

Appendix 1. Descriptive statistics for the facial colour characteristics and preference ratings for the Caucasian dataset (CA) and Chinese dataset (CN). t-test values for which $P > 0.05$ are shown in bold.

	Mean (SD)		t-test
	CA	CN	
Facial colour characteristics			
L*	60.63 (2.06)	55.92 (2.10)	<0.001
a*	8.10 (1.26)	8.72 (1.16)	0.025
b*	15.25 (2.06)	18.55 (1.50)	<0.001
Cheek-a*	9.91 (1.70)	10.04 (1.91)	0.741
Periorbital-L*	54.77 (2.87)	53.07 (2.11)	0.003
MCDM-Cheek	2.48 (0.32)	2.40 (0.31)	0.237
MCDM	2.58 (0.21)	2.51 (0.22)	0.169
Eyes-C-L*	0.15 (0.03)	0.18 (0.03)	<0.001
Eyes-C-a*	0.21 (0.09)	0.13 (0.07)	<0.001
Eyes-C-b*	0.14 (0.07)	0.21 (0.04)	<0.001
Eyes-△E	15.02 (2.78)	18.25 (2.47)	<0.001
Brows-C-L*	0.16 (0.06)	0.13 (0.05)	0.010
Brows-C-a*	0.06 (0.05)	0.13 (0.08)	<0.001
Brows-C-b*	0.06 (0.04)	0.18 (0.04)	<0.001
Brows-△E	16.32 (5.18)	13.67 (4.17)	0.014
Mouth-C-L*	0.12 (0.02)	0.10 (0.02)	0.001
Mouth-C-a*	0.41 (0.06)	0.33 (0.06)	<0.001
Mouth-C-b*	0.14 (0.05)	0.17 (0.04)	0.002
Mouth-△E	17.84 (2.64)	15.26 (2.13)	<0.001
Preference ratings			
Attractiveness	3.92 (0.87)	4.04 (0.83)	
Healthiness	4.09 (0.96)	4.50 (0.82)	
Age	25.59 (2.96)	26.59 (2.51)	

Appendix 2. Zero-order Pearson correlations between facial colour characteristics and preference ratings. CN results are below the diagonal and CA results are above the diagonal. The different coloured boxes show correlation at $p < 0.001$, $p < 0.01$ and $p < 0.05$.

				average/local skin colour					skin colour variation		facial colour contrast												
	Attractiveness	Healthiness	Age	L*	a*	b*	Cheek-a*	Periorbital-L*	MCDM-Cheek	MCDM	Eyes-C-L*	Eyes-C-a*	Eyes-C-b*	Eyes-ΔE	Brows-C-L*	Brows-C-a*	Brows-C-b*	Brows-ΔE	Mouth-C-L*	Mouth-C-a*	Mouth-C-b*	Mouth-ΔE	
	Attractiveness		0.912	-0.343	-0.267	-0.103	0.338	-0.036	-0.250	-0.300	-0.254	0.224	0.027	0.156	0.190	0.111	-0.083	0.190	0.104	-0.321	-0.037	0.365	-0.216
	Healthiness	0.927		-0.293	-0.351	-0.046	0.381	0.001	-0.359	-0.232	-0.363	0.104	0.030	0.098	0.049	0.070	-0.125	0.211	0.045	-0.232	-0.056	0.356	-0.166
	Age	-0.828	-0.818		-0.259	0.262	0.130	0.153	-0.133	0.442	0.457	0.231	-0.184	-0.003	0.192	0.098	0.184	0.102	0.070	-0.168	-0.290	0.128	-0.198
average/local skin colour	L*	0.477	0.415	-0.571		-0.519	-0.425	-0.429	0.715	-0.318	-0.296	-0.203	-0.096	-0.371	-0.088	-0.180	0.209	-0.253	-0.073	0.261	0.651	-0.382	0.414
	a*	-0.377	-0.342	0.415	-0.554		-0.301	0.898	-0.108	0.329	0.193	0.061	0.124	0.024	-0.346	-0.276	-0.130	-0.411	-0.022	-0.616	-0.269	-0.182	
	b*	0.071	0.006	0.072	-0.387	0.153		-0.271	-0.570	0.076	0.104	0.239	0.084	0.543	0.228	0.428	0.239	0.555	0.411	-0.276	-0.048	0.735	-0.159
	Cheek-a*	-0.247	-0.167	0.229	-0.406**	0.881	0.109		-0.095	0.336	0.181	-0.018	0.115	-0.020	-0.039	-0.416	-0.286	-0.139	-0.471	0.070	-0.436	-0.240	-0.040
	Periorbital-L*	0.060	0.034	-0.146	0.538	-0.151	-0.458	-0.156		-0.187	-0.189	-0.121	-0.127	-0.401	0.015	-0.184	0.159	-0.257	-0.119	-0.018	0.222	-0.547	0.066
variation	MCDM-Cheek	-0.369	-0.294	0.373	-0.191	0.134	0.167	0.221	0.052		0.448	0.117	-0.125	0.188	0.115	-0.031	0.256	0.196	-0.079	0.035	-0.305	0.017	-0.068
	MCDM	-0.399	-0.296	0.383	-0.383	0.124	0.194	0.066	-0.195	0.510		0.227	-0.186	0.164	0.221	0.293	0.165	0.252	0.255	-0.109	-0.240	0.137	-0.171
facial colour contrast	Eyes-C-L*	0.151	0.235	-0.095	0.143	-0.279	-0.240	-0.020	-0.088	0.111	-0.036		-0.242	0.330	0.971	0.366	0.309	0.493	0.356	-0.318	-0.147	0.058	-0.250
	Eyes-C-a*	-0.089	-0.069	0.018	-0.266	0.324	0.270	0.303	-0.076	0.246	0.196	-0.196		0.465	-0.159	-0.117	-0.198	-0.225	-0.117	0.241	-0.033	-0.141	0.190
	Eyes-C-b*	0.310	0.350	-0.409	0.119	-0.164	0.174	0.017	-0.267	0.055	-0.150	0.239	0.470		0.393	0.262	0.089	0.315	0.235	-0.177	-0.195	0.237	-0.153
	Eyes-ΔE	0.273	0.338	-0.254	0.337	-0.383	-0.269	-0.093	0.059	0.079	-0.120	0.963	-0.151	0.356		0.360	0.376	0.481	0.365	-0.332	-0.107	0.004	-0.236
	Brows-C-L*	-0.265	-0.215	0.351	-0.181	-0.106	-0.195	-0.097	0.176	0.234	0.102	0.314	-0.265	-0.334	0.206		0.253	0.452	0.990	-0.300	0.079	0.367	-0.215
	Brows-C-a*	-0.472	-0.406	0.575	-0.380	-0.021	-0.292	-0.050	-0.042	0.169	0.180	0.248	-0.202	-0.428	0.083	0.761		0.206	0.278	-0.125	0.163	0.075	0.024
	Brows-C-b*	-0.238	-0.159	0.277	0.012	-0.262	-0.421	-0.196	0.361	0.184	0.110	0.295	-0.201	-0.328	0.234	0.681	0.798		0.420	-0.265	-0.063	0.230	-0.173
	Brows-ΔE	-0.211	-0.168	0.307	-0.085	-0.181	-0.220	-0.159	0.262	0.239	0.078	0.310	-0.297	-0.354	0.223	0.989	0.750	0.736		-0.267	0.159	0.356	-0.158
	Mouth-C-L*	0.057	0.122	-0.090	0.239	-0.250	-0.242	-0.162	0.106	0.043	0.036	0.369	-0.278	0.002	0.360	0.091	0.058	0.209	0.118		0.495	-0.435	0.915
	Mouth-C-a*	0.526	0.511	-0.535	0.517	-0.635	-0.198	-0.522	0.074	-0.514	-0.360	0.215	-0.500	0.086	0.303	0.014	-0.079	0.125	0.065	0.316		-0.170	0.750
	Mouth-C-b*	0.229	0.171	-0.054	-0.125	-0.174	0.496	-0.189	-0.416	-0.149	0.137	-0.018	-0.180	0.077	-0.029	-0.028	-0.066	-0.197	-0.032	-0.020	0.372		-0.358
	Mouth-ΔE	0.438	0.444	-0.424	0.468	-0.452	-0.082	-0.343	0.050	-0.370	-0.172	0.234	-0.492	0.023	0.296	-0.026	-0.134	0.073	0.027	0.624	0.859	0.470	

p<0.001

p<0.01

p<0.05

$p < 0.001$
 $p < 0.01$
 $p < 0.05$

Appendix 3. Regression lines of significant colour predictors for each facial preference attributes: attractiveness (top), healthiness (middle), and age (bottom). CA results are in the left column and CN results are in the right column. All colour predictors are normalized to z scores for plotting the effects in the same figures.

