



The Sound Changes in the Minangkabau Language Spoken by Padang's Ethnic Chinese

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Abstract: Variations in Minangkabaunese sounds include the segmental phonemes of the Minangkabaunese spoken by the Chinese ethnic in Padang. This study aims to identify the types and rules of Minangkabaunese sound changes uttered by the Chinese. This used a qualitative descriptive approach. The data on the Minangkabaunese words spoken by the Chinese in Padang were obtained through participant observation and interviews addressing oral characteristics. The Minangkabaunese Swadesh list, recording equipment, and writing implements were used in this study. The findings show that the segmental phonemes of the Minangkabaunese voiced by ethnic Chinese in Padang deviate from standard Minangkabaunese. They use 18 out of 20 standard consonants, resulting in a disparity. The consonants /w/ and /z/ are nearly never used in standard Minangkabau. This study reveals that numerous elements, such as phonetic and phonological characteristics, affect the variations of the Minangkabaunese spoken by the Chinese in Padang. This study contributes to the advancement of linguistic theory, specifically language phonology. The findings of this study can be utilized to document the phonological system of the Minangkabaunese spoken by Chinese in Padang, which implicates the acceptance of Chinese ethnicity and diversity in Muslim-dominant Minangkabau regions. The finding shows that the Minangkabaunese language is an open system reflecting the culture of tolerance and respect for diversity.

Keywords: segmental phoneme, consonant, the sound change; chinese ethnic, minangkabaunese

Recommended citation: Wahyudi, M., Fitri, R., Pratama, F. A., & Febrianto, R. (2024). The Sound Changes in the Minangkabau Language Spoken by Padang's Ethnic Chinese. *Journal of Innovation in Educational and Cultural Research*, 5(1), 163-168.

INTRODUCTION

Language modifications occurred as a result of contact between ethnic Chinese and Minangkabau. These adjustments must be examined, and the regulations must be stated. Then, it moves on to language shifts, which are more common in the language usage habits of ethnic minorities and are mainly induced by internal and external reasons. Internal influences include attitudes towards language speakers and the scope of language use in society. External influences include absolute birth rates, mixed marriages, migration, emigration, and socioeconomic stability (Siregar, 2022). Migration and intermarriage were identified as significant changing causes by the authors. The changes in phonemes and sounds in the Minangkabau language spoken by ethnic Chinese have resulted in a distinct linguistic variety. For instance, the word *baliak* [balia] in Ethnic Chinese changes the Minangkabau language to *balek* [bale]. It has also developed a Chinese cultural identity that coexists with the indigenous Minangkabau population. The Pondok Minangkabau language creates a "new" identity for Padang's Chinese ethnic population. The usage of the local/Minangkabau language, as well as the "loss" of the capacity to speak the mother tongue, demonstrates that the development of Chinese ethnic identity in Padang has been influenced by external influences, including local Minangkabau culture (Makmur et al., 2018).

Ethnic Chinese are scattered over numerous areas in West Sumatra, including Padang, Bukittinggi, Payakumbuh, Padang Panjang, and Batusangkar. The greatest population in Padang is found along the Batang Arau River in Kampung Pondok (Tanah Kongs), then known as the Chinese region. They both speak the same Minangkabau language, although with slight variances. The Minangkabau language is a native language of West Sumatra. The Minangkabau language originates from the Malayo-Polynesian protolanguage, an Austronesian language branch (Jufrizal, 2012). This language has 7 million speakers in West Sumatra, Riau, northern sections of Bengkulu and Jambi, and Negeri Sembilan, Malaysia. More than 5.6 million people, primarily in Padang and the highlands of West Sumatra, use this language as their mother tongue. Minangkabau language has seven dialects: Agam, Limapuluh Kota, Pariaman, Tanah Datar, Pesisir Selatan, and Solok, each with multiple subdialects. Because Padang is the capital of West Sumatra Province and the centre of government activity, the Padang dialect is considered the standard Minangkabau language (Iskarous & Pouplier, 2022). This research includes three aspects of the phonological approach such as 1) the articulatory phonetics on prosodic modulation gestures Iskarous and Pouplier (2022), phonetic voice quality (Garellek, 2022), speech behavior analysis using

articulatory observation (Ji et al., 2017), articulatory and acoustic variation (Lorenc et al., 2023); dialectal phonology constrains the phonetics of prominence (Smith & Rathcke, 2020), automatic detection of facial articulatory features (Garg et al., 2020), voicing and frication at the phonetics-phonology interface (Bjorndahl, 2022), a measure of phonetic similarity (Wieling et al., 2012), the accuracy, recording interference, and articulatory quality (Pucher et al., 2020), and the acoustic and articulatory study of rhotic and rhotic-nasal vowels of Kalasha (Hussain & Mielke, 2021); 2) The acoustic phonetics on validating acoustic approach to Spanish /S/ of sociophonetics (Gradoville et al., 2022) and using acoustic features for mild dementia patients (Nishikawa et al., 2022); 3) Auditory phonetics phonetic discrimination mediates the relationship between the auditory brainstem, response stability, and syntactic performance (Tecoulesco et al., 2020); and consensus auditory-perceptual evaluation of voice (CAPE-V) (Mossadeq et al., 2022). The language's phonological system can then be broken into segmental and suprasegmental components. Vowels, consonants, and diphthongs are segmental aspects. Meanwhile, pitch, stress, juncture, and length are suprasegmental aspects. The analysis, which focuses on segmental phonemes, examines sound changes in the Minangkabau language as it is spoken by Chinese people in Padang.

The initial conditions of the Minangkabau language sound created by ethnic Chinese in Padang vary depending on various factors, including history, social environment, and individual family background. However, many ethnic Chinese in Indonesia, particularly in Padang, continue to speak *Hakka*, *Hokkien Canton*, as their mother tongue (Halim & Sampurno, 2013). Although Minangkabau is the primary language in West Sumatra, many ethnic Chinese people communicate in Chinese. Those who have lived in Indonesia for several generations may also be fluent in Indonesian. They may also be familiar with the Minangkabau language, especially if they engage with the Minangkabau community or have friends or family members from that ethnic group. It is crucial to recall that the use of the Minangkabau language by ethnic Chinese in Padang varies greatly among individuals and households. Most ethnic Chinese in Indonesia keep their Chinese language as part of their cultural identity. However, they can also communicate in Indonesian in certain instances, particularly with members of the general public who do not speak Chinese. This study is conducted for several reasons, including the following: 1) There are several changes in the sounds of the Minangkabau language that ethnic Chinese pronounce; 2) The Minangkabau language is used as a mother tongue in West Sumatra, but ethnic Chinese still make different variations and even create some new vocabulary; and third, ethnic Chinese have created some new vocabulary; 3) The Minangkabau language used by ethnic Chinese differs significantly from the normal Minangkabau language used in Padang in terms of phonemes, sounds, and word pronunciation. The findings of this study can be utilized to document the phonological system of the Minangkabau language spoken by Chinese in Padang.

METHODS

This research was a descriptive quantitative study investigating one of the phenomena in the area. It solved the problem by methodical, scientific, accurate, and factual representations of the data collected by the problem's focus (Creswell, 2012). Based on this understanding, it is possible to infer that descriptive research was conducted by gathering information about current symptoms, clearly articulating the goals to be reached, deciding how to approach them, and collecting various types of data as material for reports. The researchers examined the sound modifications of Minangkabau language employed by Ethnic Chinese in Padang in this study. This study's data were the terms spoken by ethnic Chinese in Padang. They were given a Swadesh list including 200 Minangkabau words. The researcher instructed them to say the words aloud. This study enlisted the help of five informants. They were chosen based on the following criteria: (1) male and female gender, (2) age range of 20-60 years, (3) born and raised in Padang and rarely leave the area, (4) lived in Padang for more than five years, (5) ability to speak Minangkabau, (6) low education, and (6) have good condition and complete speech equipment.

Initially, participant observation devices were employed to collect data on the Minangkabau language spoken by ethnic Chinese in Padang. This activity can be guided by the following stages or blueprints: (1) Researchers participate in the daily lives of Padang's Chinese minority, (2) capture talks using a voice recorder or camera to collect Minangkabau language data (important features). An interview utilizing the Swadesh list is the second tool used to collect data on the Minangkabau language spoken by Chinese people. The Swadesh list is a reference to help ethnic Chinese pronounce Minangkabau words more easily. Swadesh's list contains 200 words. In this data collection method, interviews served numerous crucial functions: (1) Interviews helped scholars thoroughly understand the Minangkabau language used by Chinese people. This includes knowledge of grammar, vocabulary usage, and sentence constructions that may differ from the Minangkabau language spoken by the Chinese ethnic population; (2) Researchers could record the speech of Chinese persons who speak Minangkabau directly. This might be useful for identifying and analyzing intonations, accents, and verbal phrases specific to this ethnic group. Thus, interviews were a critical technique for gathering data on the Minangkabau language spoken by ethnic Chinese. They might provide in-depth insight into the language,

particularly in phonology and context, and in understanding how this language functions in the community. Additionally, recorders and writing devices (notebooks, pens, and laptop computers) were employed in the data collection procedure.

After defining the tools to be utilized, data was obtained in this study through (1) Observing the participants and conducting interviews with informants using the Swadesh List. Informants were requested to enunciate the Swadesh list of words. "Baa Ibuk mangecekkkan kato gapuak biasonyo?" asked the researcher. "How do you usually say fat?" Aside from that, the author inquired of the informants about additional words not included in the Swadesh list, such as "baa Apak mamanggia anak padusi, Pak?" "How do you call your daughter?"; (2) Taking notes and record the speech. All informants' utterances were recorded using a recording device and kept in a notebook; (3) Performing a phonetic transcription. By using a laptop, the researchers created phonetic transcriptions of spoken Minangkabau words. The following steps were used to analyze the data in this study: (1) Create a list; (2) Identify the data: The researcher generated a list of all the Minangkabau words spoken by ethnic Chinese to identify the phoneme variation in pronunciation; (3) Data classification: The words were categorized based on variations in segmental phonemes. Vowels, diphthongs, and consonants are used to classify segmental alterations; (4) Explain and analyze the data: After that, the data were explained and analyzed to determine which phonemes change the most and what kind of sound changes occur; (5) Draw a conclusion: The phonemes identified in Minangkabau language spoken by ethnic Chinese in Padang, the sorts of sound alterations, and the sound change rules used by them were discussed in conclusion.

RESULT AND DISCUSSION

Based on the data analysis results, several key points can be expressed about changes in the Minangkabau language by ethnic Chinese in Padang. In the Minangkabau language spoken by Chinese people in Padang, there are two sound changes: deletion and epenthesis. These sound changes are based on Katamba's 1992 theory (Zuldi & Himmawati, 2017). He categorizes six forms of sound changes: assimilation, dissimilation, deletion, epenthesis, metathesis, and vowel reduction or weakening). However, the author only discovered two kinds of modifications. See the following table for further information:

Table 1. Types of Sound Changes Made by Padang's Ethnic Chinese in the Minangkabau Language

The Types of Minangkabau Language Sounds		Standard Minangkabau	Minangkabau Language Uttered by Ethnic Chinese
Diphthong Omission	/ua/	/u/	Kumua gapuak marapuang untuak tanduak kuduak bunuah
			Kumu gapuk marapung untuk tanduk kuduk bunuh
	/ua/	/o/	Jatuah catuak
			Jatoh Catok
	/ui/	/u/	Tutuik takuik rambuik lutuik muluik iduik
			Tutuk takuk rambuk lutuk muluk iduk
Diphthong Omission	/ia/	/e/	Baliak
			Balek
Diphthong Omission	/ai/	/e/	Gulai sungai
			Gule Sunge
Vocal Omission	/a/	/e/	Gadang danga jaleh cameh sampik talingo
			Gedang sepik jeleh cemeh sepik telinga
	/o/	/a/	Karano duto bilo
			Karna duta bila

	tibo talingo	tiba telinga
Vocal Omission /u/ /o/	Tungkek urang utak	Tongkek orang otak
Epenthesis	Elo iduik apak iruik	Hela h _i duik b _a pak h _i ruik

There are several rules of sound modification in the deletion or epenthesis of the Minangkabau language pronounced by ethnic Chinese in Padang listed in Table 2:

Table 2. The Rules of Padang's Ethnic Chinese Modified Minangkabau Sounds

Sound Changes Rules
Diphthong Omission /ua/ > /u/
Diphthong Omission /ua/ > /o/
Diphthong Omission /ui/ > /u/
Diphthong Omission /ia/ > /e/
Diphthong Omission /ai/ > /e/
Vocal Omission /a/ > /e/
Vocal Omission /o/ > /a/
Vocal Omission /u/ > /o/
A word's meaning is not altered by the addition or insertion of letter sounds at the beginning of the term.

According to the findings of this study, the number of vowels in the standard Minangkabau language is 5, namely /a/, /i/, /e/, and //. However, the vowels in the Minangkabau language spoken by Chinese people are 10, and each of the five vowels in the standard Minangkabau language has allophones. In standard Minangkabau, the vowel /a/ has two allophones: /a/ and //. There are two allophones for the vowel /i/: /i/ and /i:/. There are two allophones for the vowel //: // and /:/. In addition, the vowel /o/ has two allophones: /o/ and //. Furthermore, the phonemes /p/, /b/, /t/, /d/, /k/, /g/, //, /s/, /h/, /c/, /j/, /M N/, //, /l/, /r/, and /y/ are found in the Minangkabau language and are pronounced by ethnic Chinese. The phonemes /w/ and /z/, common in standard Minangkabau, are nearly non-existent in Padang Minangkabau. The diphthongs of the Minangkabau language used by ethnic Chinese in Padang are smaller than those in standard Minangkabau, which only has five diphthongs: /ia/, /ai/, /a/, and /a/.

In addition to locating phonemes, the author examines the sound alterations in the Minangkabau language, which ethnic Chinese speak in Padang. Only two of the six sound alterations outlined by Katamba (1992) were discovered, namely deletion and epenthesis. Deletion nearly always happens in diphthongs, such as the diphthong /ua/ in tanduak [tanda] becoming the vowel /u/ in horn [tand]. The diphthong /ua/ becomes the vowel /o/, as in jatuhah [jatuah] becoming jatoh [jatoh]. The diphthong /ui/ becomes the vowel /u/, as in rambuik [rambui] to rambuk [ramb]. As in the words baliak [balia] to balek [bal], the diphthong /ia/ transforms into the vowel /e/. As in river [river] to sunge [su], the diphthong /ai/ transforms into the vowel /e/. Vowel deletion is also common in Minangkabau, the language spoken by Chinese in Padang. The vowel /a/ shifts to /e/, as in gadang [gada], which becomes gedang [gda]. The vowel /o/ changes to /a/ as in tibo [tibo] to arrive [arrive], and the vowel /u/ changes to the vowel /o/ as in urang [urang] to orang [people].

The author discovered that deletion is the most prevalent sound alteration based on the data above. In short, sound alterations occur more frequently in the middle and terminal positions and are preceded by consonants or vowels. Epenthesis is also used by Chinese people in Padang when speaking Minangkabau. In Minangkabau, for example, the word elo [elo] becomes hela [hela]. At the beginning of the word, there is an inserted consonant /h/. The consonant /h/ is also added to the word iduik [idi], resulting in hiduik [hidi]. In standard Minangkabau language, the consonant /b/ is also placed in the first position, like ad in the word apak [apa], to form the word ayah [bapa]. Therefore, the consonant insertion process includes insertion before the vowel at the start of the word. These findings are a part of Spoken Language identification in local languages (Safitri et al., 2016), particularly Minangkabaunese. The Minangkabau cultural identity through public engagement (Franzia et al., 2015) occurs in the Chinese ethnicity in Padang. However, these sound changes make their cultural identity in the Minangkabaunese language more distinctive than Chinese. Non-arbitrary

mapping between sound and word and its meaning, so-called sound symbolism (Barany et al., 2023), is found in this study, indicating the symbolism of Chinese culture and language interference. The minimal pairs (Creel & Frye, 2024) are a possible reason for these linguistic phenomena. The Chinese naturally avoids the sound similarity or minimal pairs in the Minangkabau language. Unreleased final stops produced by bilinguals were prone to substitution; languages in contact converge on abstract phonological units (Weng & Lee-Kim, 2023), which also became the reason for this sound modification since there is an interaction between the Chinese and Minangkabau languages.

The mismatch negativity sensitive to native phonemic sound contrast (Højlund et al., 2022) is the initial view when the native Minangkabau listen to the sound changes produced by the Chinese in Padang. However, these sound mismatches become natural over time and develop a language identity for the Chinese in Padang. Socio-economic integration (Foged & van der Werf, 2023) is also the reason and the factor for this sound change. The Chinese ethnic in Padang tries to integrate by using language integration to produce this sound modification. Language learning difficulties (Virtala et al., 2023) are also the underlying factor of these sound alterations since the Chinese are not Minangkabau native speakers. This means that complexity avoidance is the primary influence cognitive bias has on phonological systems in human languages (Beguš, 2022).

CONCLUSION

The researcher of this study examines changes in the sounds of the Minangkabau language spoken by Chinese people in Padang. This study examines and defines the types and principles of sound alterations that occur in the Minangkabau language as spoken by ethnic Chinese. These data suggest that numerous factors drive linguistic variance. Phonetic and phonological variables are among them. The author advises more research into phonology, particularly the segmental phonemes of the Minangkabau language, spoken in other parts of West Sumatra. Aside from that, the author advises future studies to examine microlinguistic features such as morphology, syntax, semantics, and so on in the Minangkabau language to determine the actual rules of the Minangkabau language and its variations. The research is then hoped to be utilized as a reference in linguistics. At the end of the phrase, this article might assist readers in learning more about variations in the Minangkabau language's sounds.

REFERENCES

- Barany, D. A., Lacey, S., Matthews, K. L., Nygaard, L. C., & Sathian, K. (2023). Neural basis of sound-symbolic pseudoword-shape correspondences. *Neuropsychologia*, 188, 108657.
- Beguš, G. (2022). Distinguishing cognitive from historical influences in phonology. *Language*, 98(1), 1–34.
- Bjorndahl, C. (2022). Voicing and frication at the phonetics-phonology interface: An acoustic study of Greek, Serbian, Russian, and English. *Journal of Phonetics*, 92, 101–136.
- Creel, S. C., & Frye, C. I. (2024). Minimal gains for minimal pairs: Difficulty in learning similar-sounding words continues into preschool. *Journal of Experimental Child Psychology*, 240, 105831.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson Education.
- Foged, M., & van der Werf, C. (2023). Access to language training and the local integration of refugees. *Labour Economics*, 84(May).
- Franzia, E., Piliang, Y. A., & Saidi, A. I. (2015). Manifestation of Minangkabau cultural identity through public engagement in virtual community. *Procedia-Social and Behavioral Sciences*, 184, 56–62.
- Garellek, M. (2022). Theoretical achievements of phonetics in the 21st century: Phonetics of voice quality. *Journal of Phonetics*, 94, 101155.
- Garg, S., Hamarneh, G., Jongman, A., Sereno, J. A., & Wang, Y. (2020). ADFAC: Automatic detection of facial articulatory features. *MethodsX*, 7, 101006.
- Gradoville, M. S., Brown, E. K., & File-Muriel, R. J. (2022). The phonetics of sociophonetics: Validating acoustic approaches to Spanish /s/. *Journal of Phonetics*, 91, 101125.
- Halim, C., & Sampurno, S. R. L. A. (2013). Masyarakat Tionghoa di Solo dan organisasi sosial: Dari terbentuknya CMKH sampai PMS. *Bandar Maulana*, 4(1), 59–92.
- Højlund, A., Horn, N. T., Sørensen, S. D., McGregor, W. B., & Wallentin, M. (2022). Foreign language learning and the mismatch negativity (MMN): A longitudinal ERP study. *Neuroimage: Reports*, 2(4).

- Hussain, Q., & Mielke, J. (2021). An acoustic and articulatory study of rhotic and rhotic-nasal vowels of Kalasha. *Journal of Phonetics*, 87, 101028.
- Imamah, F. Z., & Himmawati, D. R. (2017). Phonological adaptation of English loanwords to Indonesian words in Jawa Pos newspaper. *Language Horizon*, 4(2), 100–108.
- Iskarous, K., & Pouplier, M. (2022). Advancements of phonetics in the 21st century: A critical appraisal of time and space in articulatory phonology. *Journal of Phonetics*, 95, 101195.
- Ji, Y., Wei, J., Zhang, J., Fang, Q., Lu, W., Honda, K., & Lu, X. (2017). Speech behavior analysis by articulatory observations. *Procedia Computer Science*, 111, 463–470.
- Jufrizal. (2012). *Tatabahasa bahasa Minangkabau: Deskripsi dan telaah tipologi linguistik*. UNP Press.
- Lorenc, A., Żygis, M., Mik, Ł., Pape, D., & Sósuthy, M. (2023). Articulatory and acoustic variation in Polish palatalised retroflexes compared with plain ones. *Journal of Phonetics*, 96, 101181.
- Makmur, R., Kuswarno, E., Novianti, E., & Sjafirah, N. A. (2018). Bahasa Minang pondok dalam komunikasi antarbudaya masyarakat Tionghoa Kota Padang. *Jurnal Kajian Komunikasi*, 6(2), 133–146.
- Mossadeq, N. M., Khairuddin, K. A. M., & Zakaria, M. N. (2022). Cross-cultural adaptation of the consensus auditory-perceptual evaluation of voice (CAPE-V) into Malay: A validity study. *Journal of Voice*.
- Nishikawa, K., Akihiro, K., Hirakawa, R., Kawano, H., & Nakatoh, Y. (2022). Machine learning model for discrimination of mild dementia patients using acoustic features. *Cognitive Robotics*, 2, 21–29.
- Pucher, M., Klingler, N., Luttenberger, J., & Spreafico, L. (2020). Accuracy, recording interference, and articulatory quality of headsets for ultrasound recordings. *Speech Communication*, 123, 83–97.
- Safitri, N. E., Zahra, A., & Adriani, M. (2016). Spoken language identification with phonotactics methods on Minangkabau, Sundanese, and Javanese languages. *Procedia Computer Science*, 81, 182–187.
- Siregar, E. D. (2022). Perubahan bunyi Proto Austronesia (PAN) pada bahasa Karo, bahasa Batak, bahasa Pakpak, bahasa Simalungun, bahasa Mandailing dan bahasa Angkola: Kajian linguistik historis komparatif dan fonologi. *Sustainability (Switzerland)*, 4(1), 1–9.
- Smith, R., & Rathcke, T. (2020). Dialectal phonology constrains the phonetics of prominence. *Journal of Phonetics*, 78, 100934.
- Sugiyono. (2014). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Tecoulesco, L., Skoe, E., & Naigles, L. R. (2020). Phonetic discrimination mediates the relationship between auditory brainstem response stability and syntactic performance. *Brain and Language*, 208(February), 104810.
- Virtala, P., Kujala, T., Partanen, E., Hämäläinen, J. A., & Winkler, I. (2023). Neural phoneme discrimination in variable speech in newborns – Associations with dyslexia risk and later language skills. *Brain and Cognition*, 168(March 2022).
- Weng, W. C., & Lee-Kim, S. I. (2023). Loss of unreleased final stops among Mandarin-Min bilinguals: Structural convergence of languages in contact. *Journal of Phonetics*, 101, 101279.
- Wieling, M., Margaretha, E., & Nerbonne, J. (2012). Inducing a measure of phonetic similarity from pronunciation variation. *Journal of Phonetics*, 40(2), 307–314.