastern Indonesia provide relevant theoretical and empirical foundations for this investigation. Isu (2013, 2014), Isu & Nitbani (2012) examined phonological characteristics of Dawan and Savu, demonstrating the relevance of distributional analysis, distinctive features, and optimality theory in identifying phonological patterns in regional languages. More recent research by Lovestrand et al. (2022) on Kodi, an Austronesian language of Sumba, examined segmental phonology, syllable structure, stress, and morphophonological processes, illustrating the importance of detailed phonological descriptions in understanding the sound systems of individual language varieties. Similarly, Balukh et al. (2024) documented the vowel and consonant inventories, syllable structures, and morphophonological characteristics of the Modo language in East Nusa Tenggara. Yulianti et

al. (2025) also demonstrated how phonological analysis can identify distinctive vowel and consonant patterns and contribute to the documentation of the Dayak Bentian language. These studies establish the importance of investigating individual regional languages through systematic phonological descriptions rather than assuming that related languages necessarily share identical phonological characteristics.

Furthermore, phoneme distribution and phonotactic constraints are important aspects of phonological analysis because they explain the permissible positions and combinations of sounds within a language. The distribution of vowels and consonants may reveal restrictions associated with word-initial, medial, and final positions, while syllable structures provide additional evidence of the phonological organization of lexical forms. Recent research by Batais (2024) on Minangkabau demonstrates how phonotactic restrictions influence consonant adaptation and deletion in borrowed words. Similarly, a research highlights the relationship between phonotactic constraints and morphological processes in an Austronesian language spoken in eastern Indonesia. These findings reinforce the importance of examining phoneme distribution as a means of understanding language-specific phonological constraints and patterns (Dekker et al., 2025).

Although previous research has investigated phonological characteristics of several languages in eastern Indonesia, a specific distributional analysis of vowel and consonant phonemes in the Dengka dialect remains unavailable in the literature reviewed for this study. This represents an important research gap because general descriptions of the Rote language cannot necessarily account for the specific phonological patterns of individual dialects. The present study addresses this gap by applying distributional and contrastive analyses to identify the occurrence of phonemes in initial, medial, and final word positions. Particular attention is given to the positional restrictions of consonants, the distribution of vowels, and the syllabic patterns that characterize the Dengka dialect.

Accordingly, this study aims to describe the distribution of vowel and consonant phonemes in the Dengka dialect of the Rote language and identify the phonological patterns associated with their occurrence in different word positions. The investigation is limited to segmental phonology at the word level and does not examine suprasegmental features, such as stress and intonation, or diachronic phonological developments. By providing a systematic description of the phonemic inventory and its positional distribution, this research contributes to the documentation of the Dengka dialect and expands the empirical understanding of phonological variation among Austronesian languages in eastern Indonesia. Furthermore, the findings are expected to provide foundational linguistic information for subsequent comparative research, regional language documentation, and initiatives supporting the preservation of the Rote language.

2. Literature Review

2.1 Phonemes and Phoneme Distribution

A phoneme is the smallest distinctive sound unit that differentiates meaning in a language (Fromkin et al., 2011). Phonemic analysis identifies contrastive sounds through minimal pairs and examines their distribution in different phonological environments. Sounds that distinguish meaning are considered separate phonemes, whereas sounds in complementary distribution may represent allophones (Schane, 1992). Distributional analysis focuses on the occurrence of phonemes in initial, medial, and final positions, while distinctive features explain their articulatory contrasts (Chomsky & Halle, 1968). Isu (2014), Isu & Nitbani (2012) applied these approaches to investigate the phonological patterns of Dawan and Savunese.

Previous studies have provided important foundations for documenting the phonology of regional languages in eastern Indonesia. Fanggidaej (1892) and Balukh (2007) documented general linguistic and lexical characteristics of the Rote language, while Edwards (2018) examined its historical phonology in relation to Meto. Isu (2013, 2014), Isu & Nitbani (2012) investigated canonical patterns, phonotactic characteristics, and distinctive features in Dawan and Savu, followed by Isu et al. (2023), who examined the Mehara dialect of Savu using descriptive generative phonology. More recent studies by Lovestrand et al. (2022) on Kodi, Balukh et al. (2024) on Modo, and Yulianti et al. (2025) on Dayak Bentian further demonstrate the importance of systematic phonological descriptions in identifying vowel and consonant inventories and documenting under-investigated regional languages. Additionally, Smith (2023) examined constraint reranking in diachronic Optimality Theory in Austronesian languages, while Lin (2024) investigated vowel adaptation in Truku, providing further insights into phonological variation and sound adaptation.

Despite these contributions, the distribution of vowel and consonant phonemes in the Dengka dialect remains insufficiently documented. Specifically, the occurrence of phonemes in initial, medial, and final positions, including prenasalized consonants and the glottal stop, requires further investigation. Therefore, the present study applies distributional and contrastive analyses to provide a systematic description of the phonemic characteristics of the Dengka dialect.

2.2 Syllable Structure and Phonotactic Constraints

Syllable structure describes how consonants and vowels are organized within words, generally comprising an onset, nucleus, and coda. Open syllables end in vowels (CV), whereas closed syllables terminate in consonants (CVC) (Ladefoged, 2003). Phonotactic constraints govern the permissible occurrence and combinations of phonemes within these structures, including their distribution across word positions. Isu (2013, 2014) identified a strong preference for open syllables in Dawan and Savunese, particularly through restrictions on consonants in final positions.

Recent studies have further demonstrated the relationship between phonotactic constraints and phonological patterns. Balukh et al. (2024) documented syllable structures and consonant characteristics in Modo, while Batais (2024) identified consonant debuccalization and deletion as phonological adjustments in Minangkabau loanwords. Similarly, Dekker et al. (2025) demonstrated how phonotactic constraints on consonant sequences may influence morphological processes in Alorese. These findings highlight the role of phonotactic restrictions in shaping language-specific sound patterns.

Drawing on these theoretical and empirical perspectives, the present study examines vowel and consonant distribution across initial, medial, and final positions to identify the syllabic patterns and phonotactic characteristics of the Dengka dialect. Particular attention is given to consonant restrictions in final positions and their relationship with the predominance of open syllables. This analysis is expected to contribute to the systematic documentation of Dengka phonology and the broader understanding of Austronesian languages in eastern Indonesia.

3. Method

3.1 Research Design

This study employed a descriptive qualitative research design to examine the distribution of vowel and consonant phonemes in the Dengka dialect of the Rote language. The study

focused on identifying the phonemic inventory and describing the occurrence of each phoneme in initial, medial, and final word positions. A descriptive phonological approach was adopted to systematically investigate segmental characteristics and identify the distributional patterns of the dialect without examining suprasegmental features or diachronic developments (Creswell, 2014).

3.2 Data Sources and Participants

The research data consisted of words and lexical forms in the Dengka dialect. Primary data were obtained from native speakers who were born and raised in the Dengka-speaking community and were over 40 years old. These participants were selected based on their familiarity with and knowledge of the dialect. Secondary data were obtained from the Rote–Indonesian Dictionary (Ingguoe, 2021), which served as supplementary material for identifying and verifying lexical forms and phonological patterns.

3.3 Data Collection Techniques

Data were collected through participant observation, guided interviews, and audio recording. Guided interviews employed a Swadesh word list to elicit lexical items and identify the occurrence of vowel and consonant phonemes in different word positions. Audio recordings were used to ensure the accuracy of phonetic identification and transcription. The collected lexical data were subsequently compared with entries in the Rote–Indonesian Dictionary (Ingguoe, 2021) to support data verification.

The research was conducted through several sequential stages. First, lexical data were collected from native speakers through observation and guided interviews using the Swadesh word list. Second, the collected data were recorded and transcribed using IPA notation. Third, each identified vowel and consonant phoneme was classified according to its occurrence in initial, medial, and final positions. Fourth, distributional and contrastive analyses were performed to identify phonemic contrasts, positional restrictions, and syllabic patterns. Finally, the findings were verified with key informants and supplementary dictionary data before being presented descriptively in tables and explanatory discussions.

3.4 Data Analysis

Data analysis involved three main procedures. First, the recorded lexical items were transcribed phonetically using the International Phonetic Alphabet (IPA) to identify their segmental characteristics. Second, distributional and contrastive analyses were conducted to determine the occurrence of vowel and consonant phonemes in initial, medial, and final positions. This analysis also examined the phonemic status of particular consonants, including prenasalized consonants and the glottal stop /ʔ/. Third, the identified phonological patterns were examined to determine positional restrictions and syllabic characteristics, particularly the occurrence of open syllables (CV). The results were subsequently verified through consultation with key informants to ensure the accuracy of the phonetic transcriptions and phonological interpretations.

4. Results and Discussion

4.1 Distribution of Vowel Phonemes

The phonological analysis identified five vowel phonemes in the Dengka dialect of the Rote language, namely /a/, /e/, /i/, /o/, and /u/. The findings indicate that all five vowels occur in three word positions: initial, medial, and final. This distribution demonstrates that

the vowel system in the Dengka dialect exhibits positional flexibility, with no apparent restrictions on the occurrence of vowel phonemes across the examined positions. Table 1 presents the distribution of vowel phonemes and their corresponding lexical examples.

Table 1. Distribution of Vowel Phonemes in the Dengka Dialect

Phoneme	Position	Example	Gloss
/a/	Initial	/afa/	'tasteless'
	Medial	/batu/	'stone'
	Final	/ina/	'mother'
/e/	Initial	/ela/	'eye'
	Medial	/dope/	'knife'
	Final	/made/	'dead'
/i/	Initial	/idu/	'nose'
	Medial	/bibi/	'goat'
	Final	/tasi/	'sea'
/o/	Initial	/osi/	'garden'
	Medial	/bola/	'ball'
	Final	/leo/	'to stay'
/u/	Initial	/uda/	'rain'
	Medial	/hutu/	'louse'
	Final	/manu/	'chicken'

Source: Primary data & Ingguoe (2021)

As shown in Table 1, each vowel phoneme is represented by lexical items in all three positions. The vowel /a/, for example, occurs initially in /afa/ ('tasteless'), medially in /batu/ ('stone'), and finally in /ina/ ('mother'). Similarly, /e/ appears in /ela/ ('eye'), /dope/ ('knife'), and /made/ ('dead'), representing initial, medial, and final positions, respectively. The same distributional pattern is identified for /i/, /o/, and /u/. These examples demonstrate that vowel phonemes in the Dengka dialect are not restricted to particular word positions and can occur across different lexical environments.

From a phonological perspective, this distribution indicates that vowels maintain a relatively unrestricted positional occurrence within the examined lexical data. Their presence in initial, medial, and final positions reflects their role as syllabic nuclei and their compatibility with different syllabic environments. Unlike consonants, which may be subject to positional restrictions, vowels in the Dengka dialect can occur at the beginning, middle, and end of lexical forms. This characteristic is consistent with the general phonological function of vowels as the central elements of syllable structures (Ladefoged, 2003).

The findings also reveal similarities between the vowel distribution of the Dengka dialect and those reported in other Austronesian languages of eastern Indonesia. Isu (2014) identified a five-vowel system in Savunese, in which vowels can occur in initial, medial, and final positions. Likewise, Isu & Nitbani (2012) reported that Dawan vowels exhibit distribution across these three positions without apparent positional restrictions. These similarities suggest that the complete positional distribution of vowels is a shared characteristic among the languages examined, although further comparative investigation is necessary to establish broader typological patterns.

Furthermore, the five-vowel inventory can be described through distinctive phonological features, particularly vowel height, backness, and rounding, following the framework of distinctive feature theory proposed by Chomsky and Halle (1968). The vowels /i/ and /u/, for

instance, are both characterized by the feature [+high], but differ in backness and rounding: /i/ is a front unrounded vowel, whereas /u/ is a back rounded vowel. These articulatory distinctions contribute to the systematic organization of the vowel inventory and distinguish individual vowel phonemes within the Dengka sound system.

Overall, the findings establish that the Dengka dialect possesses a five-vowel phonemic system with complete distribution across initial, medial, and final word positions. This distribution provides evidence of the relatively unrestricted occurrence of vowels within the examined lexical forms and contributes to understanding the segmental and syllabic organization of the dialect. The findings also provide a basis for comparison with the distributional characteristics of consonant phonemes, which exhibit more restricted positional patterns, as discussed in the following section.

4.2 Distribution of Consonant Phonemes

The phonological analysis identified nineteen consonant phonemes in the Dengka dialect of the Rote language, comprising /b/, /d/, /f/, /h/, /k/, /l/, /m/, /mb/, /n/, /nd/, /ng/, /ngg/, /p/, /r/, /s/, /t/, /w/, /y/, and /ʔ/. Unlike vowels, which occur in initial, medial, and final positions, consonants exhibit more restricted distributional patterns. The findings indicate that eighteen consonant phonemes occur in both initial and medial positions, whereas the glottal stop /ʔ/ is exclusively found in medial position. Furthermore, no consonant phonemes were identified in final word position. Table 2 presents the distribution of consonant phonemes and their corresponding lexical examples.

Table 2. Distribution of Consonant Phonemes in the Dengka Dialect

Phoneme	Position	Example	Gloss
/b/	Initial	/batu/	‘stone’
	Medial	/aba/	‘thread’
/d/	Initial	/dae/	‘earth’
	Medial	/adu/	‘to compete’
/f/	Initial	/fali/	‘to return’
	Medial	/afa/	‘tasteless’
/h/	Initial	/bala/	‘voice’
	Medial	/dahi/	‘forehead’
/k/	Initial	/kola/	‘to speak’
	Medial	/oka/	‘root’
/l/	Initial	/la’o/	‘road’
	Medial	/bala/	‘voice’
/m/	Initial	/mata/	‘eye’
	Medial	/uma/	‘house’
/mb/	Initial	/mba/	‘meat’
	Medial	/kamba/	‘buffalo’
/n/	Initial	/nene/	‘to hear’
	Medial	/ina/	‘mother’
/nd/	Initial	/ndia/	‘he/she’
	Medial	/banda/	‘animal’
/ng/	Initial	/nggou/	‘to call’
	Medial	/nangi/	‘to swim’
/ngg/	Initial	/nggute/	‘scissors’
	Medial	/bengga/	‘news’
/p/	Initial	/papa/	‘father’
	Medial	/apu/	‘ash’
/r/	Initial	/ria/	‘he/she’
	Medial	/ara/	‘they’
/s/	Initial	/sae/	‘mustard green’
	Medial	/asa/	‘to buy’
/t/	Initial	/tai/	‘to weigh’
	Medial	/ate/	‘heart’
/w/	Initial	/wawi/	‘pig’
	Medial	/awa/	‘amazed’
/y/	Initial	/ya/	‘yes’
	Medial	/aya/	‘dislike’
/ʔ/	Initial	—	(not found)
	Medial	/a’a/	‘older sibling’

Source: Primary data & Ingguoe (2021)

As presented in Table 2, most consonant phonemes in the Dengka dialect demonstrate distributional flexibility between initial and medial positions. For example, the phoneme /b/ occurs initially in /batu/ (‘stone’) and medially in /aba/ (‘thread’). Similarly, /d/ is found initially in /dae/ (‘earth’) and medially in /adu/ (‘to compete’), while /f/ occurs initially in /fali/ (‘to return’) and medially in /afa/ (‘tasteless’). This pattern is also identified in other consonants, including /k/, /l/, /m/, /n/, /p/, /r/, /s/, /t/, /w/, and /y/. These findings indicate that consonants generally occupy the onset of initial and medial syllables within lexical forms.

An important characteristic of the Dengka consonant inventory is the presence of prenasalized consonants, particularly /mb/, /nd/, /ng/, and /ngg/. These consonants occur in both initial and medial positions. For instance, /mb/ appears initially in /mba/ (‘meat’) and medially in /kamba/ (‘buffalo’). Likewise, /nd/ occurs initially in /ndia/ (‘he/she’) and medially in /banda/ (‘animal’). The phonemes /ng/ and /ngg/ are also represented in the lexical data. Their occurrence suggests that prenasalized consonants constitute an important component of the segmental inventory of the Dengka dialect. This observation is consistent with Isu & Nitbani (2012), who identified prenasalized consonants as phonologically significant units in the Dawan language. Nevertheless, further phonetic and phonemic investigation is necessary to establish their articulatory properties and contrastive status in relation to sequences of nasal and oral consonants.

Another distinctive finding concerns the distribution of the glottal stop /ʔ/. Unlike the other consonants, /ʔ/ does not occur in initial position in the collected lexical data. Instead, it is exclusively identified in medial position, as illustrated by /aʼa/ (‘older sibling’). Its occurrence between two vowels suggests that the glottal stop may function as a boundary marker that separates adjacent vowel segments and prevents uninterrupted vowel sequences. This pattern is commonly associated with the function of a hiatus breaker. A comparable distribution was reported by Isu et al. (2023) in their investigation of the Mehara dialect of the Savu language, in which the glottal stop was described as occurring intervocalically. The similarity provides a relevant comparative perspective for understanding the distributional characteristics of /ʔ/ in the Dengka dialect.

The most significant distributional restriction identified in this study is the absence of consonants in final word position. As demonstrated in Table 2, all consonant phonemes are restricted to initial and/or medial positions, while no native lexical examples containing consonants in final position were identified. This finding indicates that the Dengka dialect exhibits a systematic phonotactic restriction against consonant-final structures in the lexical data examined. Consequently, consonants predominantly function as syllable onsets rather than codas.

This restriction is closely related to the syllabic organization of the Dengka dialect, particularly its preference for open syllables. Open syllables are characterized by a vowel as their final segment, whereas closed syllables terminate in a consonant (Ladefoged, 2003). The absence of consonants in final position therefore provides evidence of a strong preference for open syllable structures in the dialect. Similar characteristics have been documented in Dawan and Savunese. Isu (2013) reported restrictions on consonant occurrence in final positions in Dawan, while Isu (2014) identified the absence of final consonants as a characteristic of Savunese phonotactics. These similarities suggest that the distributional patterns observed in Dengka correspond to phonological characteristics previously documented in other Austronesian languages of eastern Indonesia.

To provide an overall representation of the positional distribution of vowels and consonants, Table 3 summarizes the occurrence of each phoneme category across initial, medial, and final positions.

Table 3. Summary of Phoneme Distribution in the Dengka Dialect

Type of Phoneme	Initial	Medial	Final
Vowels /a, e, i, o, u/	+	+	+
Consonants /b, d, f, h, k, l, m, mb, n, nd, ng, ngg, p, r, s, t, w, y/	+	+	−
Consonant /ʔ/	−	+	−

Note: (+) = found; (–) = not found
Source: Primary data & Ingguoe (2021)

Table 3 illustrates a clear distributional contrast between vowels and consonants in the Dengka dialect. All five vowel phonemes occur in all three word positions, whereas the eighteen non-glottal consonants are restricted to initial and medial positions. The glottal stop /ʔ/ exhibits an even more restricted distribution because it occurs exclusively in medial position. This contrast demonstrates that the distribution of segmental phonemes in the Dengka dialect is governed by different positional patterns depending on their phonological categories.

From a phonological perspective, these findings suggest that the Dengka dialect strongly favors open syllable structures, particularly the consonant-vowel (CV) pattern. The unrestricted distribution of vowels and the absence of consonants in final positions indicate that vowel segments regularly occupy syllable-final positions, while consonants predominantly occur as syllable onsets. This characteristic is consistent with the phonotactic constraint commonly represented as No Coda, which prohibits consonants from occupying syllable-final positions. Within the framework of Optimality Theory, this pattern may be interpreted as evidence that the constraint against syllable codas is highly ranked in the phonological system of the Dengka dialect. A similar interpretation was proposed by Isu & Nitbani (2012) in the analysis of Dawan phonology.

Furthermore, the distributional patterns provide important information about the phonological characteristics of the Dengka dialect in relation to other Austronesian languages in eastern Indonesia. Although the five-vowel system and open-syllable preference resemble patterns reported in Dawan and Savunese, the occurrence of prenasalized consonants and the restricted medial distribution of the glottal stop represent additional characteristics that deserve further comparative investigation. These findings demonstrate the importance of examining individual dialects independently because phonological similarities among related languages do not necessarily imply identical segmental inventories or distributional restrictions.

Overall, the distributional analysis establishes that the Dengka dialect has nineteen consonant phonemes with distinct positional patterns. Most consonants occur in initial and medial positions, while the glottal stop /ʔ/ is limited to medial position. The absence of consonants in final position constitutes a significant phonotactic characteristic and provides further evidence of the predominance of open syllable structures. Together with the complete distribution of the five vowel phonemes, these findings offer a systematic description of the segmental phonology of the Dengka dialect and contribute to the broader documentation of Austronesian languages in eastern Indonesia.

5. Conclusion

This study examined the distribution of vowel and consonant phonemes in the Dengka dialect of the Rote language, focusing on their occurrence in initial, medial, and final word positions. The findings identified five vowel phonemes (/a, e, i, o, u/) and nineteen consonant phonemes (/b, d, f, h, k, l, m, mb, n, nd, ng, ngg, p, r, s, t, w, y, ʔ/). All five vowels occur in initial, medial, and final positions, whereas most consonants are restricted to initial and medial positions, with no native consonants occurring in final position. The glottal stop /ʔ/ is exclusively found in medial position, where it functions as a hiatus breaker. These distributional patterns indicate a strong preference for open syllable structures (CV) in the Dengka dialect.

The findings demonstrate that the Dengka dialect exhibits distinctive phonological characteristics, particularly in the positional distribution of consonants and the restriction of final consonants. The study extends previous phonological descriptions of Austronesian languages in eastern Indonesia by providing a systematic account of the segmental phonology of an under-documented Rote dialect. Furthermore, the findings contribute to regional language documentation and provide foundational information for future comparative phonological research. Further studies should investigate suprasegmental features, morphophonological processes, and phonological variations across other Rote dialects to obtain a more comprehensive understanding of the language's phonological system.

Acknowledgments

The authors would like to express their gratitude to the native speakers of the Dengka dialect for their valuable participation and contributions to this research. The authors also acknowledge Universitas Persatuan Guru 1945 NTT for its institutional support.

Funding

This research received no external funding.

Conflict of Interest

The authors declare that they have no conflict of interest.

Authors' Contributions

Amerta Alexander Henukh: Conceptualization, methodology, investigation, data collection, formal analysis, and writing – original draft.
Rudolof Jibrael Isu: Supervision, validation, methodology, and writing – review and editing.
Yanrini Martha Anabokay: Supervision, validation, and writing – review and editing.
All authors have read and approved the final version of the manuscript.

Statement of the Use of AI

The authors used artificial intelligence (AI)-assisted tools to support English grammar correction, language refinement, and translation during manuscript preparation. The authors reviewed and verified all AI-assisted outputs and take full responsibility for the accuracy, originality, and integrity of the manuscript.

References

Balukh, J. I. (2007). *Pelajaran bahasa Rote: Untuk sekolah dasar kelas 3.* UPTD Bahasa, Dinas Pendidikan dan Kebudayaan Provinsi Nusa Tenggara Timur.

Balukh, J. I., Khairiah, D., Yanti, & Maerina, R. (2024). A phonological sketch of Modo: An endangered language in Eastern Indonesia. *Jurnal Arbitrer, 11*(4), 516–534. https://doi.org/10.25077/ar.11.4.516-534.2024

Batais, S. S. (2024). Consonantal debuccalization and deletion in Minangkabau. *SAGE Open, 14*(2). https://doi.org/10.1177/21582440241240576

Bloomfield, L. (1933). *Language.* Henry Holt and Company.

Caballero, G., & McPherson, L. (2025). *Phonology in language documentation.* Cambridge University Press. https://doi.org/10.1017/9781009543637

Chomsky, N., & Halle, M. (1968). *The sound pattern of English.* Harper & Row.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

Dekker, P., Klamer, M., & de Boer, B. (2025). Phonotactic mechanisms behind contact-induced morphological simplification in Alorese: An agent-based model of intergenerational transmission. *Language Dynamics and Change, 15*(1), 1–39. https://doi.org/10.1163/22105832-bja10036

Edwards, O. (2018). The morphology and phonology of metathesis in Amarasi. *Morphology, 28*, 25–69. https://doi.org/10.1007/s11525-017-9314-y

Fanggidaej, J. (1892). Rottineesche spraakkunst. *Bijdragen tot de Taal-, Land- en Volkenkunde, 41*(1), 554–571. https://doi.org/10.1163/22134379-90000187

Fromkin, V., Rodman, R., & Hyams, N. (2011). *An introduction to language* (9th ed.). Wadsworth, Cengage Learning.

Ingguoe, B. (2021). *Kamus bahasa Rote–Indonesia.*

Isu, R. J. (2013). *Teori optimalisasi: Fonologi bahasa Dawan: Sebuah kajian deskriptif.* Jenggala Pustaka Utama.

Isu, R. J. (2014). Phonotactic character of Dawan language. In *Proceedings of the Third International Seminar on Language and Arts on Austronesia Language.*

Isu, R. J., & Nitbani, S. (2012). Pola kanonik bahasa Dawan. In A. M. Mbete et al. (Eds.), *Bahasa ibu sebagai pilar jati diri bangsa yang majemuk.* Udayana University Press.

Isu, R. J., Sekoni, R. P., & Ingunau, T. M. (2023). Phonology of Savu language Mehara dialect: Descriptive generative. *Jurnalistrendi: Jurnal Linguistik, Sastra, dan Pendidikan, 8*(2), 312–322. https://doi.org/10.51673/jurnalistrendi.v8i2.1840

Ladefoged, P. (2003). *Phonetic data analysis: An introduction to fieldwork and instrumental techniques.* Blackwell Publishing.

Lin, H.-S. (2024). Loanword adaptation of Japanese vowels in Truku. *Canadian Journal of Linguistics/Revue canadienne de linguistique, 69*(4), 466–510. https://doi.org/10.1017/cnj.2024.26

Lovestrand, J., Balle, M., & Edwards, O. (2022). Notes on Kodi phonology. *Journal of the Southeast Asian Linguistics Society, 15*(2), 1–26.

Schane, S. A. (1973). *Generative phonology.* Prentice-Hall.

Smith, A. D. (2023). Reconstructing non-contrastive stress in Austronesian and the role of the mora in stress shift, gemination and vowel shift. *Diachronica, 40*(1), 111–152. https://doi.org/10.1075/dia.20032.smi

Yulianti, A. I., Septiana, D., Firman, A. D., Isnaeni, M., Musayyedah, R., Rasyid, A., & Fatinah, S. (2025). An analysis of the phonological system of Dayak Bentian language in East Kalimantan, Indonesia. *Cogent Arts & Humanities, 12*(1), Article 2467491. https://doi.org/10.1080/23311983.2025.2467491