Asia Pacific Journal of Social Innovation

(formerly The Mindanao Forum)

ISSN (PRINT) Journal homepage https://journals.msuiit.edu.ph/tmf

Choices and Voices: The Influence of Voice Pitch on the Voting Preference of Barangay Tubod, Iligan City

Allen Dave M. Capa, Charish Ann G. Lariosa, Renalyne A. Pacaldo, John Gieveson E. Iglupas, Hilton J. Aguja, Elaine M. Baulete

To cite this article: Allen Dave M. Capa, Charish Ann G. Lariosa, Renalyne A. Pacaldo, John Gieveson E. Iglupas, Hilton J. Aguja, Elaine M. Baulete Choices and Voices: The Influence of Voice Pitch on the Voting Preference of Barangay Tubod, Iligan City

To link to this article: https://journals.msuiit.edu.ph/tmf

Published online: 06 June 2024

APJSI
ASIA PACIFIC JOURNAL OF SOCIAL INNOVATION
(formerly The Mindanao Forum)
2024, Vol. 36, No. 1
https://journals.msuiit.edu.ph/tmf

Choices and Voices: The Influence of Voice Pitch on the Voting Preference of Barangay Tubod, Iligan City

Allen Dave M. Capa, Charish Ann G. Lariosa, Renalyne A. Pacaldo, John Gieveson E. Iglupas, Hilton J. Aguja, Elaine M. Baulete

ABSTRACT
This study explores the role of voice pitch as a heuristic influencing voting preferences and leadership-related impressions. Drawing from the case of 200 respondents from Barangay Tubod, Iligan City, this study determines the influence of voice pitch on voting preference and leadership-related impressions. A face-to-face survey was conducted to identify their preferred male and female voice pitch in a hypothetical Philippine presidential election as well as the male and female voice pitch that respondents tend to associate with the leadership attributes of dominance, intelligence, competence, strength, and trustworthiness. An individual face-to-face interview was further conducted to identify the reasons and impressions of the voter respondents' preferred female and male voice pitches to further reinforce the quantitative findings. Results showed that the low-pitched female and male presidential candidates in a hypothetical election are significantly preferred by voter respondents. Interestingly, young adult respondents did not have any significant preference for any voice pitch of the female candidate which differs from the prior works of literature on voting preference associated with voice pitch.

KEYWORDS
Voice pitch, Voting Preference, Leadership-related Impressions, Tubod, Iligan City

CONTACT Allen Dave M. Capa ✉ allendave.capa@g.msuiit.edu.ph

INTRODUCTION

Elections have always been an important mechanism for selecting leaders, thus, legitimizing the exercise of authority in many democratic countries across the world (Klofstad et al., 2012; Wojtasik, 2013). Political decisions such as the selection of leaders remain crucial in democracy and are known to be influenced and motivated by many different factors. While the selection of leaders should ideally be well thought of and consistently deliberated by voters, Klofstad et al. (2012) argued that voters are not all the time politically engaged and can even make crucial decisions just based on their formed impressionistic judgments, for instance, a candidate's physical feature such as the physical attractiveness (Surawski & Ossoff, 2006) or even the face shape (Little et al., 2005). Indeed, many relevant factors come into play when making political decisions but Klofstad et al. (2012) also contended that a human feature such as voice pitch can also provide for a mental shortcut—a heuristic for voter decisions when information is not made available. This is oftentimes overlooked and given less importance but can also be a relevant factor that to some extent can influence voting preference without the voters' consciousness.

Voice pitch is a feature of the human voice that is commonly referred to as the "highness" or the "lowness" of the voice primarily caused by the vibration of the vocal folds (Klofstad et al., 2016). This is associated with fundamental frequency (f0) and is typically measured using the standard unit of frequency called Hertz (Hz) which is equivalent to the number of cycles per second (Titze, 1994, as cited in O'Connor & Barclay, 2017; Klofstad et al., 2016). Fundamental frequency (f0) refers to the number or rate of vocal fold vibrations that eventually produce sound (Titze, 1994, as cited in O'Connor & Barclay, 2017).

Physiological difference between sexes also produces the evident difference of male and female voice pitches. Adult female vocal folds are much shorter (13-17 mm) while adult male vocal folds are much longer (15-23 mm) and thicker due to pubertal testosterone (Kob et al., 2009; O'Connor & Barclay, 2017; Hunter et al., 2011). This leads to shorter vocal folds vibrating with much higher frequencies producing higher-pitched female voices while the much longer and thicker vocal folds vibrate much more slowly producing lower-pitched male voices (O'Connor & Barclay, 2017; Hunter et al., 2011; Klofstad et al., 2016). Klofstad et al. (2016) highlight that a typical female pitch ranges from 165 to 255 Hertz while a male pitch ranges from 85 to 180 Hertz. This is much like the strings of a guitar where the slower vibrations of thicker strings produce low-pitched guitar sounds while the faster vibrations of thinner strings produce the high-pitched guitar sounds (Klofstad et al., 2016).

Nonverbal cues such as voice pitch are known to influence impressions among listeners. This is similar within the animal kingdom where vocal signals typically relay information of size, fitness, strength, fighting prowess, and dominance (Klofstad et al., 2012; Klofstad, 2016). The same can be said among humans as the exploration of the influence of voice pitch in many aspects continues to proliferate, especially within the field of communication and political psychology. Studies in the field of psychology have explored how voice pitch is associated with different attributes. For instance, extant literature posits that divergent vocal pitches may serve as indicators of differential social

power dynamics (Aung & Puts, 2019), that lower-pitched voices are perceived as more dominant (Aung & Puts, 2019; Puts et al., 2006), that lower-pitched males and higher pitched females are perceived as more attractive and likable (O'Connor & Barclay, 2017; Krahe & Papakonstantinou, 2019), and that lower pitched male and female are less trustworthy in both economic and mate poaching contexts (O'Connor & Barclay, 2017).

Scholarly investigations also delve into the nexus between voice pitch and gender stereotypes. For example, research conducted by Krahé et al. (2021) and Oleszkiewicz et al. (2017) posits that women with higher-pitched voices are perceived as more feminine and approachable, albeit less competent. Conversely, studies by O'Connor and Barclay (2018) suggest that men with lower-pitched voices are deemed more trustworthy, particularly when they communicate prosocial messages as opposed to antisocial ones. It is within this well-established literature on the influence of voice pitch that Klofstad et al. (2012) ground their argument that voice pitch could also perhaps influence how leaders are perceived and selected by the electorate. Various studies have shown that voters generally preferred to vote for the low-pitched male and female candidates and that the low-pitched voices were also associated more with positive leadership attributes such as being trustworthy, honest, intelligent, competent, dominant, attractive, strong, or better leaders in general (Klofstad 2015; Tigue et al., 2011; Çinar, 2020).

In the study of Klofstad et al. (2012) for instance, both men and women participants more frequently chose to vote for lower-pitched female and male hypothetical candidates. Low-pitched female voices were perceived to be more competent, trustworthy, and stronger while amongst male participants, low-pitched male voices were perceived as stronger and more competent (Klofstad et al., 2012). Klofstad et al., (2012) further emphasized that women respondents were not influenced by male voice pitches in their perceptions of strength, competence, and trustworthiness which means then that formed impressions of the varying voice pitches may vary among different people and contexts. Literature has also shown that this preference for low-pitched candidates was also observed in real election outcomes (Banai et al., 2017; Klofstad, 2015; Banai, 2018).

The influence of human features, most especially that of the voice pitch of candidates on voting preference is not most of the time explored in mainstream voting behavior literature. Indeed, this gap was also emphasized by Klofstad (2016) in one of his studies on voice pitch and elections. Scholarships have indeed explored the influence of physical attractiveness (Surawski & Ossoff, 2006), face shape (Little et al., 2005), and even physical stature (Murray & Schmitz, 2011) on voting preference but as observed, in terms of voice pitch, only limited studies have explored this aspect and this is most especially scarce in the context of the Philippines. It is evident in the literature that the influence of voice pitch on voting preference and leadership-related impressions is usually explored within the context of Western countries and remains entirely scarce in the Philippines. Moreover, a limitation to most of the studies on voice pitch influence on voting preference and leadership-related impressions is that most of these are conducted within university settings thus respondents are usually young adults and undergraduate students.

Given the limitations in existing literature, this study therefore seeks to explore voice pitch influence on voting preference and leadership-related

impressions in the context of the Philippines, particularly in Barangay Tubod—a barangay with the highest population of voters in Iligan City. This focus allows for the inclusion of a broader and more diverse sample of respondents within Barangay Tubod. As Philippine politics increasingly involves auditory engagement with politicians' voices due to technological advancements and new normal policies, such as voters relying on Facebook Live or YouTube to listen to candidate debates and platform presentations. Consequently, this study offers valuable insights for current and aspiring politicians, emphasizing the strategic use of voice pitch in political communication. This provides us with another perspective that we could look at when we try to understand Philippine national election outcomes. Exploring this in the context of the Philippines, starting in Iligan City, provides a starting point for future research related to this area.

This study examined the influence of voice pitch on the voting preference and leadership-related impressions of the registered voters in Barangay Tubod, Iligan City. Specifically, this paper aims to answer the following: 1) What voice pitch of the female and male hypothetical candidates do voter respondents prefer to vote in a hypothetical Philippine Presidential election? 2) What voice pitch of the female and male hypothetical candidates do voter respondents tend to associate with the following leadership attributes? 3) What are the reasons for their preference of the chosen male and female voice pitch? 4) What is their impression of their chosen male and female voice pitch?

THEORETICAL FRAMEWORK

The influence of voice pitch on voting preference assumption introduced by Tigue, et al. (2011), Klofstad, et. al. (2012), and Klofstad (2015) is the theoretical foundation of the study. The assumptions from these studies established that voice pitch can influence preference on who to vote for as leaders and is associated with different leadership attributes. The assumption of Tigue, et. al. (2011), Klofstad, et al. (2012), and Klofstad (2015) indicates that voters tend to prefer leaders with low-pitched voices. In the study of Tigue, et al. (2011), female and male respondents chose to vote for the low-pitched male hypothetical candidates in a national election. Similarly, Klofstad, et al. (2012) show that female and male voter respondents are more likely to vote for low-pitched female and male hypothetical candidates. The study of Klofstad (2015) on the other hand, determined that low-pitched candidates won a larger share of votes. His findings suggest that female and male voters prefer to vote for low-pitched female and male candidates. Furthermore, older voters (40+ years old) prefer to vote for low-pitched candidates.

The voice being a communicative signal and information cue can also inform a person about the physiological features of the speaker and associate them with different leadership capabilities (Pisanki & Bryant, 2019). Voice pitch has also been associated with different leadership attributes. The study of Tigue, et al. (2011) presents that the leadership attributes of dominance, trustworthiness, intelligence, and better leadership attributes in general have been associated more with low-pitched male hypothetical candidates. On the contrary, the assumptions of Klofstad, et al. (2012) show varying results as it presents that low-pitched female hypothetical candidates are perceived as more

competent, stronger, and trustworthy by female and male voters. On the other hand, a low-pitched male voice is associated with strength and competence by male voters (Klofstad, et.al., 2012). However, female voters in this study do not base their impression of trustworthiness, competence, and strength on the voice pitch of a male candidate as these leadership attributes vary in different contexts (Klofstad, et. al., 2012). Hence, these assumptions show that voice pitch can be associated with leadership-related attributes and may vary accordingly in different contexts.

With these, this study proposed the research model in Figure 1.

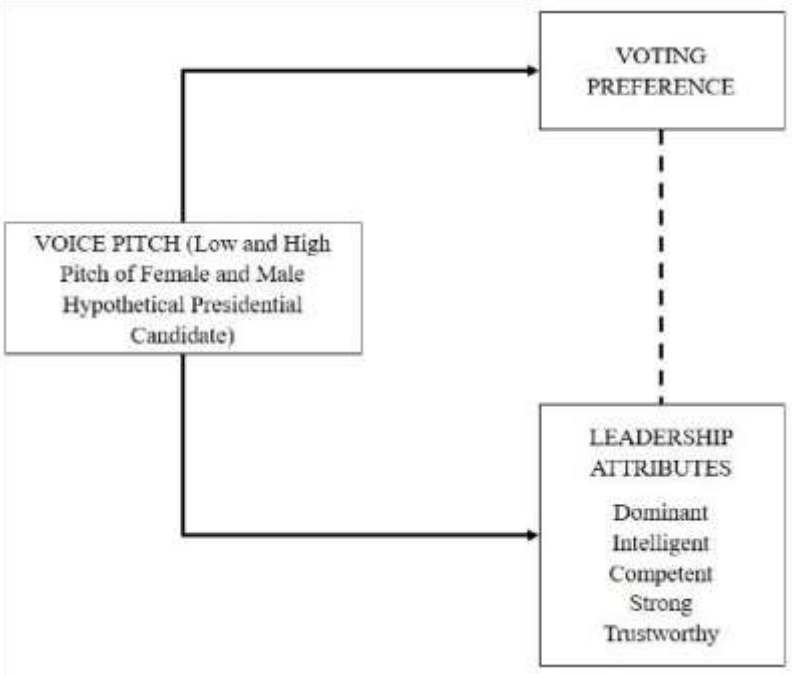

Figure 1. Conceptual framework of the study (Diagram developed by the authors)

METHODOLOGY

This study utilized both quantitative and qualitative research methods to determine the effects of voice pitch in voting preferences. The research is conducted within one barangay which is Barangay Tubod, Iligan City, as this barangay has the highest population (33,243) and the highest number of registered voters (17,322) in Iligan City. Purposive sampling is used in selecting 200 respondents who should be eligible to vote for the presidential election during the time of the data collection. The vocal stimuli utilized in this study were obtained from the recording of one man and a woman aged forty years and

above following the qualification for presidential candidates as outlined in Article VII Section 2 of the 1987 constitution. They were asked to be voice recorded uttering an election-relevant but neutral statement: *"Hangad ko na kayo ay bumoto ng mga karapat-dapat na pinuno na maghahatid ng mabuting pamamahala at tunay na pagbabago sa Pilipinas. Kaya naman mga kababayan, hinihikayat ko kayo na iboto ninyo ako sa paparating na eleksyon"* (I hope that you will vote for deserving leaders who will bring good governance and real change to the Philippines. Therefore, fellow countrymen, I encourage you to vote for me in the upcoming election.)

The recorded voices were inspected in Audacity (version 3.1.3) to reduce background noise and equalize the speed and volume of the recordings. Replicating the methods of related studies on voice pitch influence on voting behavior (Tigue et al., 2011; Klofstad, 2016; Anderson & Klofstad, 2012; Klofstad et al., 2012; Laustsen et al., 2015), the researchers utilized the phonetic software PRAAT and the PSOLA technique to manipulate the male and female voice into their low- and high-pitched versions. The original male voice pitch has an average of 123.7 Hz while the original female voice pitch has an average of 197.9 Hz. The researchers then altered the equivalent rectangular bandwidth (ERB) by ±0.5 which is equivalent to a ±20 Hz perceived shift of the voice pitch. The low- and high-pitched version of male and female voices was achieved by this manipulation of the ERB. The manipulated low-pitched male voice has an average of 103.4 Hz while the low-pitched female voice has an average pitch of 176.9 Hz. On the other hand, the manipulated high-pitched male voice has an average of 139.7 Hz while the high-pitched female voice has an average pitch of 223 Hz.

During the data gathering, each respondent of the study was first asked to listen to the manipulated low- and high-pitched versions of the female voice, labeled as Candidate A and Candidate B respectively, through the use of Apple iPad 8th Generation and listened through MediaCom MCI 525 Part Speaker. Following the methods of Klofstad et al. (2012) and Tigue et al. (2011) in their simulations, participants were first asked to choose between the low- and high-pitched female voice of who they would vote for as the president. The second part asked respondents who they thought sounded more dominant, intelligent, stronger, trustworthy, and competent. After the female voice, respondents were then instructed to listen to the manipulated low- and high-pitched versions of the male voice and likewise answered the same set of questions. With Klofstad et al. 's study (2012) highlighting the occurrence of voice pitch not influencing some leadership impressions, thus the possibility of voice pitch not influencing voting preference and impressions, respondents were also given a 'no preference' option in the questionnaire indicating that voice pitch does not matter in the voting of a leader and their impressions of dominance, intelligence, strength, trustworthiness, and competence. Respondents were asked to put a checkmark on their choices in the questionnaire. One of the researchers guided the respondents in answering the questionnaire by vocalizing the necessary directions, questions, and explanations for the respondents to fill up.

To further reinforce the quantitative findings, the researchers also conducted a short face-to-face semi-structured interview of the last 30 surveyed respondents. These respondents were first asked for the reasons for their preference (if there are any) for a specific male and female voice pitch when voting in the hypothetical presidential election. Respondents of the interview

who expressed no preference were also likewise asked for their reasons for preferring no one. In addition to this, respondents were also asked about their impressions of their preferred male and female voice pitch. A Chi-square goodness-of-fit test was further employed to determine if respondents' voice pitch preference or the lack thereof is statistically significant. A Chi-square test of independence was also employed to examine the relationship between gender and voice pitch preference as well as between age and voice pitch preference. The researchers utilized SPSS version 25 for the analysis of the data. Content analysis was used to analyze the interview responses specifically, their reasons for their preference of what male and female voice pitch to vote for as president and their impressions of that chosen male and female voice pitch. The audio-recorded interview responses were first transcribed and from the transcription, themes of their responses were identified and categorized.

Before the actual data collection, a pilot test of the survey questionnaire was conducted to evaluate the reliability and validity of the constructs, determined by Cronbach's alpha coefficient. Klofstad et al. 's (2012) pre-test showed that the pitch differences created by the PSOLA method in PRAAT were perceivable by the participants. The pilot test was conducted with 46 respondents and also indicated that the vocal stimuli used for this study were perceivable and the distinction between the low- and high-pitched versions of the voices was clear. A separate pilot test of the research questionnaire with 21 respondents was also conducted to identify the necessary improvements and adjustments to the questionnaire.

FINDINGS

Socio-demographics of the Respondents from Barangay Tubod, Iligan City

Table 1. Respondents of the Study

Variable	Tubod, Iligan City Residents	Registered Voters	Percentage
Gender			
Male	91	91	45.5%
Female	106	106	53.0%
Non-Binary	3	3	1.5%
Total	200	200	100%
Age			
Young Adult (18-30 years old)	56	56	28%
Middle Age (31-45 years old)	60	60	30%
Old Age (45+ years old)	84	84	42%
Total	200	200	100%

As shown in Table 1, a total of 200 respondents, all of whom are registered voters and residents of Tubod, Iligan City, participated in this study. The majority of the respondents identified themselves as female, comprising 53% or 106 out of the 200 respondents. While looking at the age of the respondents as shown in Table 1, a big portion of the respondents were old-aged adults (aged 45 and up) comprising 42% or a total of 84 out of the 200 respondents.

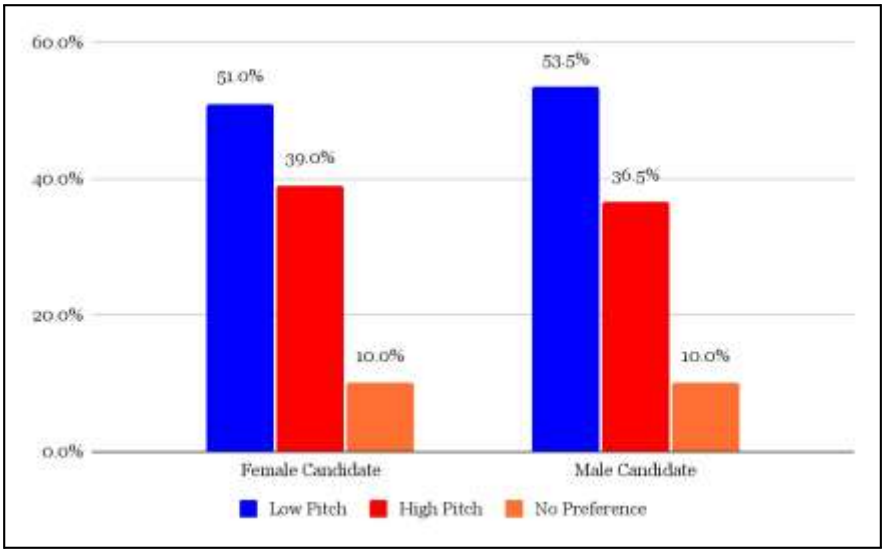

Figure 2. Respondents' Preferred Voice Pitch of the Female and Male Hypothetical Presidential Candidates

Results show that as visualized in Figure 2, respondents in general preferred to vote for both the low-pitched female and male candidate in a hypothetical Philippine presidential election. Chi-square goodness of fit results indicate that the low-pitched female candidate (X^2= 53.320, df= 2, p=.000 < 0.05) and the low-pitched male candidate (X^2= 57.670, df= 2, p=.000 < 0.05) were significantly preferred by respondents in general.

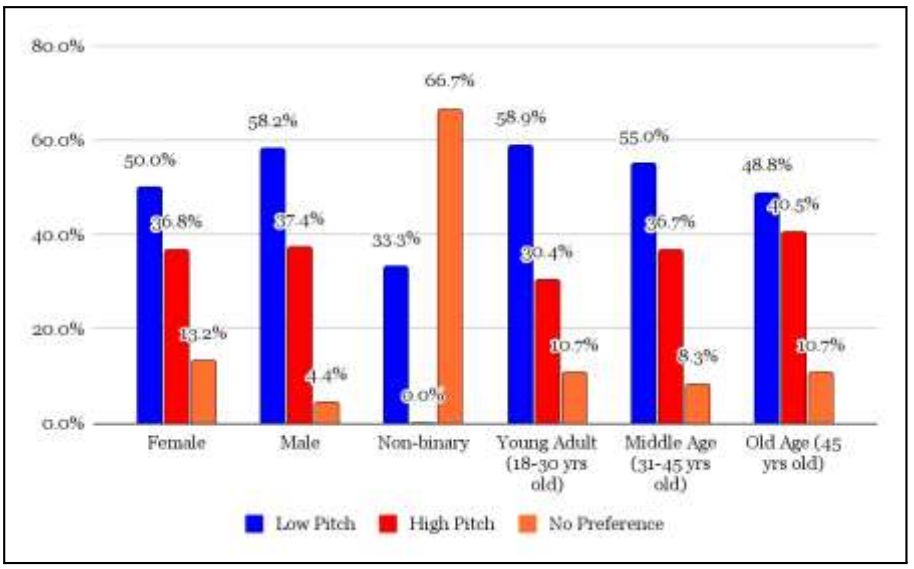

Figure 3. Respondents' Preferred Voice Pitch of the Male (Hypothetical) Presidential

1. Candidates Assessed by Gender and Age

Assessing the respondents' male candidate voice pitch preference by gender and age group of the respondents, Figure 3 shows that the preference for the low-pitched male candidate is consistent among both female and male respondents and this preference is also statistically significant with the low-pitched male candidate being significantly preferred by both male (X^2= 57.670, df= 2, p=.000 < 0.05) and female (X^2= 22.094, df= 2, p=.000 < 0.05) respondents.

The three non-binary (n=3) respondents on the other hand, expressed no voice pitch preference in the male hypothetical candidates as 2 out of the 3 non-binary respondents, or 66.7% chose the no preference option indicating that they chose none of the voices and that the voice pitch of candidates does not matter in most of the non-binary respondents' choice of who to vote for as president. As we were only able to garner three non-binary respondents which is an evident limitation of the study, employing a chi-square goodness-of-fit test may not be reliable as the chi-square goodness-of-fit necessitates at least 5 expected frequencies (Laerd Statistics, 2018).

Figure 3 also shows that this preference toward voting for the low-pitched male candidate is also consistent among all age groups with the low-pitched male candidate being significantly preferred by young adult (X^2= 19.750, df= 2, p=.000 < 0.05), middle-aged adult (X^2= 19.900, df= 2, p=.000 < 0.05), and old-aged adult (X^2= 20.214, df= 2, p=.000 < 0.05) respondents.

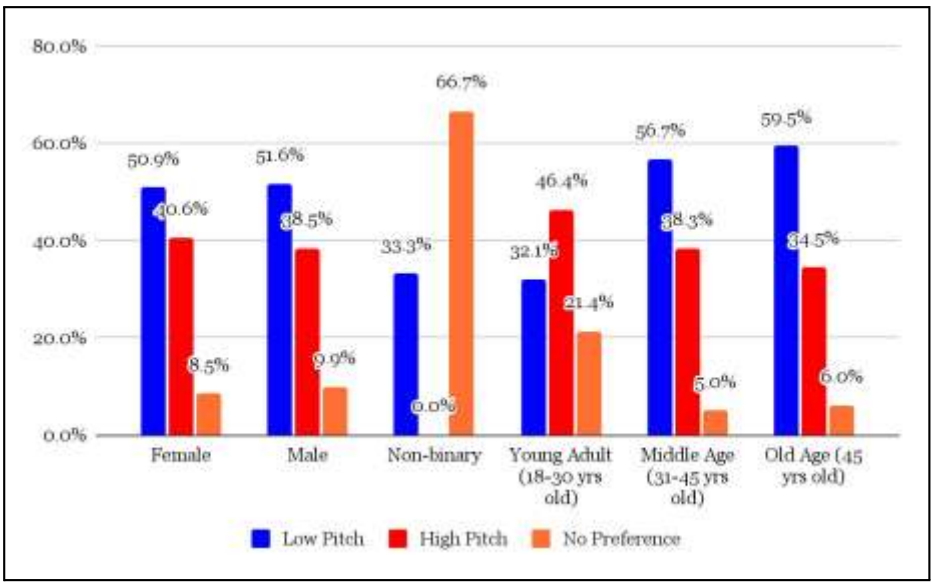

Figure 4. Respondents' Preferred Voice Pitch of the Female (Hypothetical) Presidential Candidates Assessed by Gender and Age

Assessing the respondents' female candidate voice pitch preference by gender and age groups of the respondents, figure 4 shows that the preference for the low-pitched female candidate was also consistent among both female and male respondents and this preference is also statistically significant with the low-pitched female candidate being significantly preferred by both male (X^2= 24.879, df= 2, p=.000 < 0.05) and female (X^2= 31.151, df= 2, p=.000 < 0.05) respondents. The three non-binary (n=3) respondents on the other hand also expressed no voice pitch preference for the female hypothetical presidential candidate. Likewise, as we were only able to garner three non-binary respondents, employing a chi-square goodness-of-fit test may not be reliable.

Assessing the respondents' female candidate voice pitch preference by age group, figure 4 also illustrates that this preference towards voting for the low-pitched female candidate is observed to be consistent among middle-aged and old-aged adult respondents with the low-pitched female candidate being significantly preferred by both middle-aged adult (X^2= 24.700, df= 2, p=.000 < 0.05) and old-aged adult (X^2= 36.214, df= 2, p=.000 < 0.05) respondents.

Respondents in general significantly preferred to vote for both the low-pitched female and male candidate in a hypothetical Philippine presidential election. This significant preference for the low-pitched male candidate was consistent among male and female respondents as well as among all age groups. This coincides with the results of Klofstad (2015), Tigue, et. al (2011), Klofstad, et. al (2012), and Çinar (2020) which all highlighted the tendency of voters to prefer to vote for the low-pitched male candidate.

In terms of the significant preference for the low-pitched female candidate, this is consistent among male and female respondents as well as among middle-aged and old-aged adult respondents. This also coincides with Klofstad, et. al (2012) and Çinar's (2020) results highlighting the tendency of

voters to also prefer the low-pitched female candidate and is also in line with Klofstad's (2015) results as he emphasized that the large national sample of US voter respondents of his study generally preferred the low-pitched male and female candidates and that this preference for the low-pitched female and male voices was observed to be much stronger among much older voters (those 40 years old and above voters).

A different result from that of the established literature is the case of the young adult respondents of this study. As is shown in Figure 4, most young adult respondents have preferred to vote for the high-pitched female candidate. The chi-square goodness-of-fit test as shown in Table 4 however indicates that there was no significant difference (X^2= 5.286, df= 2, p=.071 > 0.05) observed in their female candidate voice pitch preference which means that this preference towards the high-pitched female voice is not statistically significant. There was no significant difference observed among those who preferred to vote for the high-pitched or low-pitched female candidate and those who expressed no preference. Ultimately, the young adult respondents of this study do not have any significant preference to any voice pitch of the female candidate. This result is different from that of the studies of Klofstad et al. (2012) and Çinar (2020) as most of their undergraduate and young respondents actually preferred the low-pitched female candidate.

Table 5. Chi-square test of independence

	X2	df	p-value	Decision
Relationship between:				
Gender and voting preference (Male candidate)	15.551[a]	4	0.004	Significant
Age and voting preference (Male candidate)	1.860[a]	4	0 .761	Not Significant
Gender and voting preference (Female candidate)	11.311[a]	4	0.023	Significant
Age and voting preference (Female candidate)	16.900[a]	4	0.002	Significant

Utilizing the Chi-square test of independence, we also explored whether there is a significant association or relationship between gender and voting preference (influenced by voice pitch) as well as between age and voting preference (influenced by voice pitch). Results in Table 5 show that gender has a significant relationship with voting preference that has been influenced by the male voice pitches (X^2= 15.551a, df= 4, p= 0.004< 0.05) and female voice pitches (X^2= 11.311a, df= 4, p= 0.023< 0.05). Similarly, results show that voting preference in terms of the hypothetical female candidate (influenced by voice pitch) has a significant relationship with voter respondents' age (X^2= 16.900a, df= 4, p= 0.002< 0.05).

There is no significant relationship when it comes to the voting preference in terms of the hypothetical male candidate (influenced by voice pitch) and voter respondent's age (X^2= 1.860a, df= 4, p= 0.761> 0.05). With this, voter respondents' age and voting preference on hypothetical male candidates (influenced by voice pitch) are variables independent from each other. However, with the limitation of the chi-square test, extract any causal effect or the ability to measure the cause and effect of these variables on each other. With this in mind, future exploration of the relationship between voting preferences (influenced by female and male voice pitch) and voter respondents' gender and age with other statistical analysis tools will further amplify the results of this study.

Leadership Attributes and Respondents' Impressions of Manipulated Voice Pitches in Hypothetical Male and Female Candidates

In terms of the male voice pitch and leadership attributes, results in the study of Tigue, et. al (2011), Klofstad, et. al (2012), and Çinar (2020) highlight that positive leadership attributes such as dominance, intelligence, competence, strength, and trustworthiness are typically associated with the low-pitched male candidates. They then posited that this could also be the reason why low-pitched male candidates have higher electability among respondents and thus concluded that having lower-pitched voices among male candidates may be advantageous in the context of an election (Tigue, et. al, 2011; Klofstad, et. al., 2012; & Çinar, 2020).

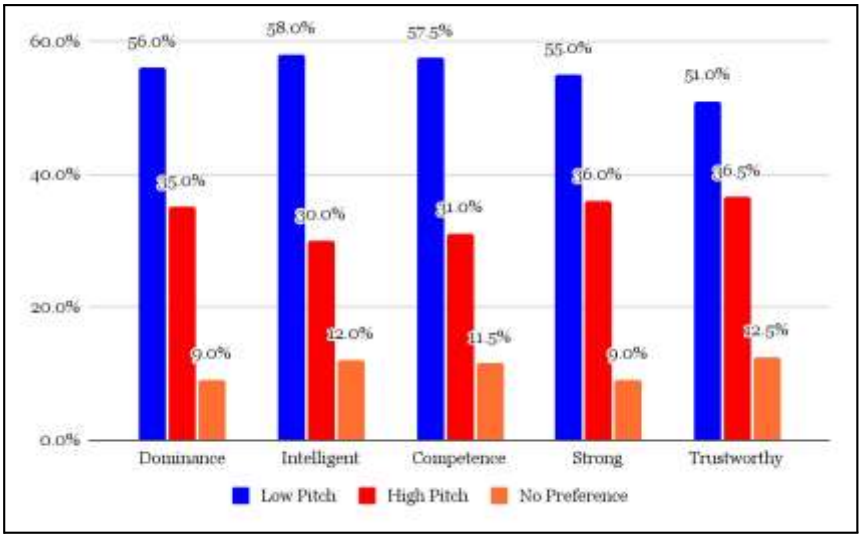

Figure 5. Respondents' Chosen Male Voice Pitch for the Leadership Attributes

The finding in the aforementioned literature is also reflected in the results of this study as it can be observed in Figure 5 that respondents in

general have significantly associated the low-pitched male candidate with the leadership attributes of dominance (X^2= 66.529, df= 2, p=.000 < 0.05), intelligence (X^2= 64.480, df= 2, p=.000 < 0.05), competence (X^2= 63.970, df= 2, p=.000 < 0.05), strength (X^2= 64.120, df= 2, p=.000 < 0.05), and trustworthiness (X^2= 45.370, df= 2, p=.000 < 0.05). Results also show that this tendency to associate all the leadership attributes with the low-pitched male candidate is observed to be consistent among male and female respondents as well as among all age groups (young adults, middle-aged adults, old-aged adults) and are all statistically significant at 0.05 level.

Table 3. Summary of the Reasons and Impressions to the Male Voice Pitches

Hypothetical Male Candidate	Reasons	Impression
Low-Pitched Male Voice	Dominant, strong, trustworthy, can communicate effectively, soothing, pleasant, and diplomatic.	Soft Voice, modest, and Competent/ good leader
High-Pitched Male Voice	Clear and Loud	Helpful and sincere

These attributes were further reinforced by the qualitative findings of this study as reasons and impressions of the respondents of the interview as summarized in Table 3 highlighted that the low-pitched male voice indeed sounded “dominant”, “strong”, “trustworthy”, and “competent” or a “good leader” thus was preferred to be voted for as president. Coincidentally, these traits are what Filipinos are seeking when choosing their leaders. In fact, in a recent Voter Insights on the 2022 National Elections (VINE) survey conducted by Boses, Opinyon, Siyasat, at Siyensya para sa Pilipinas (BOSES Pilipinas), 69% of respondents indicated a preference for candidates who demonstrate strong leadership, 55% emphasized the importance of honesty in a candidate, and 42% highlighted the necessity for intelligence in an aspirant.

Aside from the fact that the majority of the respondents find the low-pitched male voice to be dominant, intelligent, competent, strong, and trustworthy, additional attributes found in the qualitative findings such as the “soothingness” of the low-pitched male voice as well as it sounding “diplomatic”, “pleasant”, and having the ability to “communicate effectively” were also highlighted among the reasons as to why respondents’ preferred to vote for the low-pitched male voice. Impressions towards the low-pitched male voice also revealed that the low-pitched male voice sounded “soft” and “modest”. Meanwhile, interview respondents commonly pointed out the clarity and the loudness of the high-pitched male voice.

In contrast to the consistency of how the respondents have associated the low-pitched male candidate with being dominant, intelligent, competent, strong, and trustworthy, the same cannot be observed in the case of the generally preferred low-pitched female voice.

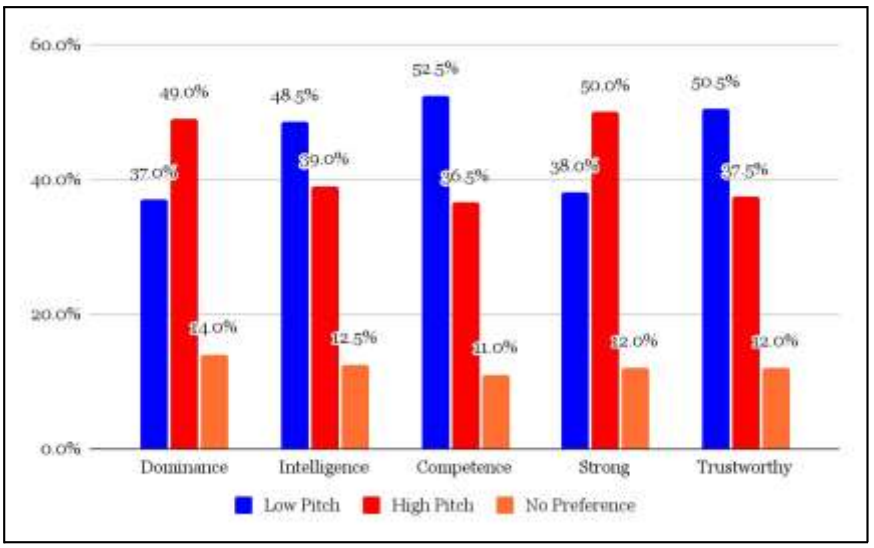

Figure 6. Respondents' chosen female voice pitch for the leadership attributes

As shown in Figure 6, respondents, in general, have significantly associated dominance (X^2= 37.960, df= 2, p=.000 < 0.05) and strength (X^2= 45.280, df= 2, p=.000 < 0.05) with the high-pitched female candidate while the low-pitched female candidate was significantly associated with the remaining leadership attributes of intelligence (X^2= 41.770, df= 2, p=.000 < 0.05), competence (X^2= 52.570, df= 2, p=.000 < 0.05), and trustworthiness (X^2= 46.030, df= 2, p=.000 < 0.05).

Results show that this pattern in associating the high-pitched female candidate to dominance and strength while the low-pitched female candidate to intelligence, competence, and trustworthiness was only observed among the female and male respondents when we assess this by gender as well as among middle-aged respondents when we assess this by age group and these are all statistically significant at 0.05 level.

In contrast, the old-aged respondents have significantly associated all the indicated leadership attributes of dominance (X^2= 19.143, df= 2, p=.000 < 0.05), intelligence (X^2= 31.500, df= 2, p=.000 < 0.05), competence (X^2= 34.357, df= 2, p=.000 < 0.05), strength (X^2= 16.929, df= 2, p=.000 < 0.05), and trustworthiness (X^2= 30.071, df= 2, p=.000 < 0.05) to the low-pitched female candidate, while the young adult respondents have significantly associated all the indicated leadership attributes except intelligence (X^2= 4.536, df= 2, p=.104 > 0.05) to the high-pitched female candidate. Chi-square goodness of fit results showed that young adult respondents did not significantly associate any voice pitch of the female candidate to the leadership attribute of intelligence.

In contrast to the consistency observed in the case of the low-pitched male candidate, leadership attributes association varied in the case of the female candidate. While the tendency to associate the low-pitched female

candidate with competence, trustworthiness, and intelligence, coincides with existing voice pitch and voting behavior literature such as that of Çinar (2020) and Klofstad et al. (2012), the tendency to associate dominance and strength to the high-pitched female voice is rather new and different from the established literature on how the low-pitched female voice is typically assessed as stronger (Klofstad et al., 2012) and more dominant (Borokowska & Pawlowski, 2011; Puts et al., 2007). The high-pitched female voice being associated with strength and dominance was also further reinforced by the qualitative findings of this study.

Table 4. Summary of the Reasons and Impressions to the Female Voice Pitches

Hypothetical Female Candidate	Reasons	Impression
Low-Pitched Female Voice	Not too intimidating, calm, soothing, sincere, kind thus, diplomatic.	Soft voice, modest, kind, not easily angered, and a good person
High-Pitched Female Voice	Loud, clear, and can easily be heard, has force, confident, alluring.	Convincing, determined, get things done, strong/tough, unapproachable

As seen in the summary in Table 4, evident among the respondents of the interview is the impression of "toughness" or "strength" due to the apparent "loudness" of the high-pitched female voice. It is also interesting to point out that as observed among some respondents of the interview who preferred the low-pitched female voice, they have also associated the high-pitched female voice with a negative attribute of being "*mataray*" or "unapproachable" in general, as the high-pitched female voice can also come off as too dominant, strong, aggressive and harsh (Watson, 2019). This negative association with the high-pitched female voices was highlighted by Watson (2019) as she posited that when women raise their voice pitch, there is a tendency that it will come off as loud and harsh thus contributing to the attribute of it being unapproachable. This could explain why respondents generally preferred to vote for the low-pitched female candidate who appears to be not too dominant and strong but more "calm", "diplomatic", and "not too intimidating". Indeed, as posited by Chen & Lee (2013), too-dominant leaders tend to have lesser support among the masses due to their nature of "command and direct" leadership which sometimes affects organizational and group coordination.

Aside from the fact that the majority of the respondents find the low-pitched female voice to be intelligent, competent, and trustworthy, additional attributes found in the qualitative findings such as the low-pitched female voice sounding "calm", "soothing", "not too intimidating", "sincere", "kind" and "diplomatic" were also highlighted among the reasons as to why respondents'

preferred to vote for the low-pitched female voice. As the low-pitched female voice sounds "kind" and "calm", she is also viewed as tending to have a more diplomatic approach towards things as a politician hence also being linked to being "diplomatic". Impressions towards the low-pitched female voice also revealed that the low-pitched female voice sounded more "soft", "modest", "not easily angered", and a "good person" in general.

On the other hand, a common reason among respondents of the interview who chose to vote for the high-pitched female voice was that the high-pitched female voice was "loud" and had more "force" in her voice as compared to the "soft" low-pitched female voice. The apparent "loudness" of the high-pitched female voice also contributed to it sounding "clearer" and one that "can be easily heard" by people. Moreover, respondents of the interview also reasoned that the high-pitched female voice was "alluring" or that it could easily catch people's attention. Aside from the voice being "loud", "clear", and "enticing", they also particularly emphasized that the high-pitched female voice also sounded "confident."

In the case of the non-binary respondents, 66.7% or 2 of the 3 non-binary respondents likewise did not associate all indicated leadership attributes to a particular male and female voice pitch as voice pitch of candidates does not matter on their impression of dominance, intelligence, competence, strength, and trustworthiness. This means that they do not discriminate between the low and high male and female voice pitch of the candidate when judging for dominance, intelligence, competence, strength, and trustworthiness.

Table 5. Respondents' reasons for having no preference

	Reasons
No Preference	Respondents were not convinced and did not know the candidates very well. They also imply that a voice pitch is not a sufficient basis when voting for a presidential candidate.

While only a marginal number of respondents such as in the case of the non-binary respondents have expressed no preference as the voice pitch of both males and females do not matter in their choice of who to vote, it is still important to highlight their reasons. As summarized in Table 5, respondents of the interview who preferred no male and female voice pitch justified that the voice pitch of candidates is not enough basis to judge the suitability of a candidate to become president. Some respondents to the interview were unconvinced and some emphasized the importance of knowing these candidates first and assessing them based upon their actions and platforms.

Aside from the indicated leadership attributes explored in this study, other attributes of the preferred female and male voice pitch were also identified in the respondents' reasons and impressions of their preferred female and male voice pitch. The results of this study also provide new leadership

attributes for the female and male voice pitch. The available literature on voice pitch and voting preference most often are limited only to the leadership attributes of dominance, intelligence, competence, strength, and trustworthiness (Tigue, et. al, 2011; Klofstad, et. al., 2012; Çinar, 2020; Anderson & Klofstad, 2012).

Qualitative results of this study however identified other leadership attributes that respondents have deemed necessary for leaders. As shown in their reasons and impressions for the low-pitched male and female voice, respondents value leaders who appear to be calm, diplomatic, sincere, modest, and generally exhibit a good personality, like being kind, not easily angered, and approachable. On the other hand, reasons and impressions for the high-pitched male and female voices showed that respondents may also give value to leaders who appear to be confident, determined, convincing, and alluring. In terms of vocal qualities, respondents give importance to a leader's ability to project a soft, soothing, and pleasant voice. Some respondents also value a leader's ability to project a loud and clear voice. These could be leadership attributes that can be explored in future voting preference and voice pitch studies.

CONCLUSION

As the findings suggest, the voice pitch of male and female hypothetical candidates influenced the voting preferences and leadership-related impressions of Tubod, Iligan City voter respondents. Results also indicate that the male and female voice pitch also produced different impressions among respondents. These findings coincide with Klofstad et al. 's (2012) argument that voice pitch can lead to "impressionistic judgments" and can provide for a "mental shortcut" that can shape voters' impressions which can aid voters in making decisions about their preferences of who to vote. The general tendency of the respondents to have a specific male and female voice pitch preference of who to vote as well as to have a specific male and female voice pitch they associate as dominant, intelligent, competent, strong, and trustworthy, along with other impressions, coincides with the assumptions made by Klofstad et al. (2012), Klofstad (2015), and Tigue et al. (2011) that voice pitch is associated with different leadership attributes and also influences voting preferences. Voice pitch then can be a factor that can influence the voting preferences of voters.

Results have shown that respondents in general have significantly preferred to vote for the low-pitched male and female voice. Moreover, the low-pitched male voice was also consistently associated with the leadership attributes of dominance, intelligence, competence, strength, and trustworthiness. This coincides with the results of Klofstad (2015), Tigue et. al (2011), Klofstad, et. al (2012), and Çinar (2020) which all highlighted the tendency of voters to prefer to vote for the low-pitched male and female candidates as they were also frequently associated with positive leadership attributes.

Novel and different results from the currently available literature can be seen in the case of young adult respondents having no significant preference of who to vote for the female candidate. Our results have also shown that the

female voice pitch associated with the indicated leadership attributes also varied and was not consistently associated with the low-pitched female voice, especially in the leadership attributes of strength and dominance. While this did differ from established literature on how the low-pitched female voice is typically assessed as stronger (Klofstad et al., 2012) and more dominant (Borokowska & Pawlowski, 2011), this did coincide with Klofstad (2015) and Klofstad et al.'s (2012) assumptions that voice pitch preferences and impressions formed may vary across different demographics. The results presented in this study, therefore, can be a groundwork for further research exploring whether the influence of male and female voice pitch on voting preference and leadership-related impressions vary or are consistent across different contexts.

Lastly, the qualitative findings of this study were also able to provide for new leadership attributes that voters may deem necessary for leaders. Aside from being dominant, intelligent, competent, strong, and trustworthy which are the usual leadership attributes emphasized in most voice pitch and voting preference literature (Tigue, et. al, 2011; Klofstad, et. al., 2012; Çinar, 2020; Anderson & Klofstad, 2012), voters may also equally give value to leaders who possess the qualities of being approachable, calm, kind, diplomatic, sincere, convincing, and alluring. Respondents may also value a leader's ability to project a soft, soothing, and pleasant voice as well as a loud and clear voice. These could be leadership attributes that can be explored in future voting preference and voice pitch studies.

Based on the findings, several strategic recommendations can be proposed to enhance electoral practices and voter awareness. First, there is a crucial need for targeted public awareness campaigns that educate voters about the subconscious biases related to voice pitch and how these biases impact perceptions of leadership qualities. Second, political candidates and their teams should be encouraged to invest in voice training and communication strategies that optimize voice pitch to convey competence, trustworthiness, and other desirable leadership attributes effectively through various media channels. Third, advocating for regulatory reforms to enhance transparency in electoral processes, mitigate the influence of political dynasties, and strengthen party systems can contribute to fairer electoral environments. Finally, further research should be supported to explore how voice pitch interacts with other factors influencing voting preferences across diverse demographic groups and regional contexts within the Philippines.

REFERENCES

Anabo, F. D. (2021). What Matters Most to Student Voters?: A Conjoint Analysis of Political Candidate Attributes. *Philippine Social Science Journal, 4*(2), 18-29. https://doi.org/10.52006/main.v4i2.355

Anderson, R. C., & Klofstad, C. A.. (2012). Preference for leaders with masculine voices holds in the case of feminine leadership roles. *PloS one, 7*(12), e51216. Retrieved from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0051216

Apicella, C. L; Feinberg, D. R (2009). Voice pitch alters mate-choice-relevant perception in hunter-gatherers. *Proceedings of the Royal Society B: Biological Sciences, 276*(1659), 1077–1082. doi:10.1098/rspb.2008.1542

Apuke, O. D. (2017). Quantitative Research Methods: A Synopsis Approach. *Kuwait Chapter of Arabian Journal of Business and Management Review 6* (11) 40-47.Retrieved from https://www.researchgate.net/publication/320346875_Quantitative_Research_Method s_A_Synopsis_Approach

Aung, T., & Puts, D. (2020). Voice pitch: a window into the communication of social power. *Current opinion in psychology, 33*, 154-161. https://doi.org/10.1016/j.copsyc.2019.07.028

Banai, B., Banai, I. & Bovan, K. (2017). Candidates' voice in political debates and the outcome of presidential elections. *Conference: 20th Psychology Days.*Retrieved from https://www.researchgate.net/publication/322303221_Candidates'_voice_in_political_ debates_and_the_outcome_of_presidential_elections

Banai, B., Laustsen, L., Banai, I. P., Bovan, K. (2017). Presidential, But Not Prime Minister, Candidates With Lower Pitched Voices Stand a Better Chance of Winning the Election in Conservative Countries. Evolutionary Psychology. Retrieved from https://journals.sagepub.com/doi/pdf/10.1177/1474704918758736

Bhat, D., & Pati, V.K. (2016). Human Age Group Classification Using Facial Features. International Journal of Modern Trends in Engineering and Research, 3.

Bhattacherjee, A. (2012). Social Science Research: Principles, Methods, and Practices. Retrieved from http://scholarcommons.usf.edu/oa_textbooks/3

Borkowska, B., & Pawlowski, B. (2011). *Female voice frequency in the context of dominance and attractiveness perception. Animal Behaviour, 82(1), 55–59.* doi:10.1016/j.anbehav.2011.03.024

Chetty, Priya (2015). *Cross tabulation in SPSS*. Knowledge Tank; Project Guru. Retrieved from: https://www.projectguru.in/cross-tabulation-spss/

Çinar, A. C. (2020). Measuring the extent of voice pitch bias in voter behavior (Master's thesis, Sosyal Bilimler Enstitüsü). Retrieved from: https://acikbilim.yok.gov.tr/handle/20.500.12812/227355

COMELEC (2019). Records and Statistics Division, ERSD COMMISSION ON ELECTIONS Republic of the Philippines. Retrieved from https://comelec.gov.ph/php-tpls-attachments/2019NLE/Statistics/2019_RVVAV_mcoc_final.pdf

CREST. N.d.. How and Why Ideologies are Shared and Learned. Retrieved December 10,2022, from https://crestresearch.ac.uk/resources/how-and-why-ideologies-are-shared-and-learned/

Feinberg, D. R., DeBruine, L. M., Jones, B. C., & Perrett, D. I. (2008). *The Role of Femininity and Averageness of Voice Pitch in Aesthetic Judgments of Women's Voices. Perception, 37(4), 615–623.* doi:10.1068/p5514

GMA News Online. (2022, February 22). Majority of Filipinos prefer strong, honest leaders—survey.https://www.gmanetwork.com/news/topstories/nation/822097/majority-of-filipinos-prefer-strong-honest-leaders-survey/story/

Horowitz, J.M., Igielnik, R., & Parker, K. (2018). Views on Leadership traits and competencies and how they Intersect with Gender. Retrieved December 10, 2022, from https://www.pewresearch.org/social-trends/2018/09/20/2-views-on-leadership-traits-a nd-competencies-and-how-they-intersect-with-gender/

Hunter, E. J., Tanner, K., & Smith, M. E. (2011). Gender differences affecting the vocal health of women in vocally demanding careers. *Logopedics Phoniatrics Vocology, 36*(3),128-136. Retrieved from: https://www.tandfonline.com/doi/abs/10.3109/14015439.2011.587447

Jones, B. C., Feinberg, D. R., DeBruine, L. M., Little, A. C., & Vukovic, J. (2010). *A domain-specific opposite-sex bias in human preferences for manipulated voice pitch. Animal Behaviour, 79(1),57–62.* doi:10.1016/j.anbehav.2009.10.00310.1016/j.anbehav.2009.10.00

Klofstad, C. A. (2016). Candidate voice pitch influences ele ctionoutcomes. *Political Psychology, 37*(5), 725-738. Retrieved from: https://onlinelibrary.wiley.com/doi/abs/10.1111/pops.12280

Klofstad, C. A., Nowicki, S., & Anderson, R. C. (2016). How Voice Pitch Influences Our Choice of Leaders. *American Scientist, 104*(5), 282. doi:10.1511/2016.122.282

Klofstad, C. A.; Anderson, R. C.; Peters, S. (2012). Sounds like a winner: voice pitch influences the perception of leadership capacity in both men and women. *Proceedings of the Royal Society B: Biological Sciences, 279*(1738), 2698–2704. doi:10.1098/rspb.2012.0311

Klofstad, Casey A.; Anderson, Rindy C.; Nowicki, Stephen; Snyder, Joel (2015). Perceptions of Competence, Strength, and Age Influence Voters to Select Leaders with Lower-Pitched Voices.*PLOSONE, 10*(8), e0133779–. doi:10.1371/journal.pone.0133779

Kob, M., Dejonckere, P., Calderon, E., & Kaynar, S. (2009). Simulation of differences between male and female vocal fold configuration during phonation. *NAG/DAGA,* 1755-6. Retrieved from:

http://pub.dega-akustik.de/NAG_DAGA_2009/data/articles/000570.pdf

Krahé, B., & Papakonstantinou, L. (2020). Speaking like a man: Women's pitch as a cue for gender stereotyping. *Sex Roles, 82*(1), 94-101. https://doi.org/10.1007/s11199-019-01041-z

Laerd Statistics. (2018). *Chi-Square Goodness-of-Fit Test in SPSS Statistics*. Retrieved from Laerd Statistics: https://statistics.laerd.com/spss-tutorials/chi-square-goodness-of-fit-test-in-spss-statist ics.php

Laustsen, L., Petersen, M. B., & Klofstad, C. A. (2015). Vote choice, ideology, and social dominance orientation influence preferences for lower-pitched voices in political candidates. *Evolutionary Psychology, 13*(3), 1474704915600576.

Little, A. C., Burriss, R. P., Jones, B. C., & Roberts, S. C. (2007). Facial appearance affects voting decisions. *Evolution and Human Behavior, 28*(1), 18-27. https://doi.org/10.1016/j.evolhumbehav.2006.09.002

Lopez-Poveda, E. A.(2009).Masking, the Critical Band and Frequency Selectivity. Retrieved from https://health.uconn.edu/meds5377/wp-content/uploads/sites/151/2017/07/Masking_F requency_selectivity_and_the_Critical_Band.pdf

Lord, Robert G.; Day, David V.; Zaccaro, Stephen J.; Avolio, Bruce J.; Eagly, Alice H. (2017). Leadership in applied psychology: Three waves of theory and research. *Journal of Applied Psychology, 102*(3), 434–451. doi:10.1037/apl0000089

Morreal,S.(1990). "TheCompetentSpeaker": Development of a Communication-Competency Based Speech Evaluation Form and Manual. Retrieved from https://eric.ed.gov/?id=ED325901

Morgan, N. (2014). Which Makes A Better Speaking Voice - High or Low? Retrieved December 10, 2022, from
https://www.forbes.com/sites/nickmorgan/2014/12/11/which-makes-a-better-speaking-voice-high-or-low/?sh=361d56f73905

Murray, G. R., & Schmitz, J. D. (2011). Caveman Politics: Evolutionary leadership preferences and physical stature. *Social Science Quarterly, 92*(5), 1215-1235. https://doi.org/10.1111/j.1540-6237.2011.00815.x

Nikolopoulou, A. (2022). Quotasampling. Retrieved from https://www.scribbr.com/methodology/quota-sampling/

O'Connor, J. J., & Barclay, P. (2017). The influence of voice pitch on perceptions of trustworthiness across social contexts. *Evolution and human behavior, 38*(4), 506-512. https://doi.org/10.1016/j.evolhumbehav.2017.03.001

O'Connor, J. J., & Barclay, P. (2018). High voice pitch mitigates the aversiveness of antisocial cues in men's speech. British Journal of Psychology, 109, 812–829. https://doi.org/10.1111/bjop.12310

Oleszkiewicz, A. & Pisanski, K. (2017). Voice-based assessments of trustworthiness, competence, and warmth in blind and sighted adults. *Psychonomic Bulletin & Review, 24*(3), 856–862. doi:10.3758/s13423-016-1146-y

Osawa, K. (2015). *Traditional Gender Norms and Women's Political Participation: HowConservative Women Engage in Political Activism in Japan. Social Science Japan Journal, 18(1), 45–61.* doi:10.1093/ssjj/jyu041

Palinkas, L. A., et. al (2016). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm Policy Ment Health 42*(5): 533–544. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4012002/

Parker, M. A., & Borrie, S. A. (2017). *Judgments of Intelligence and Likability of Young Adult Female Speakers of American English: The Influence of Vocal Fry and the Surrounding Acoustic-Prosodic Context. Journal of Voice.* doi:10.1016/j.jvoice.2017.08.002

Parveen, H., &Showkat, N. (2017). Content Analysis. Retrievedfrom: https://www.researchgate.net/publication/318815342_Content_Analysis PhilAtlas (n.d). Tubod, Iligan Profile. Retrieved from https://www.philatlas.com/mindanao/r10/iligan/tubod.html

Puts, D. A., Hodges, C. R., Cárdenas, R. A., & Gaulin, S. J. (2007). Men's voices as dominance signals: vocal fundamental and formant frequencies influence dominance attributions among men. *Evolution and Human Behavior, 28*(5), 340-344. doi:10.1016/j.evolhumbehav.2007.05.002

Puts, D. A., & Aung, T. (2018). *Does Men's Voice Pitch Signal Formidability? A Reply to Feinberg et al. Trends in Ecology & Evolution.* doi:10.1016/j.tree.2018.12.004

Re, Daniel E.; O'Connor, Jillian J. M.; Bennett, Patrick J.; Feinberg, David R.; Reby,

David (2012). Preferences for Very Low and Very High Voice Pitch in Humans. *PLoS ONE, 7*(3), e32719–.doi:10.1371/journal.pone.0032719 Reverso Dictionary (n.d.). No Preference Definition. Retrieved January 14, 2023 from https://dictionary.reverso.net/english-cobuild/No+preference

Shirazi, T. N., Puts, D. A., & Escasa-Dorne, M. J.(2018).Filipino women's preferences for male voice pitch: Intra-individual, life history, and hormonal predictors. Adaptive Human Behavior and Physiology, 4(-), 188–206

Sorokowski, P., Puts, D., Johnson, J., Żółkiewicz, O., Oleszkiewicz, A., Sorokowska, A., … Pisanski, K. (2019). *Voice of Authority: Professionals Lower Their Vocal Frequencies When Giving Expert Advice. Journal of Nonverbal Behaviour.* doi:10.1007/s10919-019-00307-0

Surawski, M. K., & Ossoff, E. P. (2006). The effects of physical and vocal attractiveness on impression formation of politicians. *Current Psychology, 25*(1), 15-27. doi:10.1007/s12144-006-1013-5 The Constitution of the Philippines (1987). Article V: Suffrage. Official Gazette of the Philippines. Retrieved from https://www.officialgazette.gov.ph/constitutions/1987-constitution/

Tigue, C. C., Borak, D. J., O'Connor, J. J. M., Schandl, C., Feinberg, D. R. (2012). Voice pitch influences voting behavior. *Evolution and Human Behavior, 33* (2012), 210-216. Retrieved from: https://www.sciencedirect.com/science/article/pii/S1090513811001024

Tsantani, M. S., Belin, P., Paterson, H. M., & McAleer, P. (2016). Low vocal pitch preference drives first impressions irrespective of context in male voices but not in female voices. *Perception, 45*(8), 946-963. doi:10.1177/0301006616643675

Vukovic, J., Jones, B. C., DeBruine, L., Feinberg, D. R., Smith, F. G., Little, A. C., Welling, L. L. M., & Main, J. (2010). Women's own voice pitch predicts their preferences for masculinity in men's voices. *Behavioral Ecology, 21*(4), 767–772. https://doi.org/10.1093/beheco/arq051

Waldman, David A.; Ramirez, Gabriel G.; House, Robert J.; Puranam, Phanish (2001). Does Leadership Matter? CEO Leadership Attributes and Profitability Under Conditions of Perceived Environmental Uncertainty. *Academy of Management Journal, 44*(1), 134–143. doi:10.5465/3069341

Watson, S.(2019). TheUnheardFemale Voice.Retrieved from https://leader.pubs.asha.org/doi/10.1044/leader.FTR1.24022019.44

Wojtasik, W. (2013). Functions of elections in democratic systems. Political Preferences, (4), 25-38. Retrieved from: https://www.researchgate.net/publication/255965201_Functions_of_Elections_in_De mocratic_Systems

Wolak, J. (2020). *Self-Confidence and Gender Gaps in Political Interest, Attention, and Efficacy. The Journal of Politics.* doi:10.1086/708644

NOTES ON CONTRIBUTORS

Allen Dave M. Capa is currently studying for a Juris Doctor Degree at Mindanao State University College of Law - Iligan Extension, Iligan City, Philippines. Email:allendave.capa@g.msuiit.edu.ph

Charish Ann G. Lariosa is currently studying for a Juris Doctor Degree at Mindanao State University College of Law - Iligan Extension, Iligan City, Philippines.Email:charishann.lariosa@g.msuiit.edu.ph

Renalyne A. Pacaldo is currently studying Juris Doctor Degree at School of Law And Governance, University of San Carlos, Cebu City, Philippines. Email:reynalyn.pacaldo@g.msuiit.edu.ph

John Gieveson E. Iglupas is an Assistant Professor in Political Science at Mindanao State University - Iligan Institute of Technology, Iligan City, Philippines. He specializes in peace, youth, and the arts. Email: johngieveson.iglupas@g.msuiit.edu.ph

Hilton J. Aguja is a Professor in Political Science at Mindanao State University-Iligan Institute of Technology, Iligan City, Philippines. He specializes in International Politics, International Political Economy, and Gender Studies. Email: hilton.aguja@g.msuiit.edu.ph

Elaine M. Baulete is a Professor in Political Science at Mindanao State University-Iligan Institute of Technology, Iligan City, Philippines. He specializes in Gender Studies, Development Studies and Public Administration. Email: elaine.baulete@g.msuiit.edu.ph