

Table S1. Landmarks for facial analysis

Landmarks	Abbreviation	Definitions
Trichion	Tr	Lowest point of hairline in center of face
Soft tissue glabella	G'	Midpoint between center of eyebrows, the transecting point of the vertical line
Soft tissue nasion	N'	Midpoint of transverse line of highest points of palpebrae superius
Ala	Al	Lateral portion of each alar curvature, left and right
Pronasale	Pn	Furthest anterior extension of the nose (tip of the nose)
Subnasale	Sn	Central junction of the columella and the upper cutaneous lip
Soft tissue A-point	A'	Posterior midpoint of the philtrum.
Labiale superius	Ls	Midpoint of the upper vermilion line
Stomion	St	Midpoint of the junction between the upper and lower lip
Cheilion	Ch	The point located at each labial commissure, left and right
Labiale inferius	Li	Midpoint of the lower vermilion line
Soft tissue B-point	B'	Posterior midpoint on the labiomenal soft tissue contour
Pogonion	Pg'	Anterior midpoint of the chin.
Soft tissue gnathion	Gn'	Constructed point formed by the intersection of the Sn–soft tissue pogonion line and the chin-throat line
Soft tissue menton	Me'	Inferior midpoint on the soft tissue chin
Cervical point	C	Neck-throat junction: the junction of the inferoposterior extension of the soft tissue chin and the neck
Palpebrale superius	Ps	Highest point in the midportion of the free margin of each upper eyelid, left and right
Pupil	P	Hole located in the center of the iris of the eye, left and right
Palpebrale inferius	Pi	Lowest point in the midportion of the free margin of each lower eyelid, left and right

Exocanthion	Ex	Lateral point of palpebral fissure, left and right
Endocanthion	En	Medial point of eye fissure, left and right
Tragion	T	Point located at the upper margin of each tragus, left and right
Zygion	Zy	Most lateral zygomatic point of frontal face, left and right
Soft tissue gonion	Go'	Lateral point on the soft tissue contour of each mandibular angle
Soft tissue C point	C'	Meeting point of the straight line from Tr and T and the horizontal plane passing through G', left and right
Soft tissue D point	D'	Meeting point of the straight line from each T and C and the horizontal plane passing through the subnasale, left and right
Soft tissue E point	E'	Meeting point of the straight line from T and C and the horizontal plane passing through the menton, left and right

Table S2. Definition of measures in three-dimensional scanned images

	Names of measures	Definition	Measurement
Absolute Length	H-facial	Total facial height	Tr–Me'
	H-upper	Upper facial height	Tr–G'
	H-middle	Middle facial height	G'–Sn
	H-lower	Lower facial height	Sn–Me'
	H-chin	Chin height	St–Me'
	H-nose	Nasal height	N'–Sn
	H-lip	Lip height	Ls–Li
	H-eye	Eye height	Ps–Pi
	W-facial	Facial width	Zy–Zy
	W-lower facial	Lower facial width	Go' - Go'
	W-eye	Eye width	Ex–En
	W-intercanthal	Intercanthal width	En–En
	W-nose	Nasal width	Al–Al
	W-lip	Lip width	Ch–Ch
Angle	A-nasofrontal	Nasofrontal angle	Angle of (G'–N'–Pn)
	A-labiomental	Labiomental angle	Angle of (Li–B'–Pg')
	A-nasofacial	Nasofacial angle	Angle of ([G'–Pg']–[N'–Pn])
	A-nasomenta	Nasomenta angle	Angle of (N'–Pn–Pg')
	A-nasolabial	Nasolabial angle	Angle of (Pn–Sn–Ls)
Volume Proportion	PV-upper	Upper facial volume/Total facial volume	Volume of (Tr–C'–G')/(Tr–T–C–Me') x 100
	PV-middle	Middle facial volume/Total facial volume	Volume of (G–C–T–D'–Sn)/(Tr–T–C–Me') x 100
	PV-lower	Lower facial volume/Total facial volume	Volume of (Sn–D'–E'–Me')/(Tr–T–C–Me') x 100
Length Proportion	P-facial index	Total facial height/Total facial width	(Tr–Me')/(Zy–Zy) x 100
	P-lower facial index	Total facial height/Lower facial width	(Tr–Me')/(Go' - Go') x 100
Height Proportion	PH-upper	Upper facial height/Total facial height	(Tr–G')/(Tr–Me') x 100

	PH-middle	Middle facial height/Total facial height	$(G'-Sn)/(Tr-Me') \times 100$
	PH-lower	Lower facial height/Total facial height	$(Sn-Me')/(Tr-Me') \times 100$
	PH-chin	Chin height/Total facial height	$(St-Me')/(Tr-Me') \times 100$
	PH-nose	Nasal height/Total facial height	$(N'-Sn)/(Tr-Me') \times 100$
	PH-lip	Lip height/Total facial height	$(Ls-Li)/(Tr-Me') \times 100$
	PH-eye	Eye height/Total facial height	$(Ps-Pi)/(Tr-Me') \times 100$
	PW-eye	Eye width/Total facial width	$(Ex-En)/(Zy-Zy) \times 100$
Width Proportion	PW-intercanthal	Intercanthal width/Total facial width	$(En-En)/(Zy-Zy) \times 100$
	PW-nose	Nasal width/Total facial width	$(Al-Al)/(Zy-Zy) \times 100$
	PW-lip	Lip width/Total facial width	$(Ch-Ch)/(Zy-Zy) \times 100$

Table S3. Comparison of variables between group I (Miss Korea) and group II (Miss Paraguay)

	Names of measures	Group I (N = 43)		Group II (N = 22)		Statistical significance P
		Mean	SD	Mean	SD	
Absolute Length	H-facial	187.66	5.37	177.53	10.97	<0.001*
	H-upper	55.03	4.26	49.64	6.38	<0.001*
	H-middle	72.36	3.65	66.38	3.52	<0.001*
	H-lower	60.26	2.53	61.51	4.30	0.146
	H-chin	41.66	2.04	41.70	2.74	0.954
	H-nose	54.56	2.84	49.91	2.94	<0.001*
	H-lip	17.33	1.91	17.86	2.64	0.362
	H-eye	11.55	1.03	10.87	0.95	0.012*
	W-facial	141.30	3.35	134.60	4.59	<0.001*
	W-lower facial	119.02	3.72	116.79	3.77	0.026*
	W-eye	28.01	1.22	28.83	1.42	0.019*
	W-intercanthal	34.36	1.86	30.99	2.33	<0.001*
	W-nose	38.05	1.82	38.35	1.71	0.527
	W-lip	43.93	2.45	45.16	2.78	0.073
	Angle	A-nasofrontal	147.19	4.35	142.36	4.94
A-labiomental		147.18	8.14	139.12	9.05	0.001*
A-nasofacial		28.79	2.42	33.18	3.72	<0.001*
A-nasomental		134.69	3.90	128.92	5.39	<0.001*
A-nasolabial		118.40	6.27	118.76	8.04	0.845
Volume Proportion	PV-upper	14.91	2.01	12.86	3.03	0.002*
	PV-middle	52.96	2.20	49.80	1.40	<0.001*
	PV-lower	32.11	2.42	37.34	3.30	<0.001*
Length Proportion	P-facial index	132.87	4.61	132.02	8.71	0.607
	P-lower facial index	157.81	6.39	152.17	10.67	0.010*
Height Proportion	PH-upper	29.30	1.81	27.90	2.64	0.014*
	PH-middle	38.56	1.81	37.44	1.46	0.014*

	PH-lower	32.12	1.27	34.67	1.60	<0.001*
	PH-chin	22.20	1.02	23.52	1.37	<0.001*
	PH-nose	29.08	1.42	28.17	1.74	0.027*
	PH-lip	9.24	1.05	10.04	1.21	0.008*
	PH-eye	6.15	0.54	6.09	0.71	0.682
	PW-eye	19.84	1.03	21.43	1.04	<0.001*
Width Proportion	PW-intercanthal	24.33	1.34	23.01	1.44	0.001*
	PW-nose	26.94	1.40	28.52	1.46	<0.001*
	PW-lip	31.11	1.85	33.56	1.95	<0.001*

*Statistically significant