



## The Comparison of Pitch Between Ethiopian and Somalian in English Sentences

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**Abstract.** *This study examines pitch variations in English sentences spoken by two non-native children from Ethiopia and Somalia, using. The research focuses on declarative, imperative, and interrogative sentence types, analyzing pitch frequency across these sentence forms. The participants were a 5-year-old Ethiopian boy and a 9-year-old Somalian boy, were recorded, and their pitch data were analyzed for beginning, highest, lowest, and final frequencies. The results indicate that the Somalian boy exhibited greater pitch variation, particularly in declarative sentences, while the Ethiopian boy demonstrated more consistency. In imperative sentences, the Ethiopian boy showed slightly wider variation, while in interrogative sentences, the Somalian boy ended with a higher pitch. The differences in pitch usage suggest influences from age, language background, and individual speaking habits. This research contributes to understanding pitch use in young multilingual English learners and their linguistic development.*

**Keywords:** *English Sentences, Ethiopian and Somalian Children, Pitch*

**Abstrak.** Penelitian ini mengkaji variasi nada dalam kalimat bahasa Inggris yang diucapkan oleh dua anak non-pribumi dari Ethiopia dan Somalia, dengan menggunakan. Penelitian ini berfokus pada jenis kalimat deklaratif, imperatif, dan interogatif, menganalisis frekuensi nada di seluruh bentuk kalimat tersebut. Pesertanya adalah seorang anak laki-laki Ethiopia berusia 5 tahun dan seorang anak laki-laki Somalia berusia 9 tahun, dicatat, dan data nada mereka dianalisis untuk frekuensi awal, tertinggi, terendah, dan akhir. Hasilnya menunjukkan bahwa anak laki-laki Somalia menunjukkan variasi nada yang lebih besar, khususnya dalam kalimat deklaratif, sedangkan anak laki-laki Etiopia menunjukkan lebih banyak konsistensi. Dalam kalimat imperatif, anak laki-laki Etiopia menunjukkan variasi yang sedikit lebih luas, sedangkan dalam kalimat interogatif, anak laki-laki Somalia mengakhirinya dengan nada yang lebih tinggi. Perbedaan penggunaan nada menunjukkan pengaruh usia, latar belakang bahasa, dan kebiasaan berbicara individu. Penelitian ini berkontribusi untuk memahami penggunaan nada pada pelajar muda multibahasa Inggris dan perkembangan linguistik mereka.

**Kata kunci:** Kalimat Bahasa Inggris, Anak Ethiopia dan Somalia, Pitch

### 1. INTRODUCTION

Humans communicate using a system of sounds and meanings called language. Human speech organs produce the sounds that create language. There are two types of language sounds: segmental and suprasegmental. Whereas suprasegmental elements are frequencies, intensities, and durations, segmental elements including vowels and consonants occur sequentially. Therefore, the sound sequence will be created by letting the flow of speech intersperse with pauses continuously, accompanied by sound intensity, frequency, and duration (Syarfina, 2009).

English as the lingua franca is used between humans whose first languages are different (Cenoz, 2019). Furthermore, English is the most widely used language in the world for international communication, so when we speak with someone whose first language is not the same as ours, we automatically use English. As a lingua franca,

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English is taught as a required subject in the majority of countries, especially in Indonesia. English is taught starts from elementary school to university. It is the first foreign language in Indonesia that is considered necessary in the 21st century (Opsahl, 2022).

Sentences are fundamental to communication because they are the main way facts are conveyed, messages are distributed, and correlations are built. Sentences are crucial components that influence how messages are received and conveyed (Trendsscience, n.d.). There are three types of English sentences namely, declarative, imperative, and interrogative (Hamawand, 2020). A declarative sentence is a sentence that is used to convey a statement so that its nature is news for the listener or reader. In written form, a declarative sentence ends with a period. In spoken form, it ends with a pitch drop. On the other hand, an imperative sentence is a sentence to give a command or instruction. Meanwhile, an interrogative sentence is a sentence marked with question words such as who, where, what, why, and when (Syarfina, 2009).

Furthermore, when speech is uttered, the vocal tract moves to produce sounds with certain patterns that are adjusted to linguistic elements. Speakers not only articulate sounds sequentially, but also control over sound characteristics such as intensity, tempo, rhythm, and pitch (Syarfina, 2009). When speaking English, it's critical to convey the sentences correctly because mispronounced sentences can lead to major misunderstandings in communication (Anjani, n.d.). To declare our opinion clearly to the listener, especially in a foreign language, one must prioritize comprehension over the pitch. Pitch is a part of acoustic phonetics. Acoustic phonetics examines sound waves as natural phenomena or physical occurrences that influence the interaction between listeners and speakers. It is a branch of standard phonetics that examines the quantity (duration), intensity (spectrum), and frequency (pitch) of speech sounds. When it comes to express voice intonation and differentiate sounds, pitch is crucial. Pitch measurements allow intonation patterns in speech to be analysed. It is crucial for comprehending the meaning of phrases and emotional expressions (Syarfina et al., 2024).

Growing up in multilingual circumstances, a large number of foreign students in Medan, Indonesia acquire local dialects, official languages, and occasionally foreign languages like English. One of the cases is Somalian and Ethiopian children who study in a national private school. They find it difficult to transfer skills between languages since these languages have different suprasegmental features. In order to enhance deeper linguistic competency, they must learn to modify the way they use frequency (pitch) when transferring between languages. To find out the sound characteristics of a sound source, a sound recording device such as a microphone is needed. The use of this recording device

is called passive sounding. The process of recording sound or processing sound signals, in addition to the recording device, also requires equipment in the form of software (Anjani, n.d.).

The lack of research on the pitch of spoken English between foreign children encourages the researchers to dive into it. Although (Anjani, n.d.) research on English diphthong focused on contrastive analysis between Indonesian and Indian students, it is the most pertinent to this argument in terms of both scope and methodology. However, as many components of this process are universal, the methods and techniques applied in the study can be modified to meet the needs of future studies pertaining to the pitch used by Ethiopian and Somalian children in spoken English. For children with language disorders, difficulties with suprasegmental elements such as tone, duration, intensity, especially in distinguishing or mastering the pitch of their native language. Understanding pitch is crucial, especially for children with language impairments, as they may struggle with suprasegmental elements like tone and rhythm, making early intervention essential for their language development. This highlights the importance of addressing both the universal and specific needs of children.

In this research, the researcher will analyse the variety of pitch occurred between Somalian and Ethiopian children in spoken English. English is their second languages. They speak English in school to communicate with their teachers and friends. The researchers decided the variety of pitch based on declarative, imperative, and interrogative in English sentences.

## **2. RESEARCH METHODS**

This study offers a new viewpoint on phonetics by avoiding old-style linguistic methods where researchers use auditory and visual perceptions to analyze physical sounds or phonetics. This study differs from the old-style phonetic investigations in Indonesia. This study uses trustworthy software to analyse the acoustic phonetics component namely, Praat.

In data collection, this study involved Ethiopian and Somalian children in Medan, North Sumatera. The total of speakers was 2 boy speakers. The speakers involved were children between 5 and 9 years old. They use the language in school to interact with their friends and teachers. The data was obtained by recording the speakers' voices in a soundproof room by using a tape recorder and a steady microphone with the distance of 30 cm from the mouth. The unit of measurement for pitches is Hertz (Hz).

Based on the steps outlined, this study applies the data analysis method. Data analysis method is a method that eliminates superfluous data so that conclusions can be made (Syarfina et al., 2024).

Data were analyzed by inserting the recording result from the tape recorder were converted to WAV file. The researchers inserted the WAV file and manipulate them to see the pitch.

## Data

The first data is the from Ethiopian boy.

Types of Sentences	Sentences	Beginning Frequency	Final Frequency	Highest Frequency	Lowest Frequency
Declarative Sentence	I want to open my book	253.2 Hz	321.2 Hz	351.5 Hz	227.8 Hz
Imperative Sentence	Open your book!	273.7 Hz	294.2 Hz	314.6 Hz	224.5 Hz
Interrogative Sentence	Can you open your book?	301 Hz	257.6 Hz	366.1 Hz	226.6 Hz

The second data is the from Somalian boy.

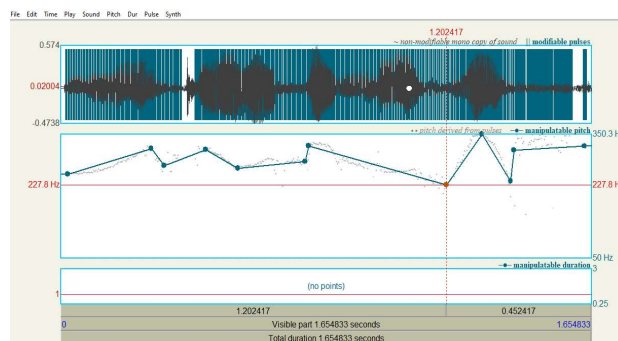
Types of Sentences	Sentences	Beginning Frequency	Final Frequency	Highest Frequency	Lowest Frequency
Declarative Sentence	I want to open my book	261.7 Hz	316.1 Hz	577.7 Hz	79.29 Hz
Imperative Sentence	Open your book!	286.8 Hz	271.5 Hz	303 Hz	234 Hz
Interrogative Sentence	Can you open your book?	286 Hz	309.3 Hz	369.7 Hz	205.9 Hz

## 3. RESULT AND DISCUSSION

The first participant is N. He is a 5-year-old Ethiopian boy.

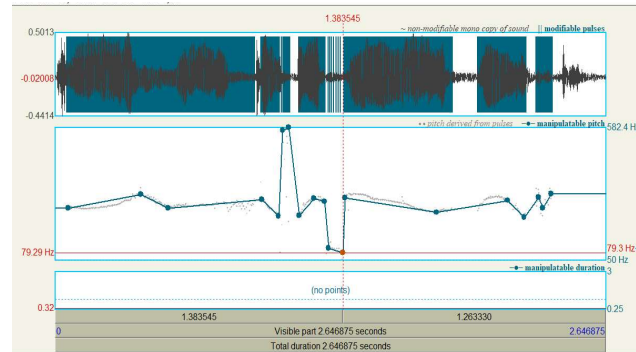
### 1). Declarative Sentence

I want to open my book.



**Fig 1** Analysis of Declarative Sentence of Ethiopian boy.

Fig 1 shows the result of declarative sentence analysis of Ethiopian boy. Declarative sentence functions to deliver statement. A speaker usually uses declarative sentence to express his thought to the listener. Declarative sentence can be used for delivering opinion, statement, and presentation (Kasriyati & Rosidah, 2020). When N said “I want to open my book”. The beginning pitch was 253.2 Hz and the final pitch was 321.2 Hz. The highest pitch was in 351.5 Hz when he said “ok” in book and the lowest pitch was 227.8 Hz when he said “bu” in book.



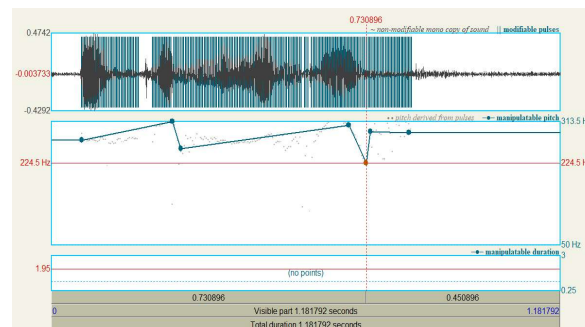
**Fig 2** Analysis of Declarative Sentence of Somalian boy.

Fig 2 shows the result of declarative sentence analysis of Somalian boy. When A said “I want to open my book”. The beginning pitch was 261.7 Hz and the last pitch was 316.1 Hz. The highest pitch was in 577.7 Hz when he said “tu:” and the lowest pitch was 79.29 Hz when he said “əup” in open.

## 2) Imperative Sentence

The first participant is N. He is a 5-year-old Ethiopian boy.

Open your book!

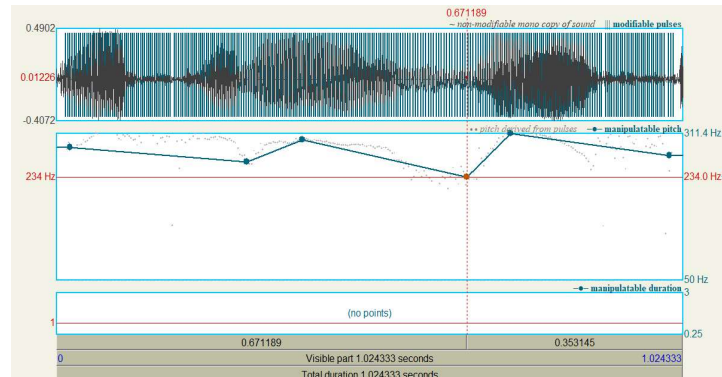


**Fig 3** Analysis of Imperative Sentence of Ethiopian boy.

Fig 3 shows the result of imperative sentence analysis of Ethiopian boy. Imperative sentence functions to give instructions. In English, it is commonly written without the subject. An imperative sentence is always in the form of the present tense (Farianti, 2022). When N said “Open your book!”. The beginning pitch was 273.7 Hz and

the final pitch was 294.2 Hz. The highest pitch was in 314.6 Hz when he said “n” in open and the lowest pitch was 224.5 Hz when he said “ok” in book.

The second participant is A. He is a 9-year-old Somalian boy.



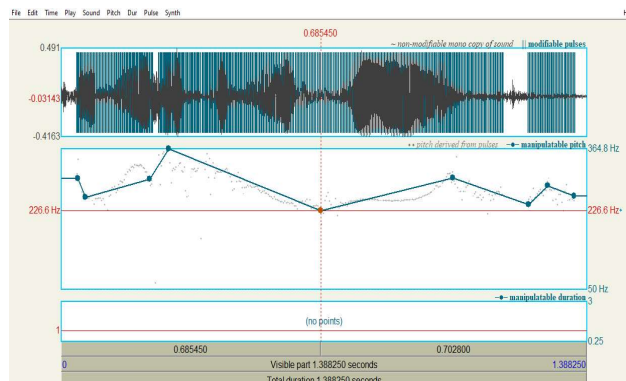
**Fig 4** Analysis of Imperative Sentence of Somalian boy.

Fig 4 shows the result of imperative sentence analysis of Somalian boy. When A said “Open your book!”. The beginning pitch was 286.8 Hz and the final pitch was 271.5 Hz. The highest pitch was in 303 Hz when he said “u” in book and the lowest pitch was 234.0 Hz when he said “b” in book.

### 3) Interrogative Sentence

Can you open your book?

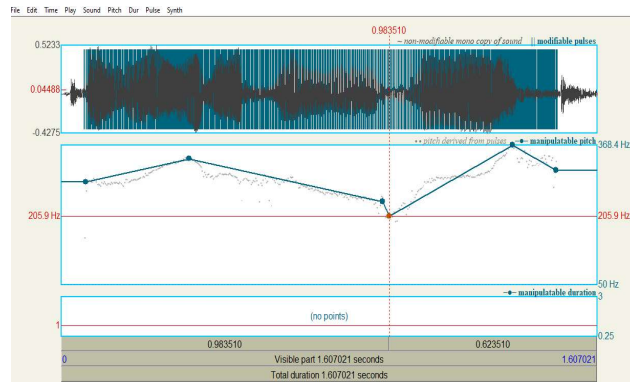
The first participant is N. He is a 5-year-old Ethiopian boy.



**Fig 5** Analysis of Interrogative Sentence of Ethiopian boy.

Fig 5 shows the result of interrogative sentence analysis of Ethiopian boy. Interrogative sentence functions to receive opinions on some issues. It urges the recipients to answer beneficially for some companies (Yu, 2022). When N said “Can you open your book?”. The beginning pitch was 301 Hz and the final pitch was 257.6 Hz. The highest pitch was in 366.1 Hz when he said “ju.” and the lowest pitch was 226.6 Hz when he said “bu” in book.

The second participant is A. He is a 9-year-old Somalian boy.



**Fig 6** Analysis of Interrogative Sentence of Somalian boy.

Fig 6 shows the result of imperative sentence analysis of Somalian boy. When A said “Can you open your book?”. The beginning pitch was 286 Hz and the final pitch was 309.3 Hz. The highest pitch was in 369.7 Hz when he said “ok” in book and the lowest pitch was 205.9 Hz when he said “bu” in book.

#### 4. CONCLUSION

The pitch analysis of the Ethiopian and Somalian children provides insights into their use of declarative, imperative, and interrogative sentences, highlighting both similarities and differences in pitch variation. In declarative sentences, both boys started their sentences with similar pitch ranges. The Ethiopian boy (N) began at 253.2 Hz, while the Somalian boy (A) started at 261.7 Hz. However, A displayed a much wider pitch range, with a significantly higher peak of 577.7 Hz compared to N’s 351.5 Hz. Additionally, A’s pitch dropped as low as 79.29 Hz, while N’s lowest pitch remained at 227.8 Hz. This indicates that A’s speech had greater pitch variation, possibly reflecting more emphasis or stress on certain syllables.

In their use of imperative sentences, N started with a lower pitch (273.7 Hz) compared to A (286.8 Hz), but their final pitches were quite similar. N showed slightly more variation in pitch, ranging from 314.6 Hz to 224.5 Hz, while A’s pitch ranged from 303 Hz to 234 Hz. This suggests that the Ethiopian boy may have used a wider range of tones when giving commands, potentially indicating different levels of emphasis or forcefulness in his speech.

Finally, in interrogative sentences, N started with a higher pitch of 301 Hz compared to A’s 286 Hz, but A ended with a higher final pitch of 309.3 Hz compared to N’s 257.6 Hz. Both boys reached similar high points during their utterances, although A’s lowest pitch (205.9 Hz) was lower than N’s (226.6 Hz). This difference in pitch variation

suggests that the boys may have approached asking questions with slightly different intonation patterns, with A using a wider range to convey inquiry or uncertainty.

Overall, the Somalian boy exhibited more extreme pitch variations, particularly in declarative sentences, while the Ethiopian boy showed more consistency in his speech patterns. These differences could be attributed to various factors such as age, language background, or individual speaking habits.

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