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GENERATIONAL AND SEX DIFFERENCES AMONG FILIPINOS IN METRO MANILA IN THEIR PERCEPTIONS OF THE ATTRACTIVENESS OF LIGHT AND DARK-COMPLEXIONED MALE AND FEMALE MODELS

*Monica Renee Policarpio**
Department of Psychology, De La Salle University, 2401 Taft Avenue,
Manila 1004, The Philippines
E-mail: monica.policarpio@dlsu.edu.ph

*Jeconiah Louis Dreisbach***
Department of Filipino, De La Salle University, 2401 Taft Avenue,
Manila 1004, The Philippines
E-mail: jeconiah.dreisbach@dlsu.edu.ph

*Ana Grace R. Masalunga****
Department of Psychology, De La Salle University, 2401 Taft Avenue,
Manila 1004, The Philippines
E-mail: ana.masalunga@dlsu.edu.ph

*Feorillo A. Demeterio III*****
Department of Filipino, De La Salle University, 2401 Taft Avenue,
Manila 1004, The Philippines
E-mail: feorillo.demeterio@dlsu.edu.ph

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ABSTRACT

Filipinos are said to have a higher appreciation for lighter skin complexion than the darker one. By manipulating the skin colours of some digitally created photographs of non-existent models, this article tested this Filipino attitude by surveying 527 respondents from Metro Manila. This research has not only validated the Filipinos' appreciation for lighter skin complexion but also established the differences in how male and female respondents rate the attractiveness of light and dark-complexioned male and female models, as well as the differences in how respondents from Generations X and Z rate the attractiveness of the said clusters of models. This article has established the empirical significance in documenting the appreciation of Filipinos for the lighter skin colour and emphasising that aside from generational and sex variations, the sex variations of the models are major factors as well.

Keywords: Skin colours, Filipinos, generational variation, sociocultural psychology

INTRODUCTION

Discourses on brown skin pride emerged in Philippine popular culture content in the decade of 2010s (Kalaw 2017; Nopuente and Caedo 2019; Binlot 2019). However, media platforms exhibiting these contents contain diverging viewpoints as it also displays skin-whitening goods that further exacerbates the desire of the Filipino to obtain fairer skin (Lasco and Hardon 2020). Research regarding the perspective of Filipinos on skin colour indicated that this fixation and penchant for lighter skin is an actual materialisation of internal racism that has been with the population since colonial times (Natividad 2006; Rondilla 2012; Mendoza 2014).

In the Spanish-speaking world, people are commonly conscious about skin colour as those with dark skin are linked to the lower socioeconomic strata. For Puerto Ricans, people with lighter skin colour mean they are influential and powerful. Hence, they prefer having fairer skin (Winters 2013). Hall (2001) attested that the discrimination of darker-skinned people and the glorification of white skin, both seen as factors in social status, are influences of Spanish colonisation. Even during American colonisation, Filipinos degraded their natural brown skin colour and favoured that of white Americans (Bulloch 2013). This viewpoint extended

to that of Filipino diasporic communities in the United States (U.S.) as they thought having darker skin was a factor in employment discrimination (La Torre 2016).

Illo (1996) and Singson (2017) said that the residue of these colonial influences played a significant factor in the triumph of the Filipino skin whitening industry. A commissioned survey by an international cosmetic brand found that Filipino women from ages 15 to 50 years old use skin whitening products to be accepted in the society that venerates fair-skinned people (Pan 2013).

Existing literature on skin colour bias (Nosek et al. 2005; Smith-McLallen et al. 2006; Rossen et al. 2008) shows that there are both explicit and implicit preferences towards lighter skin over that of darker ones. Beyond racial social perceptions, skin colour preference also extends to aesthetic judgments of facial attractiveness (Little et al. 2011; Cruz 2018).

Contrary to long-established research that shows consistent preference towards light skin, Birdsong et al. (2019) recently found that there are now relatively favourable attitudes towards dark skin colour among students from a southern university in the U.S. However, they interpreted this result as having a possibility of overcompensation of explicitly self-reported attitudes as there is increased awareness of relating skin colour bias to racial discrimination. This may be due to the increased multicultural awareness and sensitivity of the respondents who belong to the younger generation. Furthermore, Sparkman et al. (2016) noted that individuals with increased multicultural exposure have lesser racial prejudice as exhibited in their relative openness. This phenomenon is consistent with Koreans belonging to the younger generation who expressed their openness to change contrary to their relatively more conservative elders (Na and Duckitt 2003). Among the Chinese in particular, there are varying views regarding skin complexion attractiveness. Xie and Zhang (2013) discovered that the younger generation who patronise contemporary Western popular culture find the darker skin colour as a symbol of the luxurious and leisure lifestyle enjoyed only by the affluent few. On the other hand, several studies (Saito et al. 2002; Han et al. 2018) on facial skin tone views among the mainland Chinese found that they prefer decreased yellowness and redness and a strong preference for facial lightness. Chinese Malaysians (Tan and Stephen 2019) and Australians (Pezdirc et al. 2018) associate increased skin yellowness to people having a better health situation.

Our preliminary work on the interactions of sex, intergenerational differences, and aesthetic judgment of facial appearance (Policarpio et al. 2022) has found that lighter skin tones are generally thought to be aesthetically more pleasing than darker ones which gained negative attitudes. As for skin colour bias, we discovered that while both male and female respondents preferred lighter skin tones, males had shown greater interest in it. When it comes to age, those coming from the elder generation thought that having a lighter skin colour is superior to darker skin. On the other hand, those coming from the younger generation do not consider any skin colour to be superior to another. A closer look at the data from the younger generation revealed that the said perspective can be more associated with female respondents. Overall, there were no significant interactions among all three variables.

In accordance with the call of Bettache (2020) to develop cultural psychological studies on skin tones in the Asian context, this study provides a significant contribution to the dynamic perspectives of Filipinos on people's skin colour in this contemporary era. This study aims to further evaluate the generational and sex-based variations on the Filipinos' outlook on the said topic. This article is a continuation of a previous project (Policarpio et al. 2022) in an effort to comprehensively investigate the Filipinos' attitudes that are vital in postcolonial studies, cultural studies, and Philippine psychology.

Statement of the Problem

This study aims to understand the generational and sex-based perspectives of the Filipino urban population on skin colour variations. Earlier qualitative studies show the colonial and socioeconomic rootedness of the Filipino people's preferences towards a fairer skin. However, as established in the previous section, discourses on skin colour recently emerged among Filipinos due to the empowerment of the predominant population's brown skin. Moreover, there is a clear lack of quantitative work on skin colour research in the Philippines. As such, this investigation fulfills the need in the body of knowledge of Philippine cultural studies and social psychology regarding the matter at hand.

Research Objectives

The objective of this article is to empirically and meticulously examine the Filipinos' higher appreciation for lighter complexion and lower appreciation for the darker one, to establish this may be influenced by socially-constructed differences in the respondents' sex (male or female) and generation (Generation X or Z), and on the models' sex (male or female). Furthermore, this article examines if there is an interaction between the variables of the respondents' sex and generation in their appreciation for the light and dark-complexioned male models, and if there is an interaction between the same variables in the respondents' appreciation for the light and dark-complexioned female models.

Hypotheses

The following are the hypotheses of this study:

1a: There is a statistically significant difference in how male and female respondents perceive the attractiveness of dark/light-complexioned models.

1b: There is a statistically significant difference in how male respondents perceive the attractiveness of dark/light-complexioned male and female models.

1c: There is a statistically significant difference in how female respondents perceive the attractiveness of dark/light-complexioned male and female models.

2a: There is a statistically significant difference in how Generations X and Z respondents perceive the attractiveness of dark/light-complexioned models.

2b: There is a statistically significant difference in how Generation X respondents perceive the attractiveness of dark/light-complexioned male and female models.

2c: There is a statistically significant difference in how Generation Z respondents perceive the attractiveness of dark/light-complexioned male and female models.

3: There is significant interaction among the independent variables of sex and generation among the respondents in perceiving the attractiveness of dark/light-complexioned male and female models.

METHODOLOGY

This is a mixed quasi-experiment design where the respondents' Generation (X vs. Z) and sex (female vs. male) are the between-subject factors and the model's skin colour (dark vs. light) and model's sex are within-subject factors. Berkup (2014) defined Generation X as the people born between the years 1965 and 1979. On the other hand, Generation Z were born from 1995 to 2012. For the purposes of this study, data were collected from those born between 1995 and 2000 as they were of legal age to independently take part in the study. There are two sets of stimuli to separate the complexion manipulation of the same photo to prevent respondents from guessing the study hypothesis (Greenwald 1976). Each set of 20 photos are counterbalanced with sex ratio and complexion.

Sample Size Estimate

To estimate the sample size that is enough to detect the effect, we conducted power analysis using G*Power. We used an "A-priori" independent samples *t*-test using Cohen's d of 0.29 (Nosek et al. 2005: 176). The results showed that we needed a minimum of 502 participants to reach 90% statistical power.

Participants

A total of 527 respondents from Metro Manila volunteered and one outlier was removed as identified by the Mahalanobis distance analysis (n = 526). There were a total of 332 Generation Z respondents (n_Z-male = 166, M_Z-male = 21.51, SD_Z-male = 1.35; n_Z-female = 166, M_Z-female = 21.25, SD_Z-female = 1.61) and 194 Generation X respondents (n_X-male = 76, M_X-male = 49.67, SD_X-male = 7.05; n_X-female = 118, M_X-female = 48.47, SD_X-female = 7.08).

As for their ethnolinguisitc group, most of the respondents are Tagalog (76%), followed by Fil-Chinese (8%), Ilocanos (4%), Kapampangan (2%), Bicolano (2%), Ilonggo (2%), and others. Their educational background is mostly college graduates (48%), followed by those currently in undergraduate programmes (40%), a few who finished post-graduate degrees (5%), currently in graduate studies (3%), and others.

Instruments

Stimuli. We collected 20 photographs composed as the target model stimuli. The photos were acquired from random AI-generated images from http://thispersondoesnotexist.com/. The technology used in this image-creation technique is called the generative adversarial network (GAN) which generates realistic images of fictional portraits. The portraits used were of 10 adult males and 10 females, nine females with smiling expressions and nine males with smiling expressions, and one pair of male and females in neutral expressions. The exclusion criteria were wearing accessories such as hairpins and jewellery. The mixed model ANOVA analysis accounted for the stimuli as a random factor to control for the variance of response as a function of the stimuli other than the variables identified in the model. The ethnicity of the generated images was Mediterranean/Hispanic Caucasian where only 80% of female portraits were of the same ethnicity and the remaining 20% was Asian whereas male portraits were Mediterranean/Hispanic Caucasian. The AI was generating a limited range of ethnicity as this was also based on available online extracted data.

Each photograph was scaled to 300 × 300 pixels to allow data collection using mobile devices. Using open-source photoshop software GIMP, we manipulated the stimuli from normal clamp input value level before applying output mapping gamma; actual brightness was mapped based on brightness levels at the top of the scale, 1.00, and we adjusted to 0.38–0.30 for female and male models for dark background and 0.40–0.35 gamma for female and male models with white backgrounds.

These 20 photographs were duplicated and modified to their darker counterparts, making the total number of images used as stimuli 40. We manipulated the colour of the face using the colour balance of red (–3), green (0), and blue (0), reduced the exposure by –1.32, and set the gamma correction by 1.00. We retained the original stimuli for the white skin male and female models. Aside from the skin colour, the hair and eye colours were modified to match or blend with the skin colour to make the portrait look realistic. For white areas in hair, eyes, and lips the exposure was reduced by –1.90 and the gamma correction was set to 1.00. For the white areas in the eyebrows, the exposure was decreased by –1.10 and the gamma correction was set to 1.00. To darken the lips for white stimuli, we reduced the hue by –2, increased the saturation by +37 and reduced the brightness by –55. These duplicates were separated into different sets (A and B). Each set, therefore, has 20 photographs without repeating the same face within the set.

Each respondent was randomly assigned to one set. The stimuli in each set was also randomly ordered to every respondent. Using an independent samples *t*-test, we determined that the attractiveness rating did not vary as a function of the assigned set. This suggests that the random assignment of the sets or blocks, and the randomisation of stimuli in each block are sufficient measures to prevent potential extraneous factors from being introduced in the model such as the order effect of the stimuli. In the main task, the participants were randomly assigned to one set which contained 20 portraits that they would rate by answering the question, "How attractive do you think the person in the photo is?" They rated the attractiveness on each photo using a slider that was coded as –3 as the lowest and +3 as the highest.

Procedure

The conveniently sampled respondents were provided with a link containing the quasi-experimental task online using PsyToolkit (Stoet 2010, 2017). The said link automatically assigned the set randomly to each respondent. The IP address was recorded to prevent multiple entries from one device. It began with an informed consent form, followed by the demographic questionnaire, and lastly, the attractiveness rating of photos. Each photo presented was exposed until a rating response was recorded. There was neither a time limit nor a minimum latency of exposure before a response can be submitted. The full details of the study were disclosed at the end of the experiment.

Ethical Considerations

The authors are certain that the instrument poses no psychological or moral risks on the part of the respondents. In accordance with the ethical standards of research involving human respondents, prior to their actual participation, the authors informed the respondents that they will be participating in socio-psychological research on the perception of attractiveness to publish their findings. The respondents were assured that their answers would be anonymised, and the data of the research would be kept in a secured and confidential database. The explicit consent of the respondents was secured prior to giving them the actual instrument.

Data Analysis

Data obtained from PsyToolkit were exported for planned statistical analysis. We conducted data screening for multivariate outliers using the Mahalanobis distance test (Tabachnick and Fidell 2007) and eliminated one case (n = 526).

To initially determine if we inadvertently incorporated a systematic error based on creating two sets of stimuli, we conducted an independent sample t-test. Findings showed that being randomly assigned to stimuli set A or B did not differ significantly $t(524) = 1.9$, $p = 0.06$, $d = 0.17$, 95% CI [–0.01, 0.34]. We used an open-source R software (The R Foundation 2020) with an afex package (Singmann et al. 2016) in conducting the statistical analyses and data visualisation.

The hypotheses are clustered in three sections. The first cluster is focused on the differences based on the sex of the respondents and the models. H1a to H1c refer to the interaction effect between the complexion and sex of models, and the sex of the respondents in predicting attractiveness rating. In the mixed model analysis of variance, the H1a to H1c findings were tested by having a statistically significant three-way interaction of the said variables. To test H1a, the post hoc test should show differences in attractiveness rating on dark and light-complexioned models. This can also be observed in a post hoc analysis of significant two-way interaction effects of respondents' sex and the model's complexion on attractiveness rating. To test H1b and H1c, the post hoc test in the three-way interaction effect should show differences in attractiveness rating among male and female respondents, respectively, between dark and light-complexioned models.

The second cluster of hypotheses is focused on the differences based on the generations. H2a to H2c refer to the three-way interaction effect between the skin complexion and sex of models, and the generation of the respondents in predicting attractiveness rating. To test H2a, the post hoc test should show differences in attractiveness rating on dark and light-complexioned models among different generations. This can also be observed in a post hoc analysis of significant two-way interaction effects of generation and complexion on attractiveness rating. To test H2b and H2c, the post hoc test should show differences in attractiveness rating between dark and light-complexioned models among Generations X and Z, respectively. Finally, to test H3, we need to get a statistically significant four-way interaction effect between the sex and

generation individual difference of respondents and the sex and skin complexion of models.

RESULTS AND DISCUSSION

A four-way mixed design ANOVA was conducted to evaluate the effects of generation and sex as between-subject factors and models' skin colour and sex as within-subject factors on attractiveness rating. Analyses were conducted using the afex package in R. Main effects were all statistically significant. Female respondents, and Generation X in general, are more generous in rating attractiveness compared to males and Generation Z, respectively [sex: $F(1,522) = 24.28$, $p < 0.001$, $\eta_p^2 = 0.04$; generation: $F(1,522) = 17.37$, $p < 0.001$, $\eta_p^2 = 0.03$]. Fairer models are more preferred in general [$F(1,522) = 65.01$, $p < 0.001$, $\eta_p^2 = 0.11$] and female models are rated to be more attractive than males [$F(1,522) = 243.17$, $p < 0.001$, $\eta_p^2 = 0.32$]. Table 1 lists the findings for the mixed ANOVA on sex, generation, model's sex, and model's skin colour predicting attractiveness.

Table 1: Mixed ANOVA on sex, generation, model's sex and model's skin colour predicting attractiveness

Predictor	df_{Num}	df_{Den}	F	p	η_p^2
(Intercept)	1	522	366.32	0.000	0.41
R Sex	1	522	24.28	0.000	0.04
R Generation	1	522	17.37	0.000	0.03
M Complexion	1	522	65.01	0.000	0.11
M Sex	1	522	243.17	0.000	0.32
R Sex*R Generation	1	522	0.00	0.992	0.00
R Sex*M Complexion	1	522	16.48	0.000	0.03
R Generation*M Complexion	1	522	33.02	0.000	0.06
R Sex*M Sex	1	522	0.24	0.624	0.00
R Generation*M Sex	1	522	25.65	0.000	0.05
M Complexion*M Sex	1	522	0.42	0.516	0.00
R Sex*R Generation*M Complexion	1	522	0.03	0.858	0.00
R Sex*Generation*M Sex	1	522	14.12	0.000	0.02
R Sex*M Complexion*M Sex	1	522	8.41	0.004	0.02
R Generation*M Complexion*M Sex	1	522	3.79	0.052	0.01
R Sex*R Generation*M Complexion*M Sex	1	522	2.84	0.093	0.00

Notes: R = Respondent; M = Model

Differences Based on Models' Sex

For H1a, the focal point of comparison is between the dark and light-complexion of male and female models. To test this hypothesis, a two-way interaction effect between the models' sex and complexion in predicting attractiveness rating must be observed.

The findings show a null result [$F(1,522) = 0.42$, $p = 0.52$, $\eta_p^2 = 0.00$]. The Bonferroni estimated means pairwise comparison suggests that there is consistency in the preference for light-complexion on both male and female models, and consistency in the higher attractiveness rating to females relative to males as shown in Figure 1 and Table 2.

Table 2: H1a: Estimated means comparison on how the dark/light-complexioned male and female models are rated as attractive

Independent variable	Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Female model	0.91	1.19	0.04	(854) –7.25	< 0.001	–0.50	–0.63	–0.36
Male model	0.43	0.69	0.04	(854) –6.58	< 0.001	–0.45	–0.59	–0.31

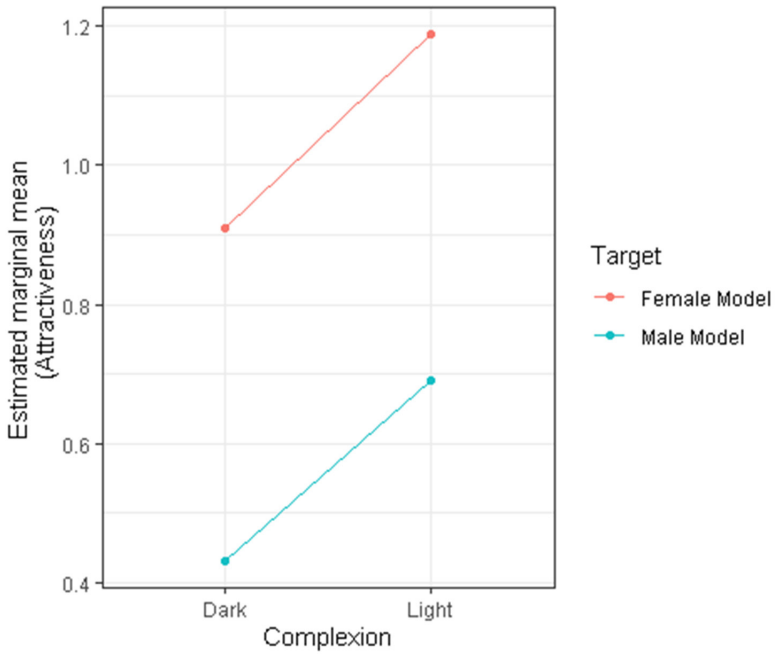

Figure 1: H1a: Attractiveness ratings of dark/light-complexioned male and female models.

Differences Based on Respondents' Sex

For H1b to H1c, the focal point of comparison is the sex difference point of view of the respondents among light-complexioned male and female models. In testing H1b, the planned pairwise comparison between the light-complexioned male and female models as rated by male respondents is examined from the statistically significant three-way interaction effect of respondents' sex, models' skin colour, and models' sex [$F(1,522) = 8.41$, $p = 0.004$, $\eta_p^2 = 0.02$].

Male Respondents' Perception of the Attractiveness of the Dark/Light-complexioned Male and Female Models

Table 3: H1b to H1c: Estimated means comparison on how male and female respondents rate the attractiveness of dark/light-complexioned male and female models

Independent variable		Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Male respondent	Female model	0.60	1.08	0.06	(854) −8.10	< 0.001	–0.55	–0.69	–0.42
	Male model	0.16	0.51	0.06	(854) −5.68	< 0.001	–0.39	–0.52	–0.25
Female respondent	Female model	1.21	1.30	0.05	(854) −1.74	**0.08**	–0.12	–0.25	0.02
	Male model	0.69	0.87	–0.05	(854) −3.50	<0.001	–0.24	–0.37	–0.10

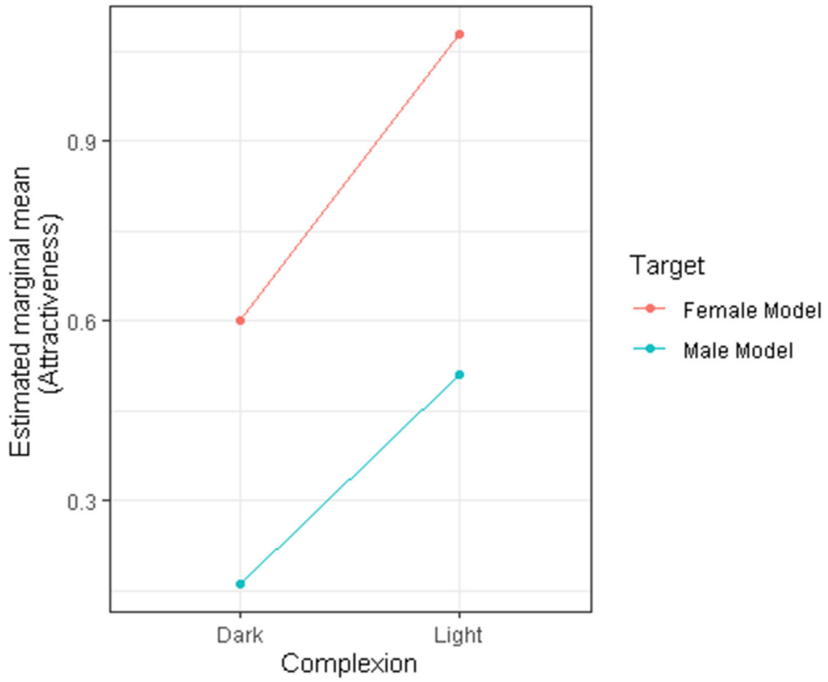

Figure 2: Male respondents' attractiveness rating towards male and female models.

As illustrated in Figure 2, pairwise contrasts of estimated means using the Bonferroni test suggest that males find light-complexioned male and female models more attractive than their darker counterparts. Table 3 shows the estimated means and standard deviation among the independent variables. This result empirically establishes that male respondents conform to the general perception that Filipinos have a higher appreciation for lighter skin complexion than the darker one. The same result is also mentioned in the authors' earlier study (Policarpio et al. 2022). This finding reveals that male respondents value lighter skin complexion more in both the male and female bearers of such complexion.

Female Respondents' Perception of the Attractiveness of the Dark/Light-complexioned Male and Female Models

Likewise, for H1c, female respondents rate light-complexioned male models as more attractive compared to dark-complexioned male models. In contrast, they have no difference in the attractiveness judgment between light and dark-complexioned female models. Table 3 and Figure 3 show the empirical data and its visualisation.

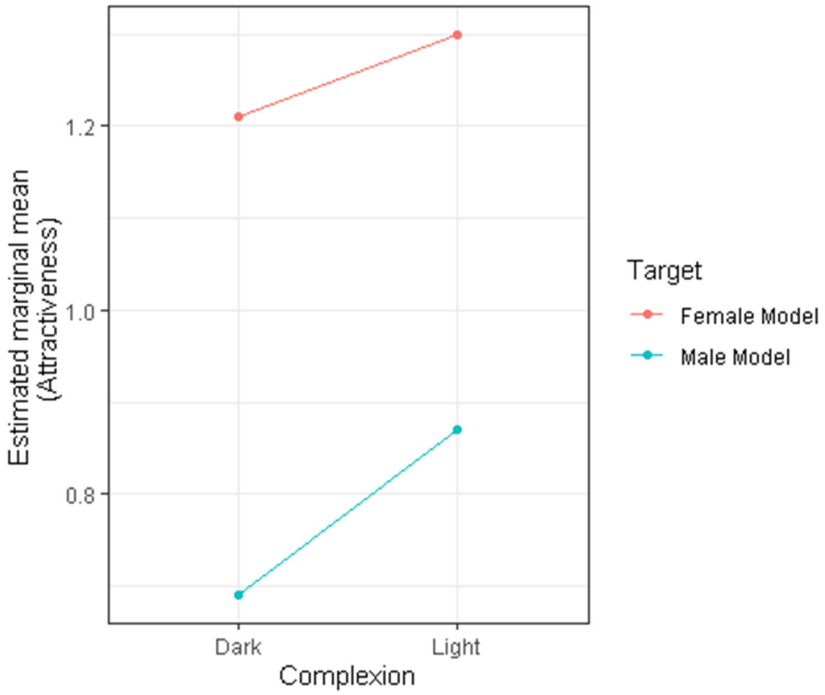

Figure 3: Female respondents' attractiveness rating towards male and female models.

This result is partly in contrast to that of Asian females, specifically Korean women, for they are only attracted to light-skinned people (Na and Duckitt 2003). Unlike in the Philippine popular culture wherein actors and public figures with relatively dark complexions are already gaining popularity and respect, Korean actors and idols are still frequently lightening their skin and actively promoting whitening products (Pollock et al. 2021). This result changes the general perception that Filipinos have a higher appreciation for lighter skin complexion than the darker one, in the sense that such appreciation has a differentiation based on the sex of the respondents and sex of the model. Whereas the general perception is empirically established to be true for the male respondents on both male and female models, such general perception is true only for the female respondents on male models. This finding even negates the "dark" aspect of the popular idea that females prefer "tall, dark, and handsome" males.

Differences Based on Respondents' Generation

For H2a, the focal point of comparison is between the dark and light complexion of models according to Generations X and Z. To test this hypothesis, a two-way interaction effect between the models' complexion and respondents' generation in predicting attractiveness rating must be observed.

The findings show a statistically significant two-way interaction between respondents' generation and models' complexion on attractiveness rating [$F(1,522) = 33.02$, $p < 0.001$, $\eta_p^2 = 0.06$]. The Bonferonni test estimated means pairwise comparison suggests that there is a preference for light complexion among Generation X but not Generation Z as shown in Figure 4 and Table 4.

Table 4: H2a: Estimated means comparison on how Generations X and Z rate the attractiveness of dark/light-complexioned models

Independent variables	Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Generation X	0.75	1.22	0.05	(522) −8.62	< 0.001	0.75	–0.93	–0.58
Generation Z	0.58	0.66	0.04	(522) −1.94	**0.05**	0.17	–0.34	0.00

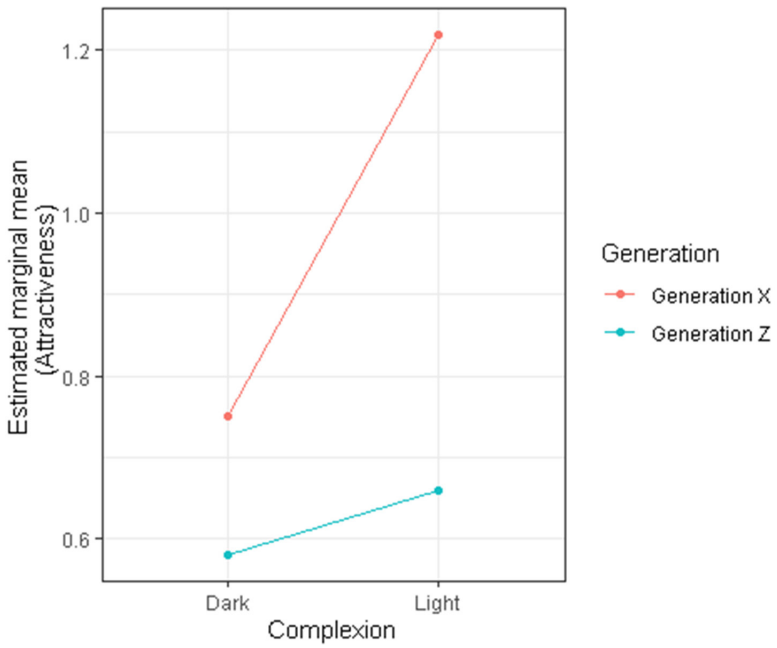

Figure 4: H2a: Attractiveness rating of dark/light-complexioned male and female models by Generations X and Z.

Differences Based on Respondents' Generation and Models' Sex

For H2b and H2c, the focal point of comparison is the difference point of view according to the generational differences of the respondents between light-complexioned male and female models. In testing H2b, the planned pairwise comparison between the light-complexioned male and female models as rated by Generation X respondents are examined from the statistically significant two-way interaction effects of respondents' generation and models' complexion [$F(1,522) = 33.02$, $p < 0.001$, $\eta_p^2 = 0.03$]. The three-way interaction effect is marginal to significant [$F(1,522) = 3.79$, $p = 0.05$, $\eta_p^2 = 0.01$] but suggests the same generational differences trend. Table 5 and Figures 5 and 6 show the empirical data and its corresponding visualisation.

Table 5: H2b and H2c: Estimated means comparison on how Generations X and Z respondents rate the attractiveness of dark/light-complexioned male and female models

Independent variable		Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Generation X	Female model	0.93	1.37	0.06	(854) −6.97	<0.001	–0.48	–0.61	–0.34
	Male model	0.57	1.07	0.06	(854) −7.81	<0.001	–0.53	–0.67	–0.40
Generation Z	Female model	0.88	1.01	0.05	(854) −2.78	<0.01	–0.19	–0.32	–0.06
	Male model	0.28	0.31	0.05	(854) −0.55	**0.59**	**–0.04**	–0.17	0.10

Generation X Respondents' Perception of the Attractiveness of the Dark/Light-complexioned Male and Female Models

As illustrated in Table 5 and Figure 5, post hoc analysis using the Bonferroni test suggests that Generation X in general finds light-complexioned male and female models more attractive than dark-complexioned male and female models.

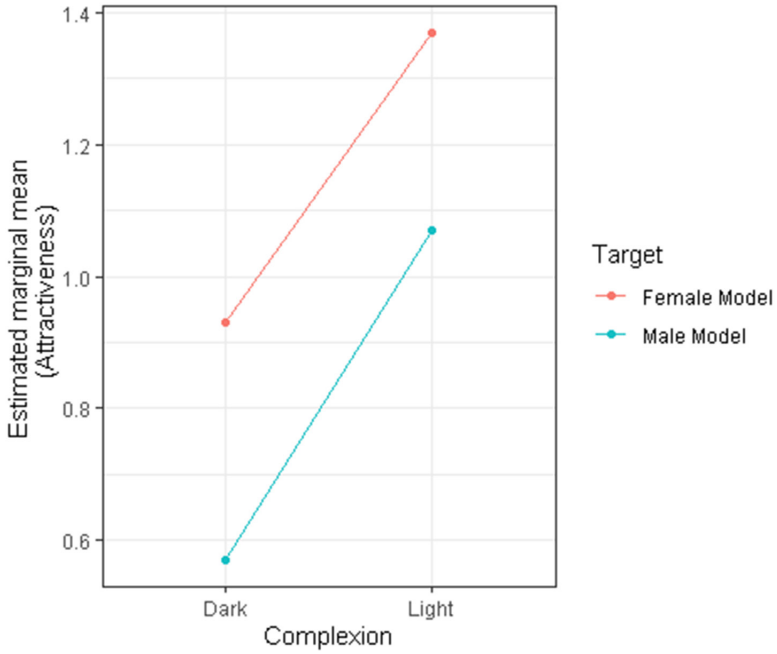

Figure 5: Generation X respondents' attractiveness rating of male and female models.

This result empirically establishes that Generation X respondents conform to the general perception that Filipinos have a higher appreciation for lighter skin complexion than the darker one. The same result is reported in the authors' earlier study (Policarpio et al. 2022). This result is expected in the sense that the older generation is more immersed in the traditional bias that having fairer skin is linked to the notion of being part of the higher social strata, an influence of Spanish and American colonisation. This finding reveals that Generation X respondents value lighter skin complexion more in both the male and female bearers of such complexion.

Generation Z Respondents' Perception of the Attractiveness of the Dark/Light-complexioned Male and Female Models

In H2c, Generation Z respondents, in general, find light-complexioned female models as more attractive than dark-complexioned female models

but have an equal liking for both light and dark-complexioned male models. Table 5 presents the empirical data while Figure 6 depicts its corresponding data visualisation.

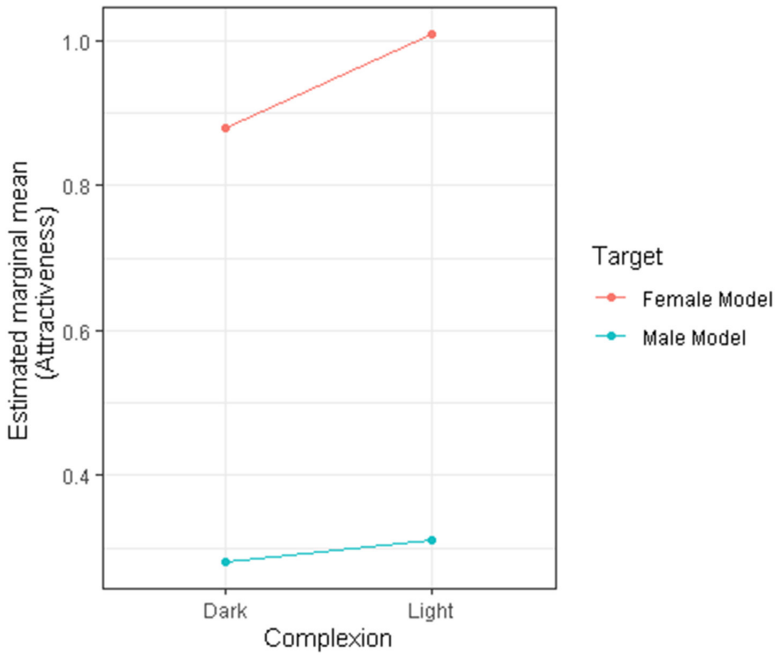

Figure 6: Generation Z respondents' attractiveness rating of male and female models.

Contrary to the discussion on the Generation X respondents' cultural viewpoint, the authors posit that Generation Z's more extensive and intensive exposure to contemporary popular culture, wherein inclusivity is being promoted among all races, shaped the disposition of the younger generation Filipinos to be more accepting of darker complexioned people. Moreover, the respondents of this study, who were based in Manila, were exposed to a cosmopolitan education system that accepts students from various Middle Eastern and African countries (Rehal 2015). As such, this relative shift towards being attracted to darker complexioned people is expected by the researchers. This result modifies the general perception that Filipinos have a higher appreciation for lighter skin complexion than the darker one, in the sense that such appreciation has a differentiation based on the generation of the respondents and sex of the model. Whereas the general perception is empirically established to be true for the Generation X respondents for both male and female models, such general perception is true only for the Generation Z respondents for male models.

Differences Based on Respondents' Sex and Generation, and Models' Sex

Finally, we have found a null result on the four-way interaction effect between the respondents' sex, respondents' generation, models' skin colour, and models' sex in predicting attractiveness rating [$F(1,522) = 2.84$, $p = 0.09$, $\eta_p^2 = 0.00$]. The planned Bonferroni cross-comparisons between the variables are presented in Table 6 and Figure 7.

Table 6: H3a and H3b: Estimated means comparisons between the respondents' generational and sex-based independent variables on how they rate the attractiveness of dark/light-complexioned male and female models

Independent variable			Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Male model	Female respondent	Generation X	0.87	1.33	0.08	(854) –5.75	<.001	–0.39	–0.53	–0.26
		Generation Z	0.51	0.41	0.07	(854) 1.39	**.16**	0.10	–0.04	0.23
	Male respondent	Generation X	0.27	0.80	0.10	(854) –5.39	<.001	–0.37	–0.50	–0.23
		Generation Z	0.06	0.21	0.06	(854) –2.17	0.03	–0.15	–0.28	–0.01
Female model	Female respondent	Generation X	1.19	1.41	0.08	(854) –2.74	<0.01	–0.19	–0.32	–0.05
		Generation Z	1.23	1.19	0.07	(854) 0.56	**0.58**	0.04	–0.10	0.17
	Male respondent	Generation X	0.67	1.34	0.10	(854) –6.75	<0.001	–0.46	–0.60	–0.33
		Generation Z	0.53	0.83	0.07	(854) –4.48	<0.001	–0.031	–0.44	–0.17

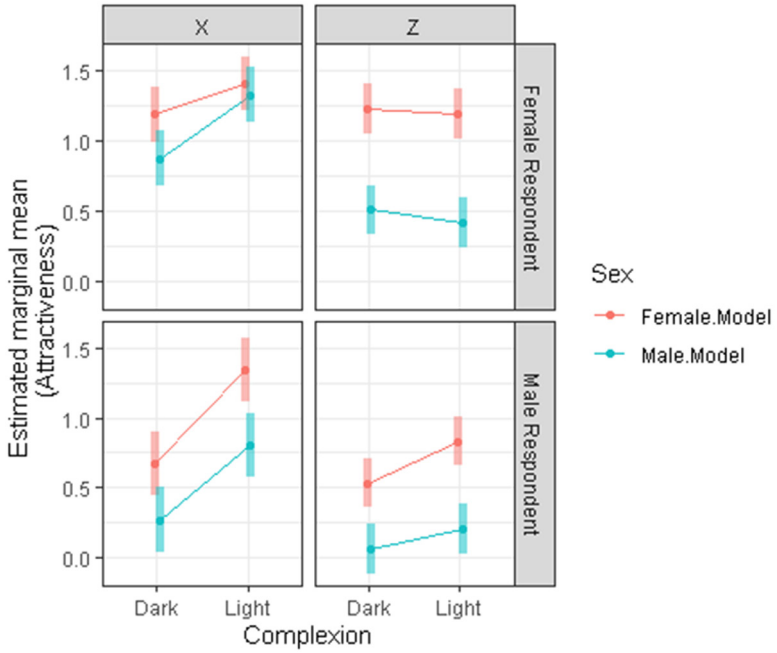

Figure 7: Four-way interaction visualisation between models' complexion and sex and respondents' sex and generation in predicting attractiveness rating.

Male and female Generation X respondents have a consistent preference for light-complexioned models. On the other hand, only female Generation Z respondents have no significant preference for light-complexioned female and male models.

Preferences for light-complexioned male models than darker complexioned ones are apparent among Generation X respondents, but not for Generation Z. This is consistent with the predicted attractiveness data in the authors' previous work (Policarpio et al. 2022). In a closer look at the empirical data, light-complexioned female models are preferred by Generations X and Z male respondents. Generation X female respondents also prefer light-complexioned female models, but not the Generation Z female respondents.

In the mating context, it shows that the Generation X male respondents like light-complexioned female models, and Generation X female respondents like light-complexioned male models. In the same-sex perspective, Generation X male respondents have a higher regard for light-complexioned male models than their dark-complexioned counterparts. Generation X female respondents also share the same higher regard for light-complexioned female models than their darker counterparts.

Generation Z female respondents have no significant preference for the skin colour of the models. Meanwhile, Generation Z male respondents prefer light-complexioned female models.

The female skin colour may be given more weight in the aesthetic judgment by males as observed in its consistency throughout the generations. Looking at the direction and intensity of such preference, the lasting effect of preference to fairer maiden is observed throughout the older and younger male generations. However, the preference for a fair-skinned man has watered down among the younger female generations.

Limitations

This study has some methodological limitations. First, the stimuli used for female respondents showed a remarkable preference for images with female models against male models. Controlling for the level of attractiveness should be levelled by conducting pre-testing for the selection of the stimuli. However, our research questions are focused on the intergenerational and sex aesthetic judgment differences which are consistently found. Another limitation is that the sample is sourced from the urban setting which means that caution must be taken in generalising the results. Generalisation of the

interpretation of skin colour differences in aesthetic judgment may also be limited to the range of the contrast between the skin colours presented in the stimuli, as the modification is limited to darker versions but not with a much fairer one against the original. Although the manipulation to darker skin colour of the portraits is standardised in the method, we did not however create another set of stimuli for a much fairer condition, which may limit the generalisation of the interpretation to the entire dark to fair spectrum. Nevertheless, the pattern of aesthetic judgment variation is remarkably observed across the sample even after controlling for the between-individuals and specific stimuli random effects.

CONCLUSION

This study empirically investigated the Filipinos' viewpoint on skin complexions from an intergenerational and sex perspective. Moreover, this study has also investigated if there is an interaction between the variables of the respondents' sex and generation in their appreciation of light and dark-complexioned male models, and if there is an interaction between the same variables in the respondents' appreciation of light and dark-complexioned female models. This study's findings have shown that for H1a, there is no statistical difference in the perceived attractiveness of both male and female respondents for either light or dark-complexioned models. As for H1b, there is a statistical difference in the male respondents' perception of skin colour attractiveness as they significantly find light-complexioned male and female models to be more attractive than their counterparts. With H1c, the female respondents find light-complexioned male models to be more attractive than those with a darker complexion. On the other hand, the same respondents find that both light and dark-complexioned female models are of the same attractiveness.

The study discovered in H2a that there is a statistically significant difference in how different generations perceive skin complexion attractiveness. Respondents coming from Generation X are substantially more attracted to light-complexioned models rather than their dark counterparts. Meanwhile, Generation Z perceived both light and dark-complexioned models as similarly attractive. H2b has shown consistent findings in that respondents from the older generation generally find light-complexioned models from both sexes to be more attractive than dark-

complexioned ones. In contrast, a close analysis of the data of H2c revealed that those from the younger generation find light-complexioned female models as more attractive than their dark-complexioned counterparts. As for the male models, this study showed that the respondents from the same generation find both light and dark complexions equally attractive.

Next, H3a confirms the significant interaction of variables, specifically that of Generation X, as the respondents from both sexes find light-complexioned models to be more attractive than their darker counterparts. Furthermore, the data shows that Generation Z male respondents have the same preference as that of their elder generation. Meanwhile, female Generation Z respondents find both light and dark-complexioned male models to be equally attractive. Finally, H3b is validated among male respondents from both generations and female Generation X respondents as they find light-complexioned female models to be more attractive than dark-complexioned ones. Alternatively, Generation Z female respondents find that female models of both light and dark complexion are similarly attractive.

As the data suggest, Filipino respondents from the National Capital Region differ in their perspectives on skin complexion from those of diasporic Filipino communities, specifically the Filipino Americans. Filipinos in the National Capital Region are now relatively more accepting of darker complexion as recent discourses in Philippine and global popular culture may have affected the perspectives of this study's respondents. On the other hand, Filipino-Americans are critical of having dark skin as they felt that it contributes to the discrimination that they are feeling in a social landscape that is dominated by light-complexioned people as mentioned in in the literature review (La Torre 2016). Contextually, the present sociocultural processes within the Philippine mainland are now a celebration of brownness as it is already being empowered in mass media and popular culture (Kalaw 2017; Nopuente and Caedo 2019; Binlot 2019). As the stimuli used in this study primarily involved images with models looking from the Mediterranean/Hispanic Caucasian and Asian regions, we recommend to future researchers planning to conduct a similar study to have sets of stimuli that present a comprehensive spectrum of skin colouration on both the lighter and darker ends.

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NOTES

* Monica Renee Policarpio is an Assistant Professorial Lecturer at the Department of Psychology, College of Liberal Arts, De La Salle University. She obtained her MS in Psychology and is presently pursuing her PhD in Educational Psychology at the said institution. Her research interests are reasoning, judgment, and decision making. She has completed research on intertemporal decision making, cognitive bias, and modelling preferences.

** Jeconiah Louis Dreisbach is an Assistant Professorial Lecturer in the Department of Filipino at De La Salle University. He co-edited the book *Environment, Media, and Popular Culture in Southeast Asia* (Springer, 2022). He is serving in various capacities as an editorial board member for the journals *Studies in Ethnicity and Nationalism, Malaysian Journal of Media Studies, Southeast Asian Media Studies*, and *LLT Journal: A Journal of Language and Language Teaching*. As a Philippine Studies researcher, his interdisciplinary work revolves around Philippine language, culture, and media studies, migration, and Southeast Asian politics. Concurrent to his doctoral studies at the Universitat Oberta de Catalunya where he is a researcher for the Language, Culture and Identity in the Global Age research group, Jecon is also a visiting scholar at the Department of International Studies of the American University of Sharjah. He is a Fellow of the Royal Asiatic Society of Great Britain and Ireland and an Associate Member of the National Research Council of the Philippines.

*** Ana Grace R. Masalunga is a Research Administrator of the Office of the Vice Chancellor for Research and Innovation, De La Salle University Philippines. She's currently taking her Master of Science in Psychology and already completed her course work at the same university. Her first publication was published in *Asia Pacific Journal of Education, Arts, and Sciences* last 2019. She received her first recognition award during the Vice Chancellor for Research and Innovation (VCRI) Faculty and Student Research Recognition Award also in 2019. She is a co-author of the research paper entitled *Establishing the Most Appropriate, Formal and Academic Filipino Translation of the Term* "*Male Homosexual*". Her research interests are Philippine studies, social psychology, industrial and organisational psychology, and game psychology.

**** Dr Feorillo A. Demeterio III is a Full Professor of the Department of Filipino, College of Liberal Arts, and the Director of the University Research Coordination Office, De La Salle University. He is the author of the books *Ang mga Ideolohiyang Politikal ng Catholic Bishops' Conference of the Philippines* (2012), *Ferdinand Blumentritt and the Philippines* (2013), and *The Socio-Political Discourses of the Catholic Bishops' Conference of the Philippines* (2018), as well as of various essays on hermeneutics, cultural studies, Philippines studies, and Filipino philosophy that are published in a number of local and international journals. He also co-authored the books *From Exceptionality to Exceptional: Inclusion of Differently Abled Persons in the Workplace* (2014) and *Cataloguing and Baselining the Filipino-Spanish Churches of the Diocese of Maasin, on the Island of Leyte* (2020). He served as a visiting research professor at the Council for Research in Values and Philosophy, Catholic University of America, Washington, D.C., in 2013. In 2014, Dr Demeterio was recognised as an outstanding alumnus in the field of philosophy by the Graduate School of the University of Santo Tomas. He is a co-founder of the Andrew Gonzalez Philippine Citation Index.

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SUPPLEMENTARY TABLES

Supplementary Table 1

Estimated means comparisons on the main effects of model complexion, model sex, respondent sex, and respondent generation on attractiveness rating.

Independent variable		M	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
M Complexion	Dark	0.67	0.45	(522) –8.06	<0.001	–0.71	–0.88	–0.53
	Light	0.94	0.45					
M Sex	Female	1.05	0.04	(522)15.59	<0.001	1.37	1.17	1.56
	Male	0.56	0.04					
R Sex	Female	1.02	0.06	(522) 4.93	<0.001	0.43	0.26	0.60
	Male	0.59	0.06					
R Generation	X	0.96	0.06	(522) 4.17	<0.001	0.36	0.19	0.54
	Z	0.62	0.06					

Notes: M Complexion, $F(1,522) = 65.01$, $p < 0.001$, $\eta_p^2 = 0.11$; M Sex, $F(1,522) = 243.17$, $p < 0.001$, $\eta_p^2 = 0.32$; R Sex, $F(1,522) = 24.28$, $p < 0.001$, $\eta_p^2 = 0.04$; R Generation, $F(1,522) = 17.37$, $p < 0.001$, $\eta_p^2 = 0.03$.

Supplementary Table 2

Estimated means comparisons on the two-way interaction effect of respondent sex and respondent generation on attractiveness rating.

Independent variable	R Female	R Male	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Generation X	1.20	0.77	0.14	(522) 3.08	<0.001	0.27	0.10	0.44
Generation Z	0.84	0.41	0.10	(522) 4.11	<0.001	0.36	0.19	0.53

Notes: R Sex*R Generation, $F(1,522) = 0.00$, $p = 0.99$, $\eta_p^2 = 0.00$.

Supplementary Table 3

Estimated means comparisons on the two-way interaction effect of respondent sex and model sex on attractiveness rating.

Independent variable	Female Model	Male Model	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Female respondent	1.26	0.78	0.04	(522) 11.51	<0.001	1.01	0.83	1.19
Male respondent	0.84	0.34	0.05	(522) 10.66	<0.001	0.93	0.75	1.11

Notes: R Sex*M Sex, $F(1,522) = 0.24$, $p = 0.62$, $\eta_p^2 = 0.00$.

Supplementary Table 4

Estimated means comparisons on the two-way interaction effect of respondent generation and model sex on attractiveness rating.

Independent variable	Female Model	Male Model	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Generation X	1.15	0.82	0.05	(522) 6.57	<0.001	0.58	0.40	0.75
Generation Z	0.95	0.30	0.04	(522) 17.27	<0.001	1.51	1.32	1.71

Notes: R Generation*M Sex, $F(1,522) = 25.65$, $p < 0.001$, $\eta_p^2 = 0.05$.

Supplementary Table 5

Estimated means comparisons on the two-way interaction effect of model complexion and model sex on attractiveness rating.

Independent variable	Dark	Light	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Female model	0.91	1.19	0.04	(522) –7.25	<0.001	–0.50	–0.63	–0.36
Male model	0.43	0.69	0.04	(522) –6.58	<0.001	–0.45	–0.59	–0.31

Notes: M Complexion*M Sex, $F(1,522) = 0.42$, $p = 0.52$, $\eta_p^2 = 0.00$.

Supplementary Table 6

Estimated means comparisons on the three-way interaction effect of respondent sex, respondent generation and model complexion on attractiveness rating.

Independent variable		Dark	Light	SE	*(df) t*	p	d	Lower CI	Upper CI
Generation X	Female R	1.03	1.37	0.07	(522) –4.95	<0.001	–0.43	–0.61	–0.26
	Male R	0.57	1.07	0.08	(522) –7.08	<0.001	–0.62	–0.79	–0.44
Generation Z	Female R	0.87	0.80	0.06	(522) 1.14	**0.26**	–0.10	–0.07	0.27
	Male R	0.30	0.52	0.06	(522) –3.88	<0.001	–0.34	–0.51	–0.17

Notes: R = respondent; R Sex*R Generation*M Complexion, $F(1,522) = 0.03$, $p = 0.86$, $\eta_p^2 = 0.00$.

Supplementary Table 7

Estimated means comparisons on the three-way interaction effect of respondent sex, respondent generation and model sex on attractiveness rating.

Independent variable		Female Model	Male Model	*SE*	*(df) t*	*p*	*d*	Lower CI	Upper CI
Generation X	Female R	1.30	1.10	0.06	(522) –3.13	0.002	0.27	0.10	0.45
	Male R	1.00	0.54	0.08	(522) 5.91	<0.001	0.52	0.34	0.69
Generation Z	Female R	1.21	0.46	0.05	(522) 14.14	<0.001	1.24	1.05	1.42
	Male R	0.68	0.13	0.05	(522) 10.28	<0.001	0.90	0.72	1.08

Notes: R = respondent; R Sex*R Generation*M Sex, $F(1,522) = 14.12$, $p < 0.001$, $\eta_p^2 = 0.02$.

Supplementary Table 8

No interaction between R Sex and R Generation: Actual mean level of attractiveness rating as a function of R Sex and R Generation.

	R Sex	
	R Female	R Male
Generation X	1.24 (1.19)	0.80 (1.24)
Generation Z	0.88 (1.53)	0.44 (1.56)

Supplementary Table 9

No interaction between R Sex and M Complexion: Actual mean level of attractiveness rating as a function of R Sex and M Complexion.

	M Complexion	
	Dark	Light
Female model	0.96 (1.43)	1.10 (1.39)
Male model	0.40 (1.50)	0.71 (1.44)

Supplementary Table 10

Interaction between R Generation and M Complexion: Actual mean level of attractiveness rating as a function of R Generation and M Complexion.

	M Complexion	
	Dark	Light
Generation X	0.87 (1.27)	1.26 (1.15)
Generation Z	0.61 (1.60)	0.72 (1.52)

Supplementary Table 11

No interaction between R Sex and M Sex: Actual mean level of attractiveness rating as a function of R Sex and M Sex.

	M Sex	
	Female model	Male model
Female respondent	1.25 (1.28)	0.81 (1.49)
Male respondent	0.76 (1.43)	0.35 (1.49)

Supplementary Table 12

Interaction between R Generation and M Sex: Actual mean level of attractiveness rating as a function of R Generation and M Sex.

	M Sex	
	Female model	Male model
Generation X	1.17 (1.94)	0.97 (1.25)
Generation Z	0.94 (1.47)	0.38 (1.60)

Supplementary Table 13

Interaction between M Complexion and M Sex: Actual mean level of attractiveness rating as a function of M Complexion and M Sex.

	M Complexion	
	Dark	Light
Female model	0.89 (1.42)	1.16 (1.32)
Male model	0.51 (1.53)	0.69 (1.49)