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The Distribution of Isolects in Payung Sub-District, South Bangka Regency: A Dialectometric Study

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A B S T R A C T

The present research aims to analyze the distribution of isolects in Payung Sub-district, South Bangka Regency, and determine their linguistic status within the southern Bangka dialect. Using a synchronic mixed-method approach, data were collected through interview and recording from 27 informants in eight observation points (OPs) using a 200-word Swadesh list. Dialectometric analysis was then applied to quantify the lexical and phonological distances between OPs. The results indicate that the variations in Payung Sub-district consist of sub-dialect and speech differences, with phonological differences ranging from 3% to 11%, marked by sound correspondence including diphthongization, vowel lowering, centralization, denasalization and lenition, while lexical difference ranges from 3% to 12,5%, implying the notion of retention, which native speakers refer to "bahasa kampong". Geographically, while enclave regions maintain sub-dialectal features, variations are more frequently pronounced along the sub-district borderlines. This provides empirical evidence of a dialect continuum where the level of mutual intelligibility among sub-district is still high.

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1. Introduction

Studies on language variation have been seizing linguists' attention in exploration of regional dialects. Efforts in mapping the distribution of dialects, specifically in Indonesia, would be invaluable contributions, considering the number of tribes and languages, spread across the country, in documentation and preservation of local languages (Wagiati et al., 2023; Munawarah, 2022). Among these is Bangka Malay, a prominent regional language spoken in Bangka Belitung Islands. It is a variant of Malay language and belongs to the Austronesian language (Blust, 2013). Set in South Bangka Regency, the isolects spoken in Payung Sub-district are characterized by the southern Bangka dialect, which exhibits distinct phonological and lexical features. These features serve as a crucial linguistic transition that would mark its existence among other regions. Payung sub-district, South Bangka Regency, consists of nine villages including Malik, Pangkalbuluh, Nadung, Payung, Ranggung, Paku, Sengir, Irat, and Bedengung. The subdistrict covers an area of 372,9 km2 (BPS Kabupaten Bangka Selatan, 2023). Therefore, in regard to the mobility of the local people, and also the mixing of culture by the comers from different cultures, the condition of the dialects in Bangka Malay language can be ascertained to experience changes or shifts. On the other side, it is necessary to understand that geographical factors seem to slow down the changes especially the villages located in the subdistrict, in this case Payung Sub-district. One would consider this as the advantage from the perspective of language preservation.

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In regards to the concepts of dialect, it is necessary to establish the coverage of framework within the study of dialectology. Departing from the principle of mutual intelligibility, this has been the foundation of dialectologists to establish the term 'dialect' (Chambers & Trudgill, 2009; Wichmann, 2019) as well as a subclass of a language (Boga, 2020). Principally, two approaches are designed to investigate dialectal variations. Firstly, synchronic approach, concerned with examining the current system, structures, and variations of a language across different geographic or social spaces rather than tracing how those forms developed over the time (Mbangi & Marafad, 2018; Pearsall, 2015). Working with this approach has a lot to do with those aspects that would have roles in shaping the variations in speech and pronunciation. Secondly, diachronic approach concerns with the evolution, development, and change of a language, or group of languages over time (Campbell, 2020). On the other hand, Isolect refers to be more technical term used in this research before dialectometric calculations establish its exact status. This allows researcher to objectively map features and calculate genetic linguistic relationships without subjective notions about what constitutes a language versus a dialect (Mahsun, 2017). Having determined synchronic approach as the basis of analysis, then dialectometric calculation is executed to measure the linguistic distances for both lexical and phonological traits among the neighboring speech communities (Séguy, 1973) considering the sound correspondence and lexical differences found from the data set. This means that only regular changes phonologically are taken as sound correspondence. While lexical distances are obtained by identifying the variants and registering them in a data tabulation table, so that reduced lexical data is obtained, and again, any sporadic data that might appear as idiolect is excluded. The whole stages are the embodiment of dialectology as the study of dialects.

Dialectology is the scientific study of language variations in order to set the borderlines of the isolects distributed within a region, by which the dialectometric calculation can be conducted as one of the methods in dialectology research (Séguy, 1973). In conducting the research on dialectology, the comprehensive observation towards the observed region involves several linguistic studies as the tools in analysis, including phonetics and phonology as well as lexicology. However, it is necessary that the limitation of the study be determined in the scope of geographical dialect focusing on lexical and phonological distinctions (Mahsun, 2017; Sudirman et al., 2021). Each dialect distributed within a region is characterized by speech variation, mainly in phonological variation since the variation include the allophones of phonemes and should be consistent from one region to the other regions. These allophonic variations would also be considered as regional marker, which in dialectology is identified as regional dialect.

The need in mapping the isolects is considered important in order to figure out the distribution of isolects in certain region and to determine the status of the isolects, whether it is based on the principles of dialectology, comparative reconstruction, or lexicostatistics (Saddhono & Hartanto, 2021). It is an essential endeavor, not only for delineating linguistic boundaries but also for understanding the dynamic relationship between geography, society, and language variation. Detailed dialect mapping provides crucial empirical evidence that prevents the oversimplification of a region's linguistic profile, capturing the fluid transitions between sub-dialects and subtle speech differences that might otherwise remain undocumented (Chambers & Trudgill, 2009). Besides, the language map, which is designed through this research, will be a visual reference in doing further research on Bangka Malay language. The following visual base map of Payung Sub-district was utilized to plot the eight observation points (OPs), enabling the spatial analysis of linguistic features. This map would be used to view the isolect distribution based on the dialectometric calculation and to compare the status of the isolects among the observation points.

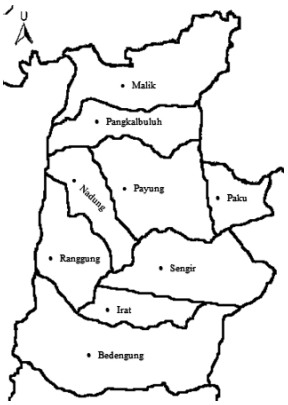

Figure 1: The base map of Payung Sub-district

Previous studies on dialect distributions in Indonesia have evoked that varieties of local languages in Indonesia are significant as linguistic resources to be the local identities and worth preserved. Compared to several research on the Malay language in other regions of Indonesia, this paper would argue that the phonological and lexical variations found in southern region of Bangka Island are quite significant. As a comparison, research on the Tamiang Malay dialect in Aceh Tamiang regency, with an area of 1957,02 Km2 (approximately 5 times larger than Payung Sub-district) has mapped the status of linguistic distance by establishing three statuses: dialectal difference, sub-dialectal difference, and speech difference, where the comparison results at the sub-dialectal level show a reciprocal attraction among observation points, mainly those which adjacent to the regional borderline. (Toha, 2013). Dialectological data were obtained from seven observation points, each representing one village from each sub-district, which means that within a sub-district, there were considered to be no speech variants. This further emphasizes the notion of "phonological and lexical density" possessed in the southern dialects of Bangka Island, which in this study focuses only on one sub-district. The coverage of an observation area needs to be taken into consideration when studying the distribution of isolects within a region, because there is concern that an observation area that is too broad may still contain fragments of variants that have the potential to become speech marker in a dialect. Referring to the dialectology study of the Malay language in West Kalimantan Province, the designated observation area consists of 13 districts, with each district designated as one observation area, which in turn consists of several sub-districts, and each sub-district consists of several villages (Patriantoro, 2025). On the one hand, the concept of phonological comparative research is absolutely essential as the basis for determining linguistic distances in order to obtain regular sound correspondences between observation points covering a wide area, even though there is still a high probability of variation within each observation point.

In another study with a research locus in Merangin Regency, Phonological variation is comprehensively presented in various phoneme positions (initial, medial, and final) that undergo changes so that lexical and phonological variation can be shown clearly. For instance, in Merangin dialect, a speaker in Bungotanjung village (Observation Point/ OP-1) says '*lagalo*' to say 'all', while speakers in Kampunglimo village (OP-2) use the word '*galo-galo*' and speakers in Sungaijering village (OP-3) say '*galo*'. (Afria & Lijawahirinisa, 2020). This speech variation is further explained in the phonological process where there is a process of deletion of the phoneme /a/ along with its initial syllable at OP-2 and OP-3. However, the results of dialectometric calculations showed no dialectal or sub-dialectal differences with an average difference of 1% - 2.5% which is basically due to the factor of retention in language or dialect identities and family bond that is still maintained as a Merangin dialect of Malay language family.

At a more in-depth level of research, dialect studies touch the fundamental micro-linguistic layer with more specific studies. One research model features a form of acoustic analysis of vowel sounds in the Deli Malay language in North Sumatra that displays the distinctiveness of seven Deli Malay vowel sounds in Deli Serdang Regency. Acoustic properties display the basic frequency range of vowel phonemes in sound production that characterizes the accent of the speakers of the language or dialect (Syarfina et al., 2024). These findings are significant in dialectological studies, especially in the

documentation of local languages with a high vitality scale, which means that the language or dialect is under threat in its existence as a cultural characteristic.

Considering the sociolinguistic and geographical factors, a study on Toba Batak language variety in Sipaholon District, North Sumatra Province, found that local speakers in relatively not-so-distant areas might vary in utterances (Sitompul, 2022). Geographically, the distance of 6.5 Km between observation points of two villages presents dialectal variants based on the lexical characters used. Although the phonological elements were not specifically studied in the article, we can examine later, what are the factors that form dialect variants around the area; whether geographical conditions, language contact, community mobility, profession, level of education, or perhaps proto-language passed down from previous generations.

Separated from the mainland of Sumatera, Bangka Island keeps rich linguistic diversities, with some remarkable discussions involving cultural studies such as the indigenous tribe of Lom in Bangka Regency, the dialects of *Orang Laot* (sea dwellers) (Anderbeck, 2012) and recently perceived as the language of the miners, as Bangka Island is the biggest tin producer in Indonesia. Recent research has discussed certain dialects in Bangka focusing on the prosodic features of Sungailiat dialect which is widely spoken in Bangka Regency (Lubis et al., 2024). It was comprehensive study acoustic phonetics that characterized the spontaneous utterances in various moods, comparing its distribution in three villages as observation points, by visualizing the acoustic values of pitch, intensity, and duration. It was found that Sungailiat dialect is frequently marked by the use of particle or filler [og], perceived as [o?] in final position of sentence boundary, tend to end in falling intonation (quite remarkable in imperative clauses), giving an impression that politeness and tenderness in speech have been the attitudes in speech of local people of Bangka. However, the description on dialect distribution was insufficient despite general description on speakers' attitude can be generalized to represent the native speakers of Bangka Malay.

Research on Bangka Malay has been conducted from various perspectives. The differences in results of previous research in dialectology is due to the fact that the dialects prominently refer to the administrative regions that might lead to a question, if the regions might have dialectal variations ignoring the region borders. Early documentation provided a foundational classification that Bangka Belitung Islands is stated to have five dialects: Mentok, Belinyu, Toboali, Sungailiat, and Pangkalpinang dialects (Silahidin et al., 1991). Recent research conducted by Bangka Belitung Islands Language Office claimed that, in particular, five dialects are distributed in Bangka Island (Ranggi Asam dialect, Tua Tunu dialect, Jeriji dialect, Tempilang dialect, and Mayang dialect) (Khaliffitriansyah; et al., 2018) and one dialect is identified in Belitung Island with several distinctions in phoneme loss and presence that differs it from Bangka Malay dialects (Miyake et al., 2022). It can be seen explicitly for those who have been analyzing the local language of Bangka Malay, the language variations as realized in daily speech exist, whether in lexical or phonological variations, and would be assumed to be the regional variations (Bowo et al., 2024; Saputra & Afifulloh, 2020). This leads to the importance in conducting research to explore the isolects used by the local islanders from the sociolinguistics point of view in order to map the language use of Bangka Malay in the study of dialectology concerning the geographical dialect of Bangka Malay language. However, most of these studies focus on broad administrative regions or qualitative descriptions of the language and lead to overlook the micro-level variations that might exist between neighboring villages within a single sub-district. Furthermore, despite the rich linguistic landscape of South Bangka, there is a significant lack of quantitative mapping specifically focused on the Payung Sub-district. Previous research has not yet applied dialectometric analysis to measure the exact lexical and phonological distances between the isolects in this area. This gap leaves an unanswered question regarding the status of these variations: whether they constitute distinct sub-dialects or merely minor speech differences. Specifically, this research seeks to: (1) determine the status of linguistic variations among OPs using dialectometric calculations; (2) describe the phonological and lexical markers that characterize these isolects. By doing so, the study provides empirical evidence of the dialect continuum and contributes to the linguistic mapping of regional languages in Indonesia.

As an integral part, the methodology section details the data collection from 8 OPs and the application of Swadesh list and dialectometric formulas. The results and discussion section present the quantitative findings of lexical and phonological distances, followed by qualitative description of sound

correspondences. Finally, the conclusion summarizes the key findings and their implications for the study of southern dialect of Bangka Malay.

2. Methods

The research is designed as a mixed-method in which quantitative method is used for dialectometric calculation to determine isolect status, while the circumstance of lexical and phonological variation is described qualitatively. The research was conducted in Payung Sub-district, South Bangka Regency, with a population of 21,704 people (BPS Kabupaten Bangka Selatan, 2024) distributed in nine villages. The research object focuses on the distribution of isolects within the scope of lexical and phonological variations as the limitation in the study. The research is designed as in the following flow chard of field research stages in isolect mapping.

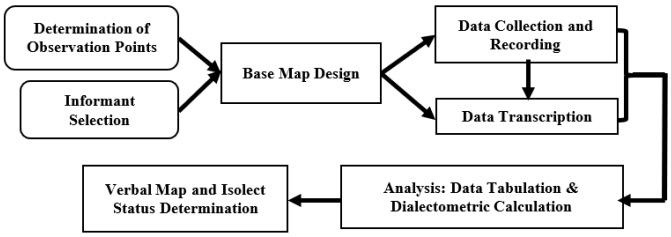

Chart 1. Flow of field research in isolect mapping

2.1. Research Subject

In order to obtain sufficient and accurate data, the number of informant should be determined based on certain criteria considering the authenticity of the speech, and this falls into the following categories: (1) adult men or women between the ages of 45 and 60; (2) possess an education level of at least senior high school; (3) restricted to native villagers with low mobility; (4) are native language speakers in the village; (5) preferably have a non-formal profession. Therefore, the representative number of informants in the nine villages as the observation points should be considered to be able to give the data as authentic as possible. In terms of conditions where there are just a confined number of individuals in an all-inclusive community who own characteristics that a specialist anticipates from the objective individuals, purposive sampling technique was applied (Rahman, 2023). This was conducted by assigning three informants from each observation point (OP), with the total number of informants was twenty-seven. In order to determine the informants in the data collection, consolidating with the village head and customary elders in the area was the first step that would lead to each informant being involved in the research. In addition, one observation point in Paku Village is combined to the adjacent observation point, which is Payung Village, due to the identical data found in both areas, therefore only eight observation points are involved to be analyzed.

2.2. Data and Source of Data

The research data obtained from the informants are in the form of lexical inventories of two hundred words in Bangka Malay, Payung Subdistrict, South Bangka Regency. These data were then recorded for the purpose of transcribing them in phonetic transcription. Audio recording used the latest version of the ©*Dolby On* for the high quality audio record, and conducted in the soundproof room. The results of this data recording will then be transcribed into phonetic transcription as a reference material for data tabulation and dialectometric calculations which ultimately become the basis for mapping the distribution of isolect variations that have been determined.

2.3. Data Collecting Technique

This research applied field study with the techniques of speaking and recording, as well as distributing the research questionnaire containing a list of 200 Swadesh words that are universally lexicon entries and used in lexicostatistical studies (Swadesh, 1955). Each village was designated as an observation point by applying a horizontal zigzag numbering system (Mahsun, 2017) so that when a line was drawn between observation points, it would form a triangle connecting the observation points.

2.4. Data Analysis Technique

Data analysis technique refers to the language research guidelines established by the Language Development and Guidance Unit, Ministry of Education and Culture (2018). The steps that must be taken are comparing data between observation areas by looking at differences at the phonological and

lexical levels (for the needs of dialectological analysis). In order to present a comparison of phonological and lexical variants spread across the nine villages, a qualitative approach based on Practical Phonetics and Phonology (Collins & Mees, 2013) was used to describe the results of data processing. Data reduction is done by identifying variants and distribution areas by registering different forms of realization (in the original data from the field) between one observation points to another in a data tabulation table, covering the phonological and/or lexical differences. These were followed by determination of the status of the isolects based on the results of dialectometric counting proposed by Séguy (1973) (Mahsun, 2017) to get the percentage ratio using the formula: $\frac{(S\ X\ 100)}{n} = d\%$.

3. Results and Discussion

This section commences with the phonemic inventory, including the vowels, consonants, and diphthongs, in initial, medial, and final positions, and it is followed by dialectometric calculation. The status of the isolects in Payung Sub-district analyzed in this section will be categorized based on the phonological differences of following criteria: greater than 17%, perceived as language difference; 12% to 16%, perceived as dialect difference; 8% to 11%, perceived as sub-dialect difference; 4% to 7%, perceived as speech difference; below 3%, perceived as no difference. While lexical variations are determined as the following criteria: 81% to 100% is perceived as language difference, 51% to 80% as dialect difference, 31% to 50% as sub-dialect difference, 21% to 30% as speech difference, below 20% as no difference. The initial analysis begins with establishing phoneme inventories including vowels, consonants, and diphthongs. The following table lists the vowels found in Payung Sub-district.

Table 1. Vowel inventory in Payung Sub-district region

No.	Vowels	Initial position	Medial position	Final position
1	/i/	/itəːm/ (black)	/minom/ (drink)	/ŋali/ (dig)
2	/e/	/es/ (ice)	/lihe:r/ (neck)	/name/ (name)
3	/a/	/aŋeːn/ (wind)	/hajap/ (wing)	/ŋəlʊda/ (spit)
4	/ə/	/əmpat/ (four)	/mərəs/ (squeeze)	-
5	/u/	/uraŋ/ (person)	/kutoːr/ (dirty)	/dəbu/ (dust)
6	/o/	-	/huŋoːt/ (mouth)	/haro/ (poor)

Besides vowels, diphthongs have their roles as phonemes but at the same time some of them appear as allophonic variations, especially in the “enclave” regions that do not border with other sub-districts.

Table 2. Diphthong inventory in Payung Sub-district region

No	Diphthongs	Initial position	Medial position	Final position
1	/ea/	-	/kəmbeaŋ/ (flower)	-
2	/ei/	-	/kuleit/ (skin)	/matei/ (die)
3	/ae/	-	/ŋalaer/ (flow)	/limaeː/ (five)
4	/au/	-	/telauk/ (egg)	/ŋəkau/ (scratch)
5	/ai/	-	/həmpaɪt/ (narrow)	/arai/ (day)
6	/ou/	-	/ŋitoʊŋ/ (count)	/nunou/ (burn)

Some diphthongs are classified as allophonic, including /eu/ in /deneu/ (lake) which is the allophone of the phonemes /au/; and /ao/ in /asaok/ as the allophone of the phoneme /u/. The inventory also lists the consonants found in this region.

Table 3. Consonant phoneme inventory in Payung Sub-district region

No.	Consonants	Initial position	Medial position	Final position
1	/p/	/pɪndək/ (short)	/həmpeɪt/ (narrow)	/asəp/ (smoke)
2	/b/	/bərneaŋ/ (swim)	/nibouk/ (punch)	-
3	/m/	/mateː/ (eye)	/rambout/ (hair)	/nikəm/ (stab)
4	/t/	/tiduk/ (sleep)	/kutoːr/ (dirty)	/hiŋot/ (smell)
5	/d/	/dudʊk/ (sit)	/idup/ (alive)	-
6	/n/	/nigəːp/ (hold)	/muntaː/ (vomit)	/taon/ (year)
7	/r/	/rambout/ (hair)	/ɡaream/ (salt)	/dəŋər/ (listen)

8	/s/	/suŋai/ (river)	ise:ʔ (meat)	/begus/ (good)
9	/l/	/lətout/ (knee)	/kepale/ (head)	təbə:l (thick)
10	/c/	/caka:r/ (claw)	/kəcɪt/ (small)	-
11	/ ʤ/	/ʤao:h/ (far)	/iʤea:w/ (green)	-
12	/ɲ/	/ɲəsah/ (wash)	/bəɲəbe/ (breathe)	-
13	/j/	-	/aja:h/ (father)	-
14	/k/	/kərne/ (because)	/takoʊt/ (afraid)	/burok/ (bad)
15	/g/	/guguk/ (fall)	/puŋguŋ/ (back)	/numbʊg/ (throw)
16	/ŋ/	/ŋəbət/ (tie)	/aŋət/ (warm)	/ɲuroŋ/ (push)
17	/ʔ/	-	/təʔapoʊŋ/ (float)	/bəsa:ʔ/ (big)
18	/h/	/həmue/ (all)	/dərea:h/ (blood)	/di hini/ (here)

3.1. Phonological Variations

Based on the phonological mapping in Payung Sub-district, several variations consisting of sound correspondence were found.

1) /u/ → /ou/, formulated as /u/ → [ou]/__]σ where a high back rounded vowel diphthongizes when occurring in syllable-final position. Considering the state of final syllable could be open or closed syllables, then the rules might appear as /u/ → [ou]/__C]σ. This case is found consistently in OP 8, scattered in OP-5, 6 and 7, varied from the OP-1, 2, 3, and 4 as shown in the following glosses: *ash* /abu/→/abou/, *burn* /nunu/→/nunou/, *count* /ŋituŋ/→/ŋitouŋ/, *dust* /dəbu/→/dəbou/, *afraid* /takut/→/takout/, *feather* /bulu/→/bulou/, *grass* /rumput/→/rumpout/, *heart* /ʤantuŋ/→/ʤantouŋ/, *horn* /tanduk/→/tandouk/, *I* /aku/→/akou/, *knee* /lutut/→/lutout/, *louse* /kutu/→/kutou/, *new* /beru/→/berou/, *nose* /iduŋ/→/idouŋ/, *sing* /bəlagu/→/bələgou/, *sleep* /tiduk/→/tidouk/, *straight* /lurus/→/lurous/, *tail* /ikur/→/ikour/, *that* /tu/→/tou/, *sweep* /ɲapu/→/ɲapou/, *wood* /kaju/→/kajou/.
2) /i/ → /ai/, formulated as V[+high] → V[-high]V[+high]/C__]σ]ω. This formulation considers the state of the vowels occurring in final position of final syllable resulted in diphthongization, however the preceding consonants are heterogenous in any set features. This rule emerges from the following glosses: *day* /ari:/→/arai:/, *dig* /ŋali/→/ŋalai/, *fire* /api:/→/apai:/, *leg* /kaki/→/kakai/, *husband* /laki:/→/lakai:/, *liver* /ati/→/atai/, *we* /kami/→/kamai/ where the diphthongization exists persistently in OP-8, distributed in OP-2, 3, 5, 6, 7, and is the variation of monophthong /i/ in OP-1 and 4.
3) /a/ → /ea/, including as diphthongization, and by the same time is considered as vowel epenthesis, which is formulated as /a/→[ea]/__C]σ]word. Geographically this occurs persistently in OP-4, 5 and 8, distributed across OP-2, 3, 6, and 7, and is distinguished from its variation in OP-1. The consonant that closed the syllable is indicated to be heterogenuous and do not share any features. The glosses containing this variation including: *animal* /binataŋ/→/binateaŋ/, *flower* /kəmbaŋ/→/kəmbeaŋ/, *fruit* /bue:h/→/bueah/, *green* /iʤa:w/→/iʤea:w/, *heavy* /bərat/→/bəreat/, *long* /panʤaŋ/→/panʤeaŋ/, *moon* /bula:n/→/bulea:n/, *rain* /uʤan/→/uʤean/, *swim* /bərənaŋ/→/bərəneaŋ/, *tongue* /lida:h/→/lidea:h/, *worm* /gəlaŋ/→/gəleaŋ/.
4) /u/ → /o/, formulated as /u/ → [o] / __ C]σ, in which the C]σ is considered as [+consonantal] with prosodic feature [+coda] since no final consonants share any identical features. The same thing occurs during the onset test in the syllables containing the variation. The data are found in the following glosses: *year* /taun/→/taon/, *tail* /ikur/→/ikor/, *straight* /lurus/→/luros/, *rod* /tuŋkat/→/toŋkat/, *sit* /duduk/→/dudok/, *sea* /laut/→/laot/, *rotten* /busuk/→/busok/, *one* /hikuk/→/hikok/, *grass* /rumput/→/rumpot/, *afraid* /takut/→/takot/, *far* /ʤau:h/→/ʤao:h/, *egg* /təluʔ/→/təloʔ/, *dog* /asuʔ/→/asoʔ/, *bad* /buruk/→/burok/.
5) /i/ → /ə/ in final syllable with the rules: /i/→ [ə]/ __]σ, indicating that a high front vowel /i/ undergoes centralization in final syllables. Centralization persists in OP-4, and 7, distinguishes them from other observation points. This variation occurs in the following glosses: *dry* /kəri:ŋ/→/kərə:ŋ/, *a few* /hikit/ → /hikət/, *meat* /dagi:ŋ/→/dagəŋ/, *small* /kəcɪt/ → /kəcət/, and *branch* /rantiŋ/ → /rantəŋ/.
6) Denasalization /m/ into /b/ or /p/, which is formulated as : /m/ → [+stop, -nasal, +bilabial]/ __σ. This variation occurs in OP-1 but the alternation apparently distributed in some other areas. The following glosses show how the variation occurs: *give* /məri:k/→/bəri:k/, *kill* /muno:h/→/buno:h/, *split* /miak/→/piak/, *squeeze* /mərəs/→/pərəs/, *when* /hamıle:/→/habıle:/
7) Initial consonant weakening, or lenition /s/ → [h]/ #__[+syllabic] where the alveolar /s/ is weakened to the glottal position /h/ when in it is followed by vowel in syllable boundary. This sound correspondence appears in the following glosses: *wing* /sajap/→ /hajap/, *who* /sape:/→ /hape:/, *when*

/səbile:/ → /həbile:/, *there* /sane/→ /hane/, *river* /suŋai/→ /huŋai/, *push* /surʊŋ/→ /hurʊŋ/, *one* /sikoːk/→ /hikoːk/, and *mouth* /suŋoːt/→ /huŋoːt/

3.2. Lexical Variations

Based on the data collected containing two hundred words from Swadesh list, lexical variations are identified to appear in several observation points. The following table draws lexical variation found from the data.

Table 4. Lexical variation in Payung Sub-district region

OPs / gloss	OP-1	OP-2	OP-3	OP-4	OP-5	OP-6	OP-7	OP-8
branch	rəntɪŋ	rantəŋ	raŋges	rigɪs	dean	rantəŋ	rantiŋ	dən
blow	səbu	səbu	səbu	tiop	ɲəbuː	tiop	bətiop	ɲəbuː
breathe	bənapas	bəɲəbe	ɲabæ	bənapas	bəɲəbe	bəɲəbe	bəɲabe	bəɲəbe
burn	nunu	tunou	tunou	bəker	nunou	nunou	nunou	beker
child	budak	anaʔ	anaʔ	anaʔ	anaʔ	anaʔ	anaʔ	anaʔ
cloud	awaːn	awaːn	rəməːŋ	rəməːŋ	awaːn	rəməːŋ	rəməːŋ	tərmaːŋ
dirty	kədəl	kutoːr	kutoːr	kutoːr	kutoːr	kutoːr	kutoːr	kutoːr
fight	bəkatɛrʔ	bəgesaʔ	bəkatiːk	bəkəlai	bəkatɛrʔ	bəkəlai	bəkatɛrʔ	bətindʒoʊ
float	tərapuːŋ	ŋambeᵃːŋ	ŋambeᵃːŋ	təʔapoʊŋ	ŋambeaːŋ	ŋapoʊŋ	tərapʊŋ	ŋambəːŋ
frozen	ŋəraːs	maŋkəŋ	maŋkəŋ	məmbəkuː	bəkuː	bəkuː	bəkuː	bəkoʊ
hit	ɲəgur	bəbuk	tibuk	mənibuk	nibouk	ŋəntam	niboʊk	niboʊk
hunt	bərburu	bəburu	bərəsək	bərburu	bərɪsək	mɪntai	bərburu	bələpʊn
if	misal	dugu	kire-kirae	məːn	məːn	məːn	kalaʊ əː	məːn
know	tauː	tauː	takkən	tauː	takkən	tauː	takkən ə	tauː
man	laki	bʊdʒeaŋ	bʊdʒeaŋ	lakᵉi- lakᵉi	lakei	lakei	bʊdʒeaŋ	uraŋ lakai
many	nambun	beɲeak	nambun	beɲeak	beɲeak	beɲeak	beɲeak	beɲeak
push	dʒulaʔ	surʊŋ	hurʊŋ	dʒərəŋkəŋ	dʒəruŋkəŋ	ɲurʊŋ	ɲəreŋkaŋ	ɲintək
say	ŋomoŋ	bəcakap	bəcakap	bəkate	bəcakap	ɲəbʊt	bəkate	bəkate
see	ŋəliat	tiŋok	tiŋok	niŋok	ŋəhələk	tiŋok	ŋəliət	ŋəhələk
split	miak	piak	piak	ŋəbələah	ŋəbələah	ŋəbələah	miak	ŋəbələah
tail	kitok	ikur	ikor	ikor	ikur	ikur	ikour	ikour
throw	melitaŋ	lɪmpar	rɪmbət	rɪmbət	ŋərɪpət	rɪmbət	numbʊg	ŋimpət
woman	cewɛʔ	dejeŋ	dejeaŋ	uraŋ bini	bini	bini	raŋ bini	oraŋ bini
wash	ɲəsah	ɲəsah	ɲəsah	ɲəsah	ɲəsah	ŋəsah	ŋəsah	məsoʊk
with	dəŋən	ŋəːn	dəŋən	dəŋən	dəŋən	kəːn	dəŋən	kəːn
tree	bataŋ	betaŋ	betaŋ	bataŋ	kaju:	bitaŋ	pohon	kaju:

Lexical variations shown in the table identify that the natives in each village tend to be identical in the way each village resident speaks, which Bangka people often term as "bahasa kampong" (kampong language, despite its existence as dialect, not language) and is claimed to be spoken mostly by older natives. The shifting of lexical forms is obviously influenced by the geographical position, where the observation points located in the northern part and bordering Central Bangka District and Simpang Rimba Sub-district have significant differences from those in southern areas, especially those bordering Air Gegas and Pulau Besar Sub-district, with the number of variations two up to four words vary lexically, and by the same time phonological variations contribute to the shifting process. The distribution of lexical variation turns to be arbitrary. OP-1 might be considered as starting point which contributes to the indication of the influence of dialects used beyond the sub-district, while the enclave villages preserve the derivative elements within the dialects until they blend with other variations. The gloss 'hunt' reflects four variations distributed along the sub-district, involving phonological and lexical variation: the word /bərburu/ is used in OP-1, 4, and 7, with the shifting in OP-2 where omission of /r/ occurs in /bəburu/, giving another question whether this is a phonological simplification that occurs in the prefix /bər/ given to the base word /buru/ since other data display similar cases as in the gloss 'play' /bərmaen/ and /bəmaen/, or it may emerge as lexical innovation. Contrasted from the old word accepted, the gloss 'hunt' varies in OP-3 /bərəsək/ with its variation /bərɪsək/ in OP-5, /mɪntai/ in OP-6 and /bələpʊn/ in OP-8. Another case is shown from the gloss 'see' that comes in three variations, /ŋəliat/ and /ŋəliət/ in OP-1 and 7 with the changing of /a/ into /ə/, /tiŋok/ in OP-2,3, and 6 with the initial consonant variation in OP-4 /niŋok/, and /ŋəhələk/ which is considered as the old form in OP-5 and 8.

This lexical variation would lead to a continuum, despite their irregularity in the distribution, and would reinforce the concept of retention in the local speaker's community within smaller group, and on the other side display lexical innovation, especially those which experience changes that may influence the phonological and lexical aspects.

3.3. Dialectometric Calculation

The results of calculation from comparison among the eight observation points in Payung Sub-district, South Bangka, is presented in the following table, in which each connected observation point has been compared and together they form dialectometric triangles.

Table 5. Percentage of phonological and lexical differences from 8 (eight) observation points

No	Comparison between OPs	Number of differences		Differential percentage	
		Phonological	Lexical	Phonological	Lexical
1.	OP-1 – OP-2	20	24	10%	12%
2.	OP-2 – OP-3	7	22	3,5%	11%
3.	OP-3 – OP-4	17	25	8,5%	12,5%
4.	OP-4 – OP-5	10	11	5%	5,5%
5.	OP-5 – OP-6	16	7	8%	3,5%
6.	OP-6 – OP-7	21	20	10,5%	10%
7.	OP-7 – OP-8	10	16	5%	8%
8.	OP-1 – OP-3	22	23	11%	11,5%
9.	OP-2 – OP-4	15	15	7,5%	7,5%
10.	OP-3 – OP-5	12	9	6%	4,5%
11.	OP-4 – OP-6	18	6	9%	3%
12.	OP-5 – OP-7	15	10	7,5%	5%
13.	OP-6 – OP-8	18	6	9%	3%

Based on language mapping research guidelines, the dialectometric calculations indicate that the isolects spoken across the eight observation points (OPs) in Payung sub-district exhibit low to moderate levels of phonological and lexical differentiation, suggesting a relatively homogeneous dialect area within the Southern dialect of Banka Malay although it is still rich of variations. Overall, the percentage of differences does not exceed 12,5% which places all OPs within the category of speech varieties belonging to a single dialect rather than distinct dialects. The status of sub-dialect is obtained phonologically, while from lexical variation, the difference percentage of the whole OPs is below 20%, which places the whole OPs status as no difference.

With the reference to the dialectometric calculations, a verbal map can be drawn to demonstrate the linguistic patterns. The following map reveals a gradual transition of linguistic features across the eight OPs rather than abrupt shifts. Linguistic variations are most pronounced at the borders of Payung Sub-district. Significant lexical and phonological shifts are marked in the northern part, bordering with Central Bangka Regency and Simpang Rimba Sub-district (sub-dialectal status) compared to those in the southern regions.

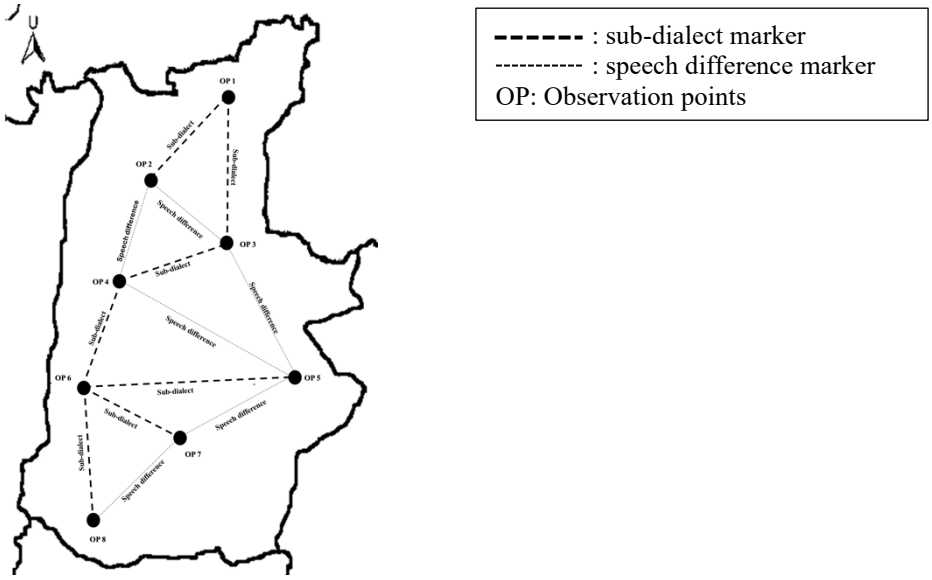

Figure 2. The result of dialectometric calculation comparing the eight OPs

This map also identifies "enclave" or inland regions that experience sub-dialect maintenance. These areas show the lowest percentage of differences (3%), indicating a strong retention of original Bangka Malay features that locals refer to as "*Bahasa kampong*" or language of the locals.

From the phonological perspective, the highest differential percentage occurs between OP-1 and OP-3 (11%) and OP-6 and OP-7 (10,5%), indicating slightly greater phonological divergence at these points. These figures suggest the presence of phonological transition zones, rather than clear-cut boundaries. In contrast, several OPs comparison results, such as OP-2 – OP-3 (3,5%), OP-4 – OP-5 (5%), and OP-7 – OP-8 (5%), show minimal phonological differences, pointing to strong phonological cohesion among neighboring areas. This pattern reflects gradual phonological diffusion across the region than abrupt segmentation. From the lexical perspective, the variation tends to show pronunciation varieties than phonological variation, leads to dialect continua. The highest lexical differences are found between OP-3 – OP-4 (12,5%), OP-1 – OP-2 (12%), and OP-1 – OP-3 (11,5%). These results indicate that while phonological systems remain relatively stable across the sub-district, lexical choice is more sensitive to micro-regional factors (Chambers & Trudgill, 2009), such as settlement history, social interaction networks, and possible contact with neighboring isolects. Nevertheless, the lexical percentages still remain below the threshold for subdialect differentiation, reinforcing the view that these isolects form part of the same dialect area. The comparison of non-adjacent OPs (as in OP-1 – OP-3 and OP-2 – OP-4) does not yield significantly higher percentages than adjacent comparisons, suggesting that geographical distance alone does not strongly determine linguistic distance in Payung Sub-district. Instead, the distribution points toward a dialect continuum, in which differences accumulate gradually and unevenly across space. In addition, the enclave villages tend to possess speech difference or varieties across the sub-district, compared with the villages bordering with the adjacent sub-district, possessing the status of sub-dialect that would lead to a perception that dialect contact from other region influence the speech varieties in this region.

As summary, the qualitative analysis confirms that the isolects across Payung Sub-district constitute a single, internally diverse speech community within the Southern dialect of Bangka Malay. The observed phonological and lexical variations function primarily as intra-dialectal variation (within a dialect). This supports the classification of Payung Sub-district as a cohesive dialect region characterized by gradual and systematic variation rather than sharp linguistic boundaries.

3.4. Discussion

The analysis has examined the distribution of isolects in Payung Sub-district and reveals systematic phonological and lexical variation within what can be classified as a single dialect area of Bangka Malay. The present findings confirm and extend earlier studies on Bangka Malay dialects. While previous research (Anderbeck, 2012; Khaliffitriansyah; et al., 2018) primarily identified dialect

classification based on broader regional distribution, this study demonstrates that even within a single sub-district, fine-grained phonological variation such as systematic diphthongization emerges as a salient dialect marker. The diphthongs /ou/, /ai/ and /ea/ exhibit consistent vowel breaking processes and seem to be the dialect marker used in Payung Sub-district. Compared with other dialects in Bangka Malay that had been analyzed, one of which is spoken in Sungailiat Sub-district, Bangka Regency, diphthongization is not found as speech variation (Lubis et al., 2024). Geographically, the dialect used in Payung Sub-district refers to the one used in the capital of South Bangka Regency, Toboali, which is a part of Jeriji dialect. However, another term is commonly used by the natives, that is Toboali dialect, which refers to the administrative region. The issue on speech varieties in Bangka Belitung Islands has been an extensive discussion regarding the density of differences in speech across the villages, and hence emerging the claim that one variation belongs to one dialect based on the perspective of the local natives or indigenous elders. However, this argues the evident found in literary genres, as the lines of poems or *pantun*, *syair*, or any folktales (Omar et al., 2015).

In the scope of dialectology, the variations found in Payung Sub-district are closely related to intra-dialectal variation as found in many local languages in Indonesia (Lauder, 1993). The density of variations, specifically in phonological features shows that the speech variations may be spoken in regularity or what is termed as sound correspondence, the set of sounds found in a set of cognate words that are deemed to correspond regularly (Brown & Miller, 2013). However, contrary to what has been observed on the sea tribes of Bangka, specifically Sekak tribe, who is characterized by minimal vowel lowering, no devoicing of /r/ and reduction of final diphthongs (Anderbeck, 2012), the enclave position of several villages maintains the proto-language marked by the regular formation of diphthongs that is only used in this sub-district.

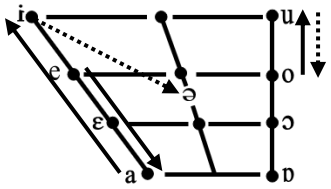

Chart 2: Vowel chart showing the diphthongization movement (solid line) and the vowel shifting (dashed line)

Viewed from its rule /u/ → [ou]/__]σ obtained from the data, the phonological pattern tends to be more lexicalized as dialect-specific rule. The syllable boundary distinguished the variant since this diphthong may appear in middle and final position, not merely in final as what is characterized by Proto-Malayic (Adelaar, 1993), hence brings up the notion of retention which has been developed within the community since it is in the form of diphthong raising as the result of vowel breaking. In several cases, diphthongization in Malayic dialects is resulted from consonant shifting as in /pulaŋ/ (*go home*) shifts into /pulai/, or may be transcribed as /pulaj/. The pattern of raising diphthong is also shown in /i/ → /ai/, with the phonetic condition $V_{[+high]} \rightarrow V_{[-high]}V_{[+high]}/C\_\_\ ]\sigma]\omega$, ignoring the vowel length since this case occurs in both long and short /i/. Since the diphthongs are derived from single vowel phoneme, it is necessary to figure out the changes focusing on the tongue position where the two diphthongs /ai/ and /ou/ are raising while /ea/ is falling diphthong. In addition, the second element in the diphthong retains the monophthong root. The variation resulted from diphthongization may lead to epenthesis, or be precise refers to fission, splitting a nucleus into fragment components as phonological contrasts requiring differentiation in each gestural domain (Staun, 2013). In regard to the phonetic environment, it is suggested that further research on phonological features be inquired to conduct especially to investigates whether the preceding consonants (for instance rhotic-conditioned rule) may influence the variation, or whether a word in the state of open or closed syllable takes role in the vowel breaking.

Initial consonant weakening or lenition is the most identical feature as dialect marker in southern dialect of Bangka Malay, indicated by the changing of consonant /s/ into glottal [h], involving loss of supraglottal place features while preserving [+continuant] and [-voice] in initial position. The data show regular sound correspondence whereby the voiceless alveolar fricative is realized as the voiceless glottal fricative. The rule applies before any vowels, without sensitivity to height, backness, or rounding, as shown in the datum *wing* /sajap/→ /hajap/. Despite its uniqeness as dialectal marker, research on this matter is hardly ever published, specifically to investigate the borderline of the use of this typical pronunciation and to what extent this variation occurs within phonological features. This

may lead to further question if this variation might be allophonic or whether it is acceptable when the changing is placed in medial or final position.

Dialectometric calculation has affirmed that the isolects used in Payung Sub-district exhibits low to moderate phonological and lexical differentiation. These findings reveal a linguistic condition that corresponds to the geographical conditions of an area, in this case a small area with a high level of speech diversity. This can be seen in a comparison of Payung Sub-district, which covers an area of 372,9 Km2 and is classified as having two isolect distribution statuses: (1) sub-dialect status in three regional clusters (OP-1 – OP-2 – OP-3; OP-3 – OP-4 – OP-6; and OP-6 – OP-7 – OP-8); and (2) different speech status in three clusters (OP-2 – OP-3 – OP-4; OP-3 – OP-5 – OP-4; and OP-5 – OP-7 – OP-8). This provides empirical support for the concept of dialect continuum (Chambers & Trudgill, 2009) showing that the isolects remain mutually intelligible and structurally cohesive, yet exhibit gradual differentiation across area. Viewed from sociolinguistic and geographical factors, villages located along administrative borders tend to display phonological and lexical variability, likely due to increased contact with neighboring dialects from adjacent sub-districts, such as Air Gegas and Simpang Rimba. This also supports the view that dialect continua are characterized by diffusion and gradual change, rather than abrupt separation, particularly in regions with sustained interaction among speech communities (Wieling & Nerbonne, 2015).

4. Conclusion

The distribution of isolects spoken in Payung Sub-district, South Bangka Regency displays the phonological and lexical variations based on dialectometric calculations. At least seven regular sound correspondence are found, covering the diphthongization, vowel lowering, denasalization, and lenition. Among those phonological changes, lenition is the dialect marker of southern dialect in Bangka Island in which the consonant /s/ shifts to /h/ in initial position. Phonological cohesion among neighboring observation points are displayed along the transition zones from each observation points, establishing a dialect continuum. Phonologically, the observation points are divided into three clusters, establishing the status of speech difference and sub-dialect based on dialectometric calculation. Lexical variation ranges from 3% to 12,5%, determining the status of no difference. Lexical variations are found along the area bordering with the adjacent sub-district, while some identical words (assumed as the proto form) are still spoken mainly by the elderly, suggesting the language maintenance supported by the geographical condition and low to moderate social mobility. This suggests that regional width is not necessarily the factor of language variety level especially in conducting dialectology research. Since the study on Bangka Malay language and its varieties is considered insufficient, it is suggested that further research on dialects in Bangka Malay language be conducted in order to investigate its language kinship with other Malayic language family, and also to observe the conditions of other dialects in Bangka islands and its language vitality.

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