The prosody of sarcasm and sincerity across generations of Spanish speakers

Dependent variables:  
1. Speech rate (column H)

2. F0 Range (column K; F0= pitch)

3. F0 Mean (column L)

\*The bolded columns in the spreadsheet are those that are most relevant to the description here.

The study seeks to understand how the three dependent variables above are influenced by speaker attitude (sarcastic, sincere), language (Spanish or English), language dominance (Spanish or English), and family (participants either do not have a family member in the study, coded as 0, or they do have a family member in the study; the families are coded as 1-7).

Each participant recorded 15 base sentences in 2 ways, once sarcastically and once sincerely, for a total of 30 sentences. The exact same task was done in both Spanish and English by those participants who know enough English to do so. As such, most participants produced 60 total sentences (30 in Spanish and 30 in English), while some Spanish dominant ones only produced the 30 in Spanish.

Need: Generalized linear mixed effects model (or something similar- completely open to expert recommendation) to examine the effects of the following independent variables on each of the three dependent variables above:

1. Attitude (sarcastic vs. sincere), where Language (of task) = Spanish (column M) and BLP = Sp (column O; Spanish dominant speakers speaking Spanish)

2. Attitude (sarcastic vs. sincere), where Language = English (column M) and BLP = Eng (column O; English dominant speakers speaking English)

3. Attitude (sarcastic vs. sincere), where Language = Spanish (column M) and BLP = Eng (English dominant speakers producing Spanish)

4. For all English dominant speakers (BLP = Eng), attitude = sarcastic \* language = English vs. attitude = sarcastic \* language = Spanish; attitude = sincere \* language = English vs. attitude = sincere \* language = Spanish (i.e., are sarcasm and sincerity each produced the same in each language)

5. Within groups of speakers with same family number (column N- so this excludes anyone coded as 0 in column N), where language = Spanish (since not all members produced English data); attitude = sarcastic \* BLP = Sp vs. attitude = sarcastic \* BLP = Eng, as well as attitude = sincere \* BLP = Sp vs. attitude = sincere \* BLP = Eng

(i.e., do members in the same family but with different language dominance produce both attitudes the same in Spanish)

1-5 above do not consider the CONTEXT column, which matches identical sentences produced sarcastically or sincerely by each speaker

6. Run 1-5 above again, but this time consider context (column C) \* attitude (sarcastic/sincere) rather than just attitude