

## **An acoustic analysis of English vowels produced by Nigerian and Malaysian ESL speakers**

### **ABSTRACT**

The ever-increasing spread of English as a major international language has facilitated the emergence of distinct English varieties. These new varieties of English are now being adopted for international and intercultural communication. However, one of the consequences of having different varieties is the possible lack of mutual intelligibility among them. This study aimed to compare and contrast the English vowels produced by Nigerian and Malaysian ESL speakers to explore the distribution of the vowels produced in the vowel space and its effect on the intelligibility of the vowels in speech perception. The study is motivated by the lack of current research comparing similarities and differences of these nonnative English varieties, specifically Nigerian and Malaysian accented English. The participants in this study were 20 Nigerian ESL speakers and 20 Malaysian ESL speakers. The participants were asked to produce ten sentences containing the target vowels and these vowels were analyzed acoustically by extracting the F1 and F2 formant frequency values using PRAAT. The vowel charts were plotted for each language to show the similarities and differences between these two accented varieties of English. The results revealed that both groups of speakers categorized the ten English vowels under investigation differently in their vowel space. The Nigerian group produced /ɪ-i:/, /e-æ/, /ɔ-ɔ:/ and /ʊ-u:/ with sufficient phonetic distance while the vowel pairs with sufficient phonetic distance for the Malaysian group were /e-æ/, /ɜ:-ʌ/, /ʌ-æ/ and /ɔ-ɔ:/. The vowel pairs involving central vowels, /ɜ:-ʌ/, /ɜ:-æ/ and /æ-ʌ/, were not produced with sufficient phonetic distance for Nigerians while it was the pairs of high vowels, /ɪ-i:/ and /u-u:/, for Malaysians. The results suggest that Nigerian and Malaysian speakers may encounter difficulty understanding each other if they are unable to distinguish the vowels that are produced without sufficient phonetic distance. Nigerian and Malaysian ESL speakers may be misunderstood when they use words with central vowels and high vowels, respectively.

**Keyword:** Acoustic analysis; English vowels; Speech intelligibility; Nigerian accented English; Malaysian accented English