**EJI (English Journal of Indragiri): Studies in Education, Literature, and Linguistics**
**Vol. 9. No. 2, July 2025**
**ISSN (Print). 2549-2144, ISSN (Online). 2589-5140**
**Homepage:** https://ejournal-fkip.unisi.ac.id/index.php/eji/

# A Lexicostatistical Study: Language Kinship of Dayak Ngaju and Dayak Maanyan Language

***Dilla Sintia[1], Imam Qalyubi[2], Misrita[3]***
[1,3]Universitas Palangka Raya, [2]Universitas Islam Negeri Palangka Raya,
Central Kalimantan - Indonesia
Email: *[1]dillasintia1608@gmail.com*, *[2]imamqalyubi@gmail.com*,
*[3]ritakalang3@gmail.com*

**Article History:**
Received: 03/06/2025
Accepted: 12/07/2025
Published: 13/07/2025

**Keywords**:
*Lexicostatistics, Dayak Ngaju, Dayak Maanyan, Language kinship, Sound changes.*

**Abstract**

This study explores the linguistic kinship between the Dayak Ngaju and Dayak Maanyan languages, two prominent indigenous languages spoken in Central Kalimantan, Indonesia. Utilizing a lexicostatistical approach based on the 200-item Swadesh list vocabularies, the research aims to quantify the level of relatedness between the two languages and identify sound changes that mark their historical divergence. Data were collected through direct elicitation from native speakers and supplemented with secondary sources. The analysis found that 64 out of 200 vocabulary items are cognates, resulting in a kinship value of 32%, which classifies the relationship at the stock level. This indicates that while both languages likely share a common ancestral language, they have diverged significantly over time due to phonological shifts, socio-cultural factors, and geographic separation. Further comparative analysis revealed systematic sound changes. These findings contribute to a broader understanding of the Austronesian language family and emphasize the importance of preserving linguistic diversity in the Borneo region.

**Kata Kunci:**
*Leksikostatistik, Dayak Ngaju, Dayak Maanyan, Kekerabatan Bahasa, Perubahan Bunyi.*

**Abstrak**

Studi ini mengeksplorasi hubungan kekerabatan linguistik antara bahasa Dayak Ngaju dan bahasa Dayak Maanyan, dua bahasa asli terkemuka yang dituturkan di Kalimantan Tengah, Indonesia. Dengan menggunakan pendekatan leksikostatistik berdasarkan kosakata daftar Swadesh yang terdiri dari 200 item, penelitian ini bertujuan untuk mengukur tingkat keterkaitan antara kedua bahasa dan mengidentifikasi perubahan bunyi yang menandai perbedaan historis mereka. Data dikumpulkan melalui penggalian langsung dari penutur asli dan dilengkapi dengan

**EJI (English Journal of Indragiri): Studies in Education, Literature, and Linguistics**
**Vol. 9. No. 2, July 2025**
**ISSN (Print). 2549-2144, ISSN (Online). 2589-5140**
**Homepage:** https://ejournal-fkip.unisi.ac.id/index.php/eji/

sumber sekunder. Analisis menemukan bahwa 64 dari 200 item kosakata adalah kata serumpun, menghasilkan nilai kekerabatan sebesar 32%, yang mengklasifikasikan hubungan pada tingkat stok. Hal ini menunjukkan bahwa meskipun kedua bahasa tersebut kemungkinan memiliki bahasa leluhur yang sama, keduanya telah menyimpang secara signifikan dari waktu ke waktu karena pergeseran fonologis, faktor sosial budaya, dan pemisahan geografis. Analisis komparatif lebih lanjut mengungkapkan perubahan bunyi yang sistematis. Temuan ini berkontribusi pada pemahaman yang lebih luas tentang rumpun bahasa Austronesia dan menekankan pentingnya melestarikan keragaman linguistik di wilayah Kalimantan.

## INTRODUCTION

Central Kalimantan (Kalimantan Tengah) is home to several indigenous languages that are spoken by various Dayak ethnic groups. Dayak Ngaju and Dayak Maanyan are two of the most well-known They are both connected to different geographical and ethnic groups. The Malayo-Polynesian branch of the Austronesian family, one of the biggest and most widely distributed language groups in the world, includes both Dayak Ngaju and Dayak Maanyan. The concepts that this family descended from a single proto-language, Proto-Austronesian, is supported by the vocabulary's similarity (Klamer, 2019). These two languages show both parallels and contrasts in phonology, lexicon, grammar, and usage, despite having comparable regional and ethnic origins. This suggests a shared family history, followed by a slow divergence driven by sociocultural changes, physical distance, and interaction with other languages.

Dayak Ngaju is predominantly spoken by the Ngaju people in and around the central part of Kalimantan, especially along the Kahayan River. In Central Kalimantan, the Ngaju people are regarded as one of the main ethnic subgroups. Suswandari et al. (2022) stated that the distribution area of Ngaju people is quite broad, with the most of it concentrated in the following regencies: Kapuas, Pulang Pisau, Gunung Mas, and Palangka Raya City. In addition to being a major regional lingua franca, it has influenced area literature and religious customs. In the indigenous Kaharingan belief system, where numerous rituals, prayers, and sacred

texts are performed in Ngaju, the Dayak Ngaju language is also crucial to religious activities. Ngaju aspects are still incorporated into religious rituals and communal life despite the region's conversion to Christianity and Islam.

On the other hand, Dayak Maanyan is mostly spoken by the Maanyan people, who are mainly found in Central Kalimantan's eastern region. The speaking region of the Maanyan language, one of the Dayak languages, extends from Central Kalimantan to South Kalimantan. However, actually Maanyan-speaking populations have resided in this region for generations, including East Barito Regency and areas of South Barito Regency (Jamzaroh, 2021). Linguists who research Austronesian historical linguistics have taken notice of it because of its distinctive linguistic characteristics and notable status as one of the older Dayak languages. Oral traditions, including mythology, ritual chants, folklore, and customary rules (adat), are abundant in the Maanyan language. These oral traditions are usually transmitted from one generation to the next and are frequently recited at customary events such as harvest festivals, marriages, and healing rites.

The term "linguistic kinship," also known as "linguistic relatedness," describes the structural and historical ties that exist between languages that evolved from a common ancestral tongue. The fundamental vocabulary of closely related languages frequently exhibits a significant degree of similarity, including terms for numbers, family members, natural components, and body parts. As societies disperse and grow apart over time, their languages change; new words are added, sounds change, and grammatical structures are developed. In order to create family groupings among languages, scholars in historical and comparative linguistics examine linguistic characteristics including vocabulary, phonology, and grammar. Campbell (2021). In the context of the Indonesian archipelago, particularly in the region of Central Kalimantan, the languages spoken by various Dayak ethnic groups provide a rich field for studying such relationships. Among these, the Dayak Ngaju and Dayak Maanyan languages present an interesting case of linguistic kinship within the Austronesian language family.

Research that focuses on the kinship of the Dayak Ngaju and Maanyan languages is not very extensive, even though these two languages are

geographically close. Some study only on the Maanyan language with other languages. Humaidi & Kasmilawati (2023) conduct the research about language kinship among Deah, Maanyan, and Banjarnese. In fact, the study of linguistic kinship between Dayak Ngaju and Dayak Maanyan not only helps map out the historical migration and interaction patterns of the Dayak communities but also contributes to a deeper understanding of the linguistic landscape of Borneo. Another previous research by Wulandari et al. (2022) employed a dialectometric approach to assess the lexical similarity among four indigenous languages in Central Kalimantan: Uut Danum, Ngaju, Dusun, and Maanyan. Utilizing the 200 Swadesh words list, their study revealed that Dayak Ngaju and Dayak Maanyan are lexically divergent, indicating that these two languages are not dialects of a common variety but rather belong to distinct branches within the Barito language family. In contrast, the present study adopts a quantitative method, combining statistical analysis with descriptive linguistic insights to examine the kinship between Dayak Ngaju and Dayak Maanyan more precisely.

Then, researchers conducting this lexicostatistical comparative linguistic analysis that focused on Dayak Ngaju and Dayak Maanyan. Analysis is on scholars examine key aspects such as core vocabulary (e.g., words for family members, body parts, and natural elements), grammatical structures, and sound correspondences. In this exploration, we will examine the evidence of kinship between Dayak Ngaju and Dayak Maanyan. These comparisons enable linguists to identify cognates of words and observe phonological and morphological shifts that have occurred since the languages diverged.

***Lexicostatistics***

Lexicostatistics is a method in comparative historical linguistics used to measure the degree of kinship between two or more languages Mbangi & Marafad, (2018). The measure of degree is based on the percentage of related basic vocabulary (cognates). This method was first introduced by Morris Swadesh, and has undergone various developments to date. The main purpose of lexicostatistics is to determine the genealogical relationship between languages and estimate the time of separation between the languages.

Sigiro (2015), through the quantitaive research conducted a language kinship analysis on six Dayak languages. However, his study not only focus on Dayak Ngaju and Dayak Maanyan. Although there have not been many studies that specifically discuss the kinship between Ngaju and Maanyan Dayak languages using a lexicostatistics approach, this method has proven effective in revealing historical relationships between other languages in the Indonesian region. Thus, the application of lexicostatistics in this study is expected to provide new insights into the level of kinship between Ngaju and Maanyan Dayak languages, as well as contribute to a broader understanding of linguistic history in Central Kalimantan.

***Sound Changes***

Sound changes are systematic modifications in the pronunciation of speech sounds over time. They are a fundamental concern in historical and comparative linguistics, serving as evidence for genetic relationships between languages and enabling linguists to reconstruct proto-languages. According to Crowley, as cited by Hilmi et al. (2018), there are several types of sound changes. They are lenition, sound addition, and metathesis. However, the common sound changes include apheresis, syncope, apocope, epenthesis, paragoge prothesis, metathesis, and assimilation, among others.

a. Apheresis. Apheresis refers to the loss of an initial sound or syllable in a word (Dardanila et al., 2020) . For example, the English word ’squire derives from esquire, demonstrating initial sound loss.
b. Syncope. Syncope is the deletion of one or more sounds, especially vowels, from the interior or middle of a word. (Polgárdi, 2015) stated a series of unstressed English vowels is the reason that causes syncope. For example, memory become mem(o)ry.
c. Apocope. Apocope is the loss of a final sound or syllable (Baird et al., 2021). This form of sound change is common when a language reduces vowel endings to create consonant-final structures.
d. Prothesis. Prothesis is the addition of a sound at the beginning of a word, often for phonotactic reasons (Dardanila et al., 2020). It is the opposite of apheresis.

**EJI (English Journal of Indragiri): Studies in Education, Literature, and Linguistics**
**Vol. 9. No. 2, July 2025**
**ISSN (Print). 2549-2144, ISSN (Online). 2589-5140**
**Homepage:** https://ejournal-fkip.unisi.ac.id/index.php/eji/

e. Epenthesis. Epenthesis refers to the insertion of a sound, usually a vowel or consonant, within a word (Al-Abdullah & Almutairi, 2024). This typically occurs to break up difficult consonant clusters or to conform to a language's preferred syllable structure.

f. Paragoge. Paragoge is the addition of a sound, typically a vowel, at the end of a word (Maharani et al., 2024). In phonological evolution, paragoge may be used to simplify pronunciation or to integrate borrowed words into the native phonotactic system.

g. Metathesis. Reversing a word's consonant-vowel sequence is known as metathesis (Edwards, 2018). On the other word, metathesis is the reordering of sounds or syllables within a word. This change often arises in rapid or child speech but can become fixed in a language over time. Metathesis is noted in historical developments of many Austronesian languages, where consonant clusters or syllable boundaries are altered.

## METHOD

In conducting this study, the researchers use a quantitative-descriptive method. The quantitative aspect is applied through the statistical calculation of the data, while the descriptive aspect explains the types of lexical similarities and differences found between the two languages. Data collection itself refers to 200 Swadesh vocabularies in the Dayak Ngaju and Dayak Maanyan language, which consists of culturally neutral and universal vocabulary items such as body parts, kinship terms, verbs of basic action, numerals, and natural phenomena.

Then, this study integrated with lexicostatistical analysis to examine the linguistic kinship between the Dayak Ngaju and Dayak Maanyan languages. Number statistics serve as the foundation for this method's analysis (Gapur et al., 2018). This analysis is commonly used in historical linguistics and lexicostatistics to evaluate linguistic relationships. Vocabularies data of Dayak Ngaju and Dayak Maanyan are collected from direct elicitation from native speakers of Dayak Ngaju and Dayak Maanyan through interviews. The core of the interview is to find out the Swadesh List words in the Dayak Ngaju and Dayak Maanyan languages. The

interview process was conducted online with 3 indigenous Dayak Maanyan people (2 men, 1 woman), and 3 indigenous Dayak Ngaju people (2 women, 1 man). They are bachelor's degree graduates from the language and arts department, Palangka Raya University, with an age range of 22-26 years. Secondary sources are published dictionaries, linguistic surveys, and previous research. Each of the 200 vocabulary items will be compare between Dayak Ngaju and Dayak Maanyan. Words that are judged to be cognates, those showing a shared origin based on phonological form and meaning were identified through both phonetic similarity and semantic equivalence.

The lexicostatistical formula that used to analyze the data is as follows:

$$C = \frac{k}{n} \times 100\%$$

C = cognate (percentage of language kinship)

k = number of words that are related

n = number of words compared

After calculating the data using formula above, then researchers determine the status of a kinship between two languages. The classification range is as follows:

**Table 1. Classification of Language Kinship**

| Classification of Language Kinship | |
|---|---|
| Language | 81-100% |
| Family | 36-81% |
| Stock | 12-36% |
| Microphilum | 4-12% |
| Mesophylum | 1-4% |
| Macrophylum | 0-1% |

## FINDINGS AND DISCUSSION

### *Cognate word calculation*

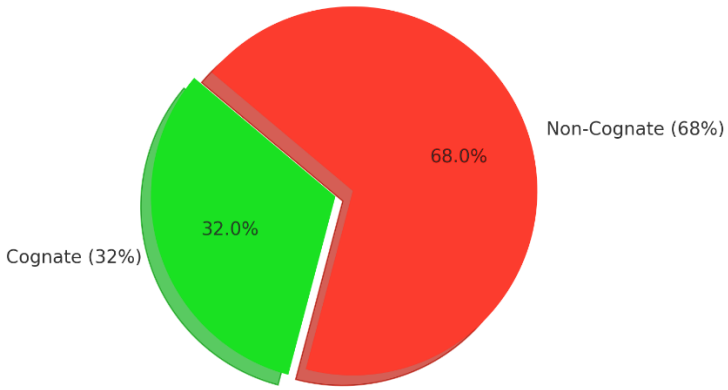
From the 200 Swadesh vocabularies analyse between Dayak Ngaju and Maanyan language, it found 64 vocabularies are cognate pairs. The comparison result is presented in the following table.

**EJI (English Journal of Indragiri): Studies in Education, Literature, and Linguistics**
**Vol. 9. No. 2, July 2025**
**ISSN (Print). 2549-2144, ISSN (Online). 2589-5140**
**Homepage:** https://ejournal-fkip.unisi.ac.id/index.php/eji/

**Table 2: Cognate word calculation**

| No | Word Pairs | Indicator | Total |
|---|---|---|---|
| 1 | Related Pairs | Identical Words | 25 |
| | | Pairs of one phoneme difference | 34 |
| | | Phonetically similar pairs | 0 |
| | | Phonemically corresponding pairs | 5 |
| | | | 64 |
| 2 | Unrelated pairs | Unrelated pairs | 136 |
| **Total** | | | **200** |

**Figure 1. Cognate Distribution between Dayak Ngaju and Dayak Maanyan**




The Cognate Distribution Chart visually represents the proportion of shared vocabulary between the Dayak Ngaju and Dayak Maanyan languages based on a comparison of the 200-word Swadesh list. Green Segment (32%) represents the cognate pairs words in Dayak Ngaju and Maanyan that are either identical or similar due to shared ancestry. While the Red Segment (68%) shows the non-cognate pairs words that do not resemble each other in form or meaning, indicating lexical divergence or replacement over time.

***Lexicostatistical analysis***

After calculating the cognate word between Dayak Ngaju and Maanyan language, the next is calculating the language kinship using lexicostatistical formula.

$$C = \frac{64}{200} \times 100\%$$

= 32%

**EJI (English Journal of Indragiri): Studies in Education, Literature, and Linguistics**
**Vol. 9. No. 2, July 2025**
**ISSN (Print). 2549-2144, ISSN (Online). 2589-5140**
**Homepage:** https://ejournal-fkip.unisi.ac.id/index.php/eji/

Based on calculating using lexicostatistical formula above, it can be concluded that the level of language kinship between Dayak Ngaju and Maanyan is at the Stock level, with a kinship value of 32%.

***Sound Changes***

After analysing 200 Swadesh list vocabulary, it is found that some words have undergone sound changes. The following is presented in a table according to the sound change type.

**Table 3. Apheresis**

| Ngaju | Maanyan | Aferesis Process |
|---|---|---|
| Bareken | Reken | The omission of "Ba" at the beginning of a word. |
| Balawu | Lawu | The omission of "Ba" at the beginning of a word. |
| Handipe | Anipe | The omission of “H” in the beginning of word. |
| Tanteluh | Anteloy | The omission of “T” in the beginning of word. |

**Table 4. Syncope**

| Ngaju | Maanyan | Syncope process |
|---|---|---|
| Ambun | Amun | The omission of "b" in the middle of a word. |

**Table 5. Prothesis**

| Ngaju | Maanyan | Prothesis Process |
|---|---|---|
| Aran | Ngaran | Adding "ng" in front of the word. |
| Kuluk | Ulu | Adding "K" in front of the word. |

**Table 6. Paragoge**

| Ngaju | Maanyan | Paragoge Process |
|---|---|---|
| Kuluk | Ulu | Adding “k” at the end of word. |

**Table 7. Epenthesis**

| Ngaju | Maanyan | Epenthesis Process |
|---|---|---|
| Tulang | Taulang | Adding "a" in the middle of the word. |

***Sound Correspondence***

**Table 8. Sound correspondence [*b*]~[*w*]**

| No | Ngaju | Maanyan |
|---|---|---|
| 1 | Batu | Watu |
| 2 | Bua | Wua |
| 3 | Bulan | Wulan |
| 4 | Bulu | Wulu |
| 5 | Burung | Wurung |

The sound changes observed between dayak ngaju and dayak maanyan such as apheresis, prothesis, paragoge, epenthesis, and the [b]~[w] correspondence are not unique to these languages but are commonly found across other austronesian languages. For example, the alternation between [b] and [w] is well-documented in several Austronesian subgroups, including Javanese (*Bulan* vs. *Wulan*) and Malagasy, indicating a broader phonological tendency within the family.

Similarly, processes like apheresis (loss of initial sound) and prothesis (addition of initial sound) also occur in the Philippine and Oceanic branches, suggesting shared evolutionary mechanisms across distant Austronesian varieties. These patterns support the view that the sound changes in Ngaju and Maanyan are part of regular and predictable historical developments rather than random shifts. Furthermore, the coexistence of systematic sound correspondences with a relatively high proportion of non-cognate items (68%) may reflect not only internal divergence but also possible substrate effects or historical language contact influencing vocabulary retention and innovation in each language community.

## CONCLUSION

The comparative linguistic analysis between Dayak Ngaju and Dayak Maanyan reveals a significant genetic relationship between the two languages. Based on a 200-item Swadesh list and the application of the lexicostatistical method, the kinship level is determined to be at the stock level, with a lexical similarity value of 32%. This indicates that while the two languages share a common ancestral origin, they have diverged substantially over time, forming separate subgroups within the Austronesian language family.

Further analysis of systematic sound changes, including consonant shifts, vowel transformations, and final consonant loss. Some sound changes types that found are apheresis, syncope, epenthesis, paragoge, and prothesis. Then, findings also on one system of sound correspondence that include five words of Dayak Ngaju and Dayak Maanyan. This is supporting the conclusion of long-term linguistic separation and internal development within each language. These

findings not only enrich our understanding of the historical evolution of Dayak Ngaju and Maanyan languages but also contribute valuable insight into the broader linguistic and cultural landscape of Borneo. The study highlights the importance of continued documentation and preservation efforts for both Dayak Ngaju and Maanyan, as they are vital carriers of indigenous knowledge, identity, and history.

## REFERENCES

Al-Abdullah, S., & Almutairi, M. A. (2024). Vowel Epenthesis in the Pronunciation of English Consonant Clusters by Kuwaiti EFL Learners. *Journal of Language Teaching and Research*, *15*(2), 664–673. https://doi.org/10.17507/jltr.1502.35

Baird, A., Cristiano, A., & Nagy, N. (2021). Apocope in heritage Italian. *Languages*, *6*(3). https://doi.org/10.3390/languages6030120

Campbell, Y. M. (2021). Kinship terminology of the bau-jagoi bidayuh in Sarawak, Malaysia. Studies in English Language and Education, 8(2), 833–847. https://doi.org/10.24815/siele.v8i2.19035

Dardanila, ., Mulyadi, ., & Tantawi, I. (2020). *Change of the Language Proto Austronesia to Gayo Language*. *Icosteerr 2018*, 1194–1198. https://doi.org/10.5220/0010069411941198

Edwards, O. (2018). The morphology and phonology of metathesis in Amarasi. *Morphology*, *28*(1), 25–69. https://doi.org/10.1007/s11525-017-9314-y

Gapur, A., Siregar, D. S. P., & Pujiono, M. (2018). Language Kinship Between Mandarin, Hokkien Chinese and Japanese (Lexicostatistics Review). *Aksara*, *30*(2), 301. https://doi.org/10.29255/aksara.v30i2.267.301-318

Hilmi, R. Z., Hurriyati, R., & Lisnawati. (2018). Phonetic Changes of Arabic Loanwords Found in Webster's Third New International Dictionary. 3(2), 91–102.

Humaidi, A., & Kasmilawati, I. (2023). Deah, Maanyan, and Banjarnese Languages Kinship in Tabalong Regency South of Kalimantan. *Tunas: Jurnal Pendidikan Guru Sekolah Dasar*, *9*(1), 67–74. https://doi.org/10.33084/tunas.v9i1.6009

Jamzaroh, S. (2021). *About The Maanyan Language and Its Dialects (An Early Review)*. *15*(Mm), 381–394.

Klamer, M. (2019). The dispersal of Austronesian languages in Island South East Asia: Current findings and debates. *Language and Linguistics Compass*, *13*(4), 1–26. https://doi.org/10.1111/lnc3.12325

Maharani, S., Satori, A., & Mahmud, F. (2024). Changes in The Sound of Absorbed Words in Mamo Zein's Translated Text by Abdun Said Ibn Abdullah. *Al Maqayis: Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban*, *1*(1), 123–132.

Mbangi, L. I., & Marafad, L. O. S. (2018). The Lexicostatistic Study of Culambacu Language with Tolaki Language. Cakrawala Linguista, 1(1), 28. https://doi.org/10.26737/cling.v1i1.496

Polgárdi, K. (2015). Syncope, syllabic consonant formation, and the distribution of stressed vowels in English. *Journal of Linguistics*, *51*(2), 383–423. https://doi.org/10.1017/S0022226714000486

Sigiro, E. P. (2015). Language Kinship of Tamuan, Waringin, Dayak Nguji, Kadorih, Maanyan, and Dusun Lawangan. 11(2), 1–14. http://id.wikipedia/wiki/neurosis

Suswandari, S., Armiyati, L., & Azid, N. (2022). Local wisdom of dayak ethnic groups in central kalimantan, Indonesia. *ETNOSIA : Jurnal Etnografi Indonesia*, *7*(1), 67–85. https://doi.org/10.31947/etnosia.v7i1.20633

Wulandari, C., Sari, D. N., Thesaloga, R., Parianson, T., Ryannor, M. F., & Misrita, M. (2022). Dialectometric Review: The Language Relationship Of Uut Danum, Ngaju, Dusun, and Maanyan. *Journal Compound: Improving the Quality of English Education*, *10*(2), 64–69. https://doi.org/10.37304/jcp.v10i2.8391