Facial Morphometrics, Voters' Facial Preferences, and Electoral Outcomes

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ABSTRAK

Menjalankan pemilihan dengan cara seperti pemilih harus diteliti dengan baik dari latar belakang dan program dari kandidat yang dipilih. Namun, dalam tidak adanya informasi lainnya, pemilih cenderung untuk menggunakan isyarat seperti persepsi mereka pada penampilannya. Penelitian ini merupakan studi perintis untuk mengadopsi penampilan morfometri dalam menguji pengaruh penampilan kandidat pada hasil pemilu sementara mereka mengabaikan kepentingan lainnya seperti jabatan, keberpihakan, dan popularitas. Hal ini juga memeriksa analisis penampilan preferensi pemilih dengan pengetahuan politik yang rendah. Penelitian ini dibagi atas 2 hal. Tahap pertama adalah analisis morfometrik penampilan dari 33 calon senator di tahun 2013 pada pemilu nasional di Filipina. Mengadopsi metode morfometrik geometrik dari ilmu alam, karakteristik dari gambar konsensus yang dihasilkan dari calon senator dianalisis dan diidentifikasi. Tahap kedua dilakukan untuk memverifikasi temuan tahap pertama penelitian melalui survei kuesioner dengan penampilan calon kandidat. Para peneliti merubah tampilan dari kontinuum maskulinitas-feminitas dan meminta preferensi tampilan responden yang dipilih. Hasil pertama yang ditemukan untuk menguatkan tahap kedua. Hal ini menunjukan bahwa citra dari 33 konsensus kandidat senat ditandai dengan maskulin hiper dan hiper morfometrio tampilan feminin. Menariknya pada tahap kedua, responden memiliki penilaian secara signifikan lebih tinggi pada calon dugaan dengan maskulin hiper dan karakteristik penampilan feminin. Hal Ini dapat diperoleh dari perilaku pemilih dari pemilih dalam masyarakat informasi politik rendah yang di isyaratkan penampilan mungkin memiliki suatu cetakan keputusan pemilihan. Oleh karena itu, hal ini sangat penting untuk mempertimbangkan dinamika pemilihan pemimpin di pemerintahan dengan mempelajari perilaku dari pemilih. Penelitian ini menandakan bahwa tampilan dari morfometrik merupakan suatu alat yang berguna dalam menentukan peluang dari memenangkan calon serta yang sebenarnya dalam pemilihan.
Kata Kunci: Morfometrik geometrik, Pemilu, pandangan Pemilih

ABSTRACT

Elections operate in such manner that voters must have researched well the political backgrounds and platforms of the candidates they are voting. However, in absence of other information, voters tend to resort to cues such as their perception on facial appearances. This study is a pioneering study to adopt facial morphometric in testing the influence of candidates'facial appearance on their electoral outcomes while omitting other variables such as incumbency, partisanship, and popularity. It also investigates the facial preferences of voters with low political knowledge. This study is divided two-fold. The first phase is a facial morphometric analysis of 33 senatorial candidates from the 2013 Philippine national elections. Adopting the geometric morphometric method from natural sciences, the facial characteristics of the generated consensus image of the senatorial candidates were analyzed and identified. The second phase was conducted to verify the findings of the first phase of the study through survey questionnaires with sets of morphed faces of presumptive candidates. The researchers morphed faces from masculinity-femininity continuum and asked the facial preferences of chosen respondents. The result of the first phase was found to corroborate with the second phase. It showed that the consensus image of the 33 senatorial candidates is characterized by a hyper masculine and hyper feminine facial morphometry. Interestingly on the second phase, respondents have significantly higher votes on presumptive candidates with hyper masculine and hyper feminine facial characteristics. It can be gleaned from the voting behavior of the electorate in a politically low informed society that facial cues may have a bearing on moulding electoral decisions. Hence, It is highly important to consider the dynamics of electing leaders in the government by studying the behavior of the voters. This study also signifies that facial morphometric is a useful tool in determining the winning chances of the presumptive candidates as well as the actual candidates in an election.
Keywords: Geometric Morphometric, Elections, Voter's Facial Preferences

INTRODUCTION

Elections operate in such manner that voters must have researched well the political backgrounds and platforms of the candidates they are voting. However, in absence of other information, voters tend to resort to cues such as their perception on facial appearances. Several recent studies on elections suggest that the politician's facial appearance may have a bearing on their political outcomes. In a study by Todorov et al. (2015), subjects completely unfamiliar with American senatorial or gubernatorial candidates were shown photo pairs of competing candidates. Based entirely on perceptions from the photos, subjects were then asked to indicate which candidate from each pair they perceived as the more competent. This yielded the fascinating (or frustrating) result that subject's choices of competent-looking candidates actually predicted real-world electoral outcomes significantly better than chance (Laustsen, 2014). Similarly, this endeavour tests

the influence of candidates' facial appearance on their electoral outcomes while omitting other variables such as incumbency, partisanship, and popularity. It also investigates the perception of voters with facial appearance as a lone basis. This study is divided two-fold. The first part is a facial morphometric analysis of 33 senatorial candidates from the 2013 national elections. The second part is a mock election conducted to determine the facial preferences of the voters. It has been identified that the findings on the facial morphometric procedure of the 2013 senatorial candidates agreed with the findings of the mock elections of presumptive candidates. Geometric Morphometric is utilized in this study as a method adopted from the field of biology to analyze the facial morphometry of the senatorial candidates who ran last 2013 national elections. Lastly, this study serves as a pioneering research on the predictive value of facial appearances in explaining the electoral outcomes in the Philippines.

THEORETICAL FRAMEWORK

This study employs the Theory of Biological Determinism and the Theory of Good Genes Hypothesis. The "theory of biological determinism" according to Garland Edward Allen (2015) refers to the idea that all human behavior such as the tendency to choose candidates without credible basis is innate and determined by genes, brain size, or other biological attributes. This theory stands in contrast to the notion that the human behavior of making decisions based on gut-feeling and not based on facts is determined by culture or other social forces such as the set of beliefs of a person. Thus, this theory served as a guide to determine whether people has an innate human behavior of making decisions specifically in choosing candidates in an election based on gut-feeling.

Good Genes Hypothesis on the other hand is anchored on the exaggeration of the faces among running politicians as the critical determinant of preference by voters. From an evolutionary view, extremes of secondary sexual characteristics (more femi-

nine for women, more masculine for men) are proposed to be attractive because they advertise the quality of an individual in terms of heritable benefits; they indicate that the owners of such characteristics possess good genes. In other words, such traits advertise the possession of genes that are related to survival. This theory contends that the exaggerated faces among the candidates may cue attractiveness in the perception of the voters because of the quality it advertises.

RELATED STUDIES

Generally, electoral outcomes are determined by voters' preferences based on the candidate's background, party affiliation, ideologies, and charisma. However, in new democracies, candidate appearance and electoral outcomes have had significant relationships too.

Institutions, ideology, and issues dominate research on voting behavior in comparative politics. The conventional wisdom holds that vote choices are the result of the incentives provided by electoral rules, the identities forged by parties, the positions on the most controversial policies of the day, and the evaluations of incumbent performance on issues such as the economy (Lawson C., Lenz, Baker, & Myers, 2010). This study is based on a psychological research by Todorov, et al (2015) indicating that people often judge unfamiliar individuals based in their appearance, inferring personality traits such as competence, intelligence, honesty, and trustworthiness from facial features as basis. In some instances, this happens because some voters do not have much political information and their only mode of awareness is based on posters and campaign materials that they see in public and media sources; and the voters' first impression is also based on the faces they see in campaign materials. Thus, this study aims to look into determining the attitudes of voters towards different facial features.

While in a study conducted by Mutz, Brody, and Sniderman (1996), they focused on candidates' policy positions, performance

records, and party affiliation that are deemed as the fundamental determinants of voter preferences. However, the scarcity of resources and the luxury of time to gather resources impede the voters from researching on these matters.

Thus, in order to validate the claim, the usage of the photos of the candidates was highly incorporated in this research since it is considered to be the first hand information if not the only information that the voters would acquire. Moreover, the amount of political knowledge of the voter respondents was also taken into account in the research to reduce other intervening variables like partisanships and incumbency. The goal of this study is to determine the correlation of the facial appearance to electoral success using Geometric Morphometric and would apply quantitative treatment to data.

FACIAL FEATURES OF MASCULINE, FEMININE AND HYPER FACES

Dr. Marquardt (2014) defines a prototype face of a male by describing as 1) prominent-supra orbital (brow) ridges (frontal bossing) resulting in deep set appearing eyes, 2) flatter and narrower eyebrows, 3) slightly narrower eyes, 4) eyes less wide open, 5) slightly longer and/or wider nose 6) slightly thinner lips (especially upper lip) 7) square/ angled and or larger jaws (Bashour, 2005).

Feminine facial feature is described as 1) rounder face curves, 2) eyebrows are curved and corners are sharper, 3) long lashes that curl outwards that gives the impression of a brighter eyes and the eye shape is rounder or oval in shape 4) nose is smaller and narrower 5) cheeks are longer and rounded, 6) thicker upper lip, and the mouth is smaller 6) jaws are with rounded edges (Peters, 2013).

Hyper faces are described as the exaggerated features of the average masculine and feminine face. For women that means larger eyes, plumper lips, narrower lower jaw and smaller chin; for men, bushier eyebrows, sunken eyes and a wider, longer lower

jaw, according to Victor Johnston, a professor of biopsychology at New Mexico State University in Las Cruces (Smith, 2000).

MALE AND FEMALE FACIAL PREFERENCE

In the study conducted by Berggren et.al (2006), their study have found that female respondents tend to favour female candidates, while male respondents tend to vote equally often for men and women. They have confirmed that female respondents tend to vote for women to a larger extent than men tend to vote for men. They found a similar pattern in general evaluations: female respondents tend to evaluate women in photos clearly more positively than male respondents do, while the sex differences in evaluating photos of men are small.

Little et al. (2007) also suggested that on average, male respondents perceive male candidates to be more intelligent and competent than female candidates, and female candidates to be more beautiful, likable and trustworthy. Female respondents give more positive evaluations of female candidates in all respects (Berggren et.al, 2006).

PREFERENCE ON HYPERNESS

Perrett et al. (1994) found that exaggerating the physical differences between attractive faces and average faces (i.e. creating caricatures of attractive faces) increased their attractiveness. In other words, Perrett et al. demonstrated that attractive faces are not 'only average' (as some researchers who proposed the Averageness Hypothesis of attractiveness had suggested) but that some exaggerated facial characteristics are also found to be attractive. Although Perrett et al. presented evidence that attractive faces deviate systematically from an average shape, there is still no clear definition on how exaggerated a facial appearance could be. This literature can be further subject into inquiry but nonetheless, it claims that what is deemed to be attractive is not average.

TRAITS ATRRIBUTION TO FACIAL PREFERENCES

Recent studies by Ambady and Rosenthal (1992; 1993; 2008) have linked candidate appearance to the increase in psychological literature on the automatic processing of images of human faces. This research indicates that people often draw inferences about the character and abilities of others from their facial features, despite the fact that such inferences are of dubious accuracy (Mueller and Mazur 1996; Zebrowitz 1997; Ambady, Bernieri, and Richeson 2000; Hassin and Trope 2000; Zebrowitz et al. 2002; Rule and Ambady 2008). Laboratory studies, in which subjects cast hypothetical ballots after seeing pictures of politicians' faces, suggest that voters employ this same heuristic when evaluating candidates (Keating, Randall, and Kendrick 1999; Todorov et al. 2005; Johns and Shephard 2008).

While shortcuts enable citizens to make snap choices, on the flip side, it also demonstrates that these shortcuts can sometimes bias electoral outcomes and voter choice. In the absence of other information, voters may resort to cues that lead to stereotyped perceptions of candidates that hinder the electoral success of candidates. Sex and race can both lead to the attribution of stereotypical traits. Male candidates are perceived as tough, aggressive, self-confident and assertive, while their female counterparts are described as warm, compassionate, people-oriented, gentle, kind, passive, caring and sensitive (Huddy and Terkildsen 1993a, 1993b; Leeper 1991; Rosenwasser and Dean 1989). Sex and race are also used as a cue not only to infer issue positions and ideology as well with women and black candidates being seen as more liberal (McDermott 1998).

Social stereotypes create their own reality through a multistep causal mechanism: (a) Facial appearance elicits social stereotypes or expectations for the behavior and traits of attractive and unattractive targets, (b) these expectations are acted on by the perceiver in the form of differential judgments and treatment of attractive and unattractive targets, (c) differential judgment and treatment cause the development of differential behavior   and

traits in attractive and unattractive targets, and (d) attractive and unattractive targets internalize differential judgment and treatment and eventually develop differential behavior and self-views (for detailed discussions, see Darley & Fazio, 1980; and Zebrowitz, 1997).

METHODOLOGY
RESEARCH DESIGN

This research employed qualitative and quantitative methods. Qualitative method was used to describe the facial attributes of the consensus image of the winning and losing candidates of the 2013 national elections. In the acquisition of data, the official campaign materials that are available online were downloaded. The faces of the candidates from these graphics and posters were profiled from losing and winning faces.

The first part of the study is a facial morphometric analysis on the faces of the 33 senatorial candidates. The researchers determined facial landmarks on the faces of the candidates. These facial landmarkings characterized the morphometric differences in the facial structures of the losing and winning candidates. The manual input of landmarks was done through TPSDig program.

The TPSutil program assisted the classification of the landmarked faces by group that are set by the researchers. There are a total of 17 losing male candidates and 8 winning male candidates and a total of 4 winning female candidates and 4 losing female candidates. The program classified this group from one another.

After the landmarkings and classification, a consensus image of male and female candidates for both winning and losing were produced through TPSrelw program. In treating the consensus images, it is qualitatively compared to the standard description of the average masculine and feminine face.

Quantitative method was used in the second part of the study which determined the facial preferences of the male and female voter respondents among a set of morphed faces of presumptive

candidates. It is also used to determine the correlation of sex and facial preferences.

The researchers used survey questions for a mock election containing six sets of images. Each sets contain a masculine, hyper masculine, feminine and hyper feminine face. The images were produced through Face Morpher software. The voter respondents were asked to vote for the face they preferred the most and justify those choices by describing the image. Moreover, qualitative method was also used again to evaluate the voter respondents' judgments on morphed faces.

LOCALE OF THE STUDY

The locale of the study is within the coastal area, rural area, and urban area of Tubod, Lanao Del Norte and Iligan City. Specifically, this study was conducted in the farmlands and coastal areas of Tubod-Lala, Lanao Del Norte and employees within the Silver Lights Bakery of the same place and Barangay Tibanga, Iligan City. Lanao Del Norte including Iligan City has a total registered voters of 498, 814 in the year 2013. Its voter turn-out is only 365, 815 (Moneypolitics, 2013).

RESEARCH PARTICIPANTS

The total number of respondents is 160 with 40 participants per chosen sector. The researchers divided the total participants fairly according to sexes, which means that 80 of it are men and the other 80 are women. The primary respondents are fishfolks and farmers from Tubod, Lanao Del Norte; factory workers from Silver Lights Bakery in Tubod; and trisikad drivers from Barangay Tibanga, Iligan City.

RESEARCH INSTRUMENTS

For the facial morphometric analysis, the photos of the 33 senatorial candidates were obtained from secondary resources. The researchers used geometric morphometric softwares such as TPSDig, TPSUtil, TPSRelw in order to plot the facial landmarks

on the candidates's facial photos and to acquire a consensus image of the winning and losing candidates.

For the mock elections, this study also used a survey questionnaire contaning the morphed faces of presumptive candidates in order to determine the facial preferences of the voter respondents. The questionnaire is comprised of morphed faces from masculine, hyper masculine, feminine and hyper feminine faces acquired through face morphing software. Moreover, the survey questionnaire also determined the demographic backgrounds of the respondents such as age, sex and as well as the amount of political knowledge they have. The voter respondents were asked how often their exposures are to news and media in order to extract those who are low informed.

The questionnaire also determined the traits that are attributed to the facial features of the winning morphed faces of presumptive candidates. The voter respondents were asked to provide an explanation for their preferences to identify the traits that they are looking for in a candidate.
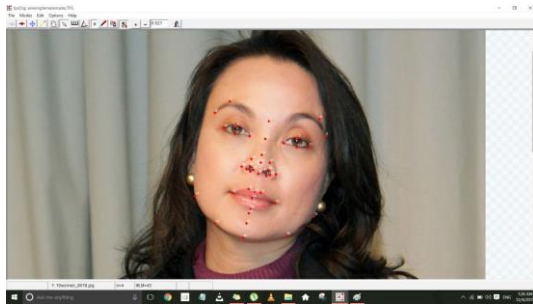
TPSDig assisted the researchers to identify the 43 facial landmarks from the faces of the electoral candidates. The landmarks were manually inputed in the program.

FIGURE 1. LOCATION OF ANATOMICAL LANDMARKS OF THE FACE PLOTTED THROUGH TPSDIG.

TREATMENT OF DATA

To treat the data, the researchers analyzed the facial morphometry of the 33 political candidates of the 2013 senatorial election. In order to acquire the consensus image of the winning and losing candidates, standard procedures of geometric

morphometrics were applied to the photos of the candidates assisted by softwares such as TPSDig, TPSUtil and TPSRelw.

TABLE 1. ANATOMICAL LANDMARKS OF THE FACE

Landmark	Description of Landmark	Type
1	Midpoint of the nasofrontal suture	II
2	Highest point on the upper margin of the midline portion of the eyebrow (left)	II
3	Highest point on the upper margin of the midline portion of the eyebrow (right)	II
4	Most lateral point of the eyebrow (left)	II
5	Most lateral point of the eyebrow (right)	II
6	Highest point of the eyelid (left)	II
7	Highest point of the eyelid (right)	II
8	Medial hinge of the eyelid (left)	I
9	Medial hinge of the eyelid (right)	I
10	Lateral hinge of the eyelid (left)	I
11	Lateral hinge of the eyelid (right)	I
12	Lowest point in the middle of the margin of the lower eyelid (left)	II
13	Lowest point in the middle of the margin of the lower eyelid (right)	II
14	The deepest point of the nasofrontal angle	II
15	Nose bridge	II
16	Most lateral point of the nose (left)	I
17	Most lateral point of the nose (right)	I
18	Most inner point between the nose tip and the upper lip	I
19	The midpoint of the vermillion border of the upper lip	I
20	Highest point of the upper lip (left)	I
21	Highest point of the upper lip (right)	I
22	Most lateral point where the upper and lower lip meet (left)	I
23	Most lateral point where the upper and lower lip meet (right)	I
24	Midline point where the upper and lower lip meet	II
25	Midpoint of the lower margin of the lower lip	I
26	Midpoint of the pogonion and lower lip	II
27	Most anterior point of the chin	II
28	Lowest point in the midline on the lower border of the chin	II
29	Protrusion of the mental tubercle (left)	II
30	Protrusion of the mental tubercle (right)	II
31	Most lateral point at the angle of the mandible (left)	II
32	Most lateral point at the angle of the mandible (right)	II
33	Most protruded point of the nasal tip	II
34	Medial point of the nasa ala outer margin (left)	II
35	Medial point of the nasa ala outer margin (right)	II
36	Most lateral point on the nasal ala (left)	II
37	Most lateral point on the nasal ala (right)	II
38	Lowest lateral point of the nasal ala inner margin (left)	II
39	Lowest lateral point of the nasal ala inner margin (right)	II
40	Highest point of the nasal ala margin (left)	II
41	Highest point of the nasal ala margin (right)	II
42	Medial point of the nasal ala margin (left)	II
43	Medial point of the nasal ala margin (right)	II

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TPSutil program separated the landmarked faces according to groups and categories set by the researchers. Out of the 25 male candidates, the program separated the 8 winning candidates from the 17 losing candidates. On the other hand, from the 8 running female candidates, the TPSutil program separated the 4 winning female candidates from the 4 losing female candidates.

TPSrelw was used to generate the consensus configuration of the faces of the male and female winning and losing candidates. This helped in the visualization of variation of the winning and losing candidates relative to the entire population.

In determining the preferred facial features among morphed faces of presumptive candidates, and its relationships between the sexes of the voter respondents, chi-square test is used. The Chi Square statistic compared the tallies or counts of categorical responses between two (or more) independent groups such as the male respondents and the female respondents.

In treating the qualitative data for the traits attributed to the winning facial characteristics of the morphed faces of presumptive candidates, the gathered answers were analyzed and coded into themes. The frequency of the answer was also recorded to determine the most recurring description.

RESULTS AND DISCUSSION
FACIAL MORPHOMETRIC ANALYSIS OF THE CONSENSUS IMAGE OF THE WINNING AND LOSING CANDIDATES OF THE 2013 SENATORIAL ELECTIONS
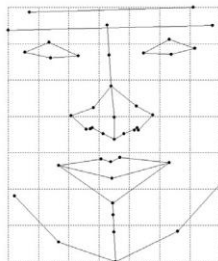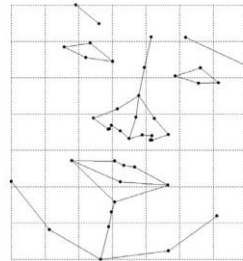

LOSING FEMALE   WINNING FEMALE

Figure 2 shows the consensus face of the losing and winning male politicians in the senatorial race last 2013 national elections (see appendices for names). The faces of the candidates were profiled through facial landmarking. Through TPSrelw, it created a consensus image of the losing and winning male candidates of 2013 senatorial elections.

FIGURE 3. CONSENSUS FACE OF THE WINNING AND LOSING FEMALE CANDIDATES OF THE 2013 SENATORIAL ELECTIONS

LOSING MALE   WINNING MALE
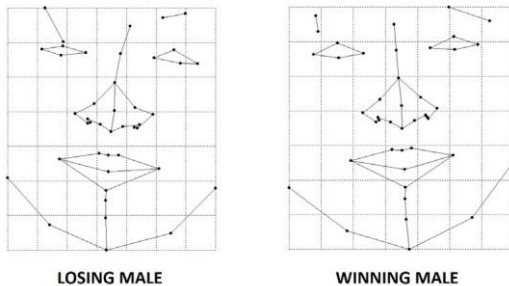
Apparently, the brow ridges and the deepness of the eyes are not in the fullest capability of the bitmap produced from TPSrelw to show. Furthermore, the narrowness of the eyes is both evident between the consensus face of the winning and losing male candidates. The width of their noses is relatively the same with no clear distinction of measurement. However, consensus face of the winning male candidates has longer nose compared to the consensus face of the losing male candidates. The lips of both the consensus face of the winning and losing male candidates are of relatively the same size. Lastly, the jaw size however is the most noticeable between the two. The consensus face of the winning male candidates has larger and wider jaw compared to the consensus face of the winning male candidates. This qualitative comparison and assessment signifies that the consensus face of the winning male candidates fits more the description of masculinity than the consensus face of the losing male candidates. This shows that most of the winning male candidates might have the

more masculine trait as compared to the losing male candidates.

FIGURE 2. CONSENSUS FACE OF THE WINNING AND LOSING MALE CANDIDATES OF THE 2013 SENATORIAL ELECTIONS

Little et al. (2007) found out that facial appearance potentially associated with leadership is facial dominance. Facial dominance is better seen in more masculine features. Dominant appearance is related to occupational status in certain settings. Facial masculinity, linked to facial dominance (Perrett et al., 1998) and it also positively relates to testosterone level (Penton-Voak & Chen, 2004), suggesting a link to actual dominant behavior (Mazur & Booth, 1998) in dominant-faced individuals.

These studies explain why the findings of the study showed that the consensus face of the winning male candidates possessed a more masculine feature.

Figure 3 shows the consensus face of the losing and winning female candidates in the 2013 senatorial election. It shows that the consensus face of the winning female candidates has a more elongated face than the consensus face of the winning female candidates which is rounder. The consensus face of the winning female candidates also has a smaller face than the consensus face of the losing female candidate. The lip sizes also differ. The consensus face of the losing female candidate has thicker lips as compared to the consensus face of the winning female candidates. The consensus face of the winning female candidates has a rounder face compare to the consensus face of the losing female candidates which has obvious edges. The eyelashes and the impression of brighter eyes is cannot be determined by the bitmap produced, however, it is noticeable that both the consensus face of the winning and losing female candidates have an oval-shaped eyes. The nose of the consensus face of the winning female candidates is smaller and narrower than the consensus face of the losing female candidates which happens to be relatively wider than the former. Moreover, both images show the thickness of upper lip but the consensus face of the winning female candidates has a smaller mouth in terms of width as compare to the

consensus face of the losing female candidates. Lastly, the consensus face of the winning female candidates is rounder than the consensus face of the losing female candidates. This comparison shows that the consensus face of the winning female candidates fits more the description of a more feminine face. Thus, this further shows that the consensus face of the winning female candidates is more feminine than the consensus face of the losing female candidates.

Huddy and Terkildsen (!993) explains that more feminine facial characteristics are described as warm, compassionate, people-oriented, gentle, kind, passive, caring and sensitive.

Perrett et al. (1994) found out in his study that voters regardless of sex prefer a more femininised versions of the faces. For voters, exaggerated feminine characteristics are attractive. This study by Perrett et al. (1994) support the findings of this study with more feminine features as the winning face in the consensus image of the 2013 female senatorial candidates.

PREFERENCE BY SEXES

TABLE 2. FACIAL PREFERENCE OF THE MALE VOTERS AMONG THE MORPHED FACES OF PRESUMPTIVE CANDIDATES

Facial Dominance		Candidate		Total	Interpretation
		Masculine	Feminine		
Hyper	Observed	131.0	157.0	288.0	
	Expected	120.0	120.0		
Non-Hyper	Observed	100.0	92.0	192.0	
	Expected	120.0	120.0		
Sum		231.0	249.0	480.0	
X^2 Hyper		1.01	11.41	24.94	SIGNIFICANT
X^2 Non-Hyper		4.00	8.52		
Degree of Freedom	1				
Critical Value	3.841				

Table 2 shows that hyper feminine and feminine faces are significantly preferred by male voters than the masculine and hyper masculine candidates. Specifically, hyper feminine candidates are significantly preferred by male voters, followed by hyper masculine, masculine then feminine.

The yielded high results for hyper feminine face among male

voter respondents supports the findings of Perret et al. (1998) which contend that males also demonstrate very strong preferences for the more femininised version of the faces. In both male and female faces, exaggerated characteristics were found attractive by the respondents.

TABLE 3. FACIAL PREFERENCE OF THE FEMALE VOTERS AMONG THE MORPHED FACES OF PRESUMPTIVE CANDIDATES

Facial Dominance		Candidate		Total	Interpretation
		Masculine	Feminine		
Hyper	Observed	108.0	177.0	285.0	
	Expected	120.0	120.0		
Non-Hyper	Observed	80.0	115.0	195.0	
	Expected	120.0	120.0		
Sum		188.0	292.0	480.0	
X^2 Hyper		1.20	27.08	48.49	SIGNIFICANT
X^2 Non-Hyper		20.00	0.22		
Degree of Freedom	1				
Critical Value	3.841				

Table 3 shows that female voters prefer hyper feminine and hyper feminine candidates over hyper masculine and masculine candidates. Specifically, the female voters preferred hyper feminine face followed by feminine, hyper masculine then masculine face.

The high number of votes for hyper feminine face in female voter respondents supports the findings that females tend to show strong preference for more femininised version of faces (Perret, et. al, 1998). Accordingly, exaggerated feminine characteristics are the most attractive compared to other facial characteristics.

Berggren et al. (2006) have confirmed in his study that female respondents tend to vote for women to a larger extent than men tend to vote for men. They found a similar pattern in general evaluations that female respondents tend to evaluate women in photos clearly more positively than male respondents do. Berggren et.al, (2006) also found out that female respondents give more positive evaluations on female candidates in all respects. This explains why feminine face comes after their choice on hyper feminine face and the hyper masculine and masculine face comes afterwards. The female voter respondents yielded higher results

on hyper feminine and feminine faces over hyper masculine and masculine faces because of their sex biases on being women.

PREFERENCE BY FACIAL CHARACTERISTICS

TABLE 4. FACIAL PREFERENCE OF MALE AND FEMALE VOTERS AMONG THE MASCULINE AND HYPER MASCULINE MORPHED FACES OF PRESUMPTIVE CANDIDATES

Voter's Gender		Candidates			Interpretation
		Masculine	Hyper Masculine	Total	
Female	Observed	80.0	108.0	188.0	
	Expected	80.8	107.2		
Male	Observed	100.0	131.0	231.0	
	Expected	99.2	131.8		
Sum		180.0	239.0	419.0	
					NOT
X² Female		0.01	0.01	0.02	SIGNIFICANT
X² Male		0.01	0.00		
Degree of Freedom	1				
Critical Value	3.841				

Table 4 shows that both the male and female voter respondents do not significantly prefer hyper masculine over masculine faces. There is no significant difference between masculine and hyper masculine face because it is perceived that hypermasculine faces (Gangestad & Simpson, 2000) are supported by evidence that men's masculine traits signal both positive and negative attributes. Hyper masculine male faces are ascribed antisocial traits such as low warmth, low emotionality, dishonesty, low cooperativeness, and poor quality as a parent (Perrett et al., 1998). Hyper masculine faced men are also perceived to have more interest in short-term than long-term relationships (Kruger, 2006), and hypermasculine faces have more short-term, but not long-term, partners than average masculine men (Rhodes, Simmons, & Peters, 2005). Because human masculinity is associated with both benefits and costs, voters may vary in the extent to which they prefer hypermasculinity versus average masculinity in male faces (Little et al., 2007). This explains why hyper masculine face is not significantly preferred against masculine face.

Furthermore, this finding is consistent with those of studies demonstrating that factors that are known to influence women's preferences for masculinity (e.g., menstrual cycle phase, for re-

views see Jones et al., 2008a and Thornhill and Gangestad, 2008) may have a bearing on women's preferences for different markers of men's masculinity, similarly. For example, women show stronger preferences for masculinity during the fertile phase of the menstrual cycle than at other times when judging the attractiveness of men's faces (Jones et al., 2005; Penton-Voak et al., 1999; Welling et al., 2007). However, the researchers did not administer the cognizance of women's menstrual cycle. But the effect of this factor might have affected the results of inisgnificance.

TABLE 5. FACIAL PREFERENCE OF MALE AND FEMALE VOTERS AMONG THE FEMININE AND HYPER FEMININE MORPHED FACES OF PRESUMPTIVE CANDIDATES

Voter's Gender		Candidate Feminine	Hyper Feminine	Total	Interpretation
Female	Observed	115.0	177.0	292.0	
	Expected	94.0	188.0		
Male	Observed	92.0	157.0	249.0	
	Expected	115.5	231.0		
Sum		103.5	167.0	541.0	
X^2 Female		4.69	0.64	46.2	SIGNIFICANT
X^2 Male		6.00	34.88		
Degree of Freedom	1				
Critical Value	3.841				

TABLE 6. FACIAL PREFERENCE OF MALE AND FEMALE VOTERS ON THE HYPER AND NON-HYPER MORPHED FACES OF PRESUMPTIVE CANDIDATES

Voter's Gender		Candidates Non-Hyper Masculine/ Feminine	Hyper Hyper Masculine/ Hyper Feminine	Total	Interpretation
Female	Observed	195.0	285.0	480.0	
	Expected	240.0	240.0		
Male	Observed	192.0	288.0	480.0	
	Expected	240.0	240.0		
Mean		387.0	573.0	960.0	
X^2 Female		8.44	8.44	36.9	SIGNIFICANT
X^2 Male		12.00	8.00		
Degree of Freedom	1				
Critical Value	3.841				

Table 5 shows that both the male and female voter respondents significantly prefer hyper feminine face over feminine faces.

This result supports the findings of Perret et al. (1994) in his study that both male and female participants demonstrated very

strong preferences for the femininised versions of the faces. Intriguingly, both male and female participants also preferred the femininised male faces to the masculinised ones. Specifically, both male and female faces, exaggerated feminine characteristics are attractive. Moreover, another study by Rennels et al. (2008) also observed general preferences for femininity when judging the attractiveness of the faces manipulated in sexual dimorphism of 2D face shape. Further studies also found out that men typically demonstrate strong preferences for feminine characteristics in women's faces (Jones et al., 2007; Perrett et al., 1998; Welling et al., 2008)

Table 6 shows that both male and female voter respondents significantly prefer hyper feminine face and hyper masculine face over the feminine and masculine faces.

The preference on the hyper masculine and hyper feminine face agrees with the findings of Perret, et.al (1994). Perrett, et al. demonstrated that attractive faces are not 'only average' as some researchers who proposed the Averageness Hypothesis of attractiveness had suggested but that some exaggerated facial characteristics are attractive.

This further supports the study of Johnston (1999) that respondents universally preferred the faces at the more extreme ends of the spectrum. Accordingly, the characteristics found in hyper faces are the "hormone markers" that appear in puberty and distinguish the sexes. Testosterone causes boys' lower jaws to grow long and broad; estrogen makes girls' lips swell with fat deposits. The markers provide unconscious cues to good mating material—health and fertility.

TRAITS ATTRIBUTED TO THE FACIAL CHARACTERISTICS OF THE WINNING MORPHED FACES OF PRESUMPTIVE CANDIDATES

The respondents were asked why they preferred the hyper masculine face. The voter respondents described the face in single word or by phrase. From the survey with the voter respondents,

the following themes or category are drawn: Physical Facial Quali-
ties, Leadership Approach, People Oriented Qualities, Qualities
Relating to Credibility, Moral Traits, Dominant or Aggressive
Qualities, Religious/Cultural Reasons, Qualities Related to Work,
Qualities Referring to Self-Conduct, Qualities Attributed to
People, and Qualities Pertaining to People's Expectation.

These traits are what the voter respondents have associated to
the hyper masculine face. Presumably, these traits are also the
descriptions that they look for in a political candidate. These
traits are what the voter respondents have associated to the hyper
feminine face. This facial attribution further reveals the charac-
teristics that the people look for in a political candidate.

This finding supports the study of Zebrowitz. Accordingly,
social stereotypes create their own reality through a multistep
causal mechanism: (a) Facial appearance elicits social stereotypes
or expectations for the behavior and traits of attractive and unat-
tractive targets, (b) these expectations are acted on by the per-
ceiver in the form of differential judgments and treatment of
attractive and unattractive targets, (c) differential judgment and
treatment cause the development of differential behavior and
traits in attractive and unattractive targets, and (d) attractive and
unattractive targets internalize differential judgment and treat-
ment and eventually develop differential behavior and self-views
(Darley & Fazio, 1980; and Zebrowitz, 1997). This means that
the voters' judgments and facial stereotypes influences their be-
haviors thus, affects their decisions on their votes.

The results of the trait attributions on the faces further proved
Galton's findings on morphing methods and face averaging.
Galton were able to identify multiple cues that covary with social
attributions, more trustworthy when more feminine, and more
dominant when more masculine. This inquiry was able to yield
the same results for the face judgments on the hyper feminine
and hyper masculine faces.

Moreover, some studies also found the same results such as
sex and race can both lead to the attribution of stereotypical traits.

Male candidates are perceived as tough, aggressive, self-confident and assertive, while their female counterparts are described as warm, compassionate, people-oriented, gentle, kind, passive, caring and sensitive (Huddy and Terkildsen 1993a, 1993b; Leeper 1991; Rosenwasser and Dean 1989). Similarly, this study also yielded the same result on the facial attributions. Hyper masculine face was also similarly described as tough and assertive. On the same breadth, this study also gained the same result that hyper feminine face shows more sensitivity and caring perception.

CONCLUSIONS

The facial morphometric analysis of the 33 senatorial candidates determined the facial characteristics of the winning and losing faces in election. The study shows that the 2013 elected senators possess facial features of a more masculine face for male candidates and more feminine face for female candidates as compared to the losing candidates. This also shows that the voters are likely to prefer facial appearances that are more hyper in features. Both the male and female respondents shared preference on hyper faces, specifically on hyper feminine face. The respondents have further associated positive traits to their facial preferences.

These findings support the theory of Biological Determinism explained by Allen (2015) which states that voters are likely to vote based on gut-feeling in the absence of credible basis. The theory on Good Genes Hypothesis further proved that exaggerated faces are more preferred by the voters when facial cues are the most available information. Moreover, this study challenged the theory of Galton on the Averageness Hypothesis of Attractiveness which claimed that attractive faces are the ones that are average. In contrary, this research showed that hyper faces, instead of average are more preferred by the voters. This is supported by the study of Perret et al (1994) that attractive faces are not average but exaggerated faces or hyper faces.

The inquiry on facial preferences of the electorate also tells a lot about the society and the level of political knowledge the electorate has. This study contributes in explaining the political behavior of the electorate in times when the political knowledge is low. This signifies the need to advance the dissemination of political information and to re-strategize the methods of campaigns to make the information more accessible to the electorate.

From the findings and analysis of this study, it can be inferred that facial appearance of the candidates serves as a cue in molding the electoral decisions of the voters that have low political information. It further shows that the theories and methods on natural sciences such as Biology can be adopted in social sciences to explain certain social, political and psychological phenomena. While the marriage of these two very different fields can be further developed, this study effectively employed Geometric Morphometric as a useful tool in determining the chances of winning of the presumptive candidates and even actual candidates in the elections.

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