

RESEARCH ARTICLE

Penalties and Some Counterfactuals to Beauty Premium: Evidence From a Job Search Simulation Experiment¹

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By utilizing Heckman's two-stage selection model, this paper attempts to establish correlates between an individual's physical attractiveness and the employer's hiring decisions and wage allocations in an experimental labor market. Undergraduate students from De La Salle University Manila represented the sample for applicants. The findings show that, first, beauty premium is lower for men—more physically attractive male candidates have lower chances of getting hired, and subsequently acquire lower wages than more physically attractive women. Second, beauty premium does not differ between the sales and finance occupations. Third, the relationship between beauty and hiring probability comes from the employer's personal bias, whereas the link between beauty and wages originates from and employer's personal bias and stereotypes. Lastly, people concur on the appeal of certain beauty features—more consistently for women.

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JEL Classification: C90, J01, J16, J64

In a job search process, there is unarticulated but generally accepted policy on prejudging individuals based on outward appearance. Although it is considered conventional wisdom (Hatfield & Sprecher, 1986; Tatarkiewicz, 2012), the problem of lookism is one of the most prevalent but ignored prejudices in the world (Tietje & Cresap, 2005). A lot of issues that result

in potential job mismatch are due to the unobserved quality of skills that may be required for the job post but are often “replaced” or proxied by physical attributes that are observable by the hiring personnel on potential applicants.

In this paper, we look at the conflicts that arise in judgment on looks versus capabilities according

to certain discipline-specific jobs. This may also be considered an issue in a number of job placement and hiring mechanisms. When two equally qualified candidates applied for the same position, the employer would more likely hire the one who is more physically attractive because society has associated beauty with favorable characteristics (Cavico et al., 2012). This then results in the concept of beauty premium for those individuals characterized by certain preferable attributes. Walcutt et al. (2013) defined beauty premium as the condition where individuals receive higher wages and better job opportunities due to their above-average physical attractiveness. The effect of beauty premium on wages has been empirically demonstrated in economic literature (Harper, 2000; Price, 2008; Johnston, 2010) and in psychology (Andreoni & Petrie, 2008; Agthe et al., 2010).

Discrimination based on factors beyond personal control has raised concerns relating to pay differentials (Hamermesh & Biddle, 1994), such that “society’s affinity for beauty seems to have real economic consequences for people” (Corbett, 2009, p. 625). In line with this, the objectives of this study are the following: (1) to examine whether beauty premium exists and differs between sales and finance occupations in the initial hiring decisions and subsequent wage assignments; (2) to identify the transmission channel (or channels) through which beauty affects employers’ perception of candidates’ productivity; and (3) to determine the standards of beauty in an experimental labor market.

Demonstrating the existence of beauty premium is inadequate as the issue mentioned above poses social and economic implications. If the study proves that there is differential treatment as a function of physical appearance, then it can be used as a research groundwork for possible legal policy intervention to protect the workers’ rights from labor market discrimination. Particularly, by identifying the channels as to how beauty premium manifests itself, the study intends to serve as a preliminary basis that would allow for the regulation of specific steps in the actual hiring processes of firms. This was demonstrated by Becker (1957) in the 1950s, highlighting that there is a possible effect on wage gaps that has implications in employment and job search (Ehrenberg & Smith, 2012).

Data and Methodology

The study hypothesizes that beauty premium exists in the labor market. To account for the endogeneity coming from the indirect relationship between beauty and hiring outcomes, a multiple treatment experiment was utilized because using mere observational data cannot capture such risk of endogeneity.

Participants’ Characteristics

A total of 90 undergraduate students of the College of Business and School of Economics (on their final year) from De La Salle University Manila participated in the study as either employers or employment candidates. Half of the undergraduates are majoring in either Finance or Economics, and the other half take a specialization in either Marketing or Advertising. Also, 20 undergraduate students from De La Salle University College of St. Benilde participated as photo evaluators.²

Prior to the experiment proper, all potential participants were briefed regarding the study. They were also asked to sign a consent form and fill out a digital resume. The participants were then randomly grouped into batches of ten and were randomly assigned their specific roles – five will be employment candidates or job applicants, and the other five will be the employers. They will only know their role once the experiment proper begins.

Experiment Proper

The participants were asked to arrive ten minutes earlier for briefing. Upon arrival, the frontal face photos of the participants who were randomly assigned the role of an employment candidate or job applicant were taken. Such employment candidates were tasked to answer a practice aptitude test, which will form part of their resumes. Lastly, they will be asked to estimate their scores in the actual aptitude test.

Meanwhile, for the participants randomly assigned to be employers, they were also briefed on their assigned roles and tasks. There are five different roles for each of them corresponding to each step of the labor market simulation of this paper’s experiment, as shown in Table 1.

These job hiring simulation steps are not chronological. After the briefing session, both employers and candidates were randomly assigned based on the order of their interactions with each other.

Table 1*Steps in the Experimental Design Undertaken by Five Different Employers*

Employer role	Beauty channel	Tasks involved
Employer A	Baseline	Evaluates only the resumes without frontal face photos.
Employer B	Visual (V)	Evaluates resumes with the frontal face photos.
Employer C	Oral (O)	Evaluates resumes without the photos and conducts a three-minute phone interview.
Employer D	Visual and Oral (V+O)	Evaluates resumes with frontal face photos and conducts a three-minute phone interview.
Employer E	Face-to-face (FTF)	Evaluates resumes along with the frontal face photos and conducts a three-minute face-to-face interview.

This means a candidate may, for example, start being evaluated by Employer D and then by Employer A, until the whole simulation finishes.

Through random assignment, it can be safely assumed that differences in the hiring outcomes will result from varying treatments. Before the experiment starts, the candidates do not know who will be employers and which employer they will be interacting with for each step. This also applies to the employers, that is, they are not aware of who the candidates are and which candidate they will evaluate for each step. This is done to prevent asymmetric information and endogeneity coming from potential connivance among participants. It is likely for both candidates and employers to adjust according to their roles, thus hindering the researchers from capturing the natural reactions between the two. To decompose beauty premium, the experimental design exposes employers and candidates to both control and treatments through varying degrees of interactions. The control group is represented by the first step in the hiring process, which is Employer A's resume review. This represents a step in the hiring process that will not pose as a channel through which an employer's hiring decisions can be affected by physical attractiveness. The treatment groups, on the other hand, consist of the four remaining steps in the hiring process that contain variations of interaction. The four treatments constitute the three hypothesized transmission channels of beauty premium, which are visual, oral, visual and oral, and face-to-face.

Each employer will answer a survey after evaluating each of the candidates to estimate the productivity of each candidate based on the resume or interview. After the evaluation period, all hired candidates answered the

actual aptitude test. They were given a time limit of 20 minutes to answer all questions and were not allowed to use calculators and other gadgets while taking the test. Meanwhile, the employers answered the exit and beauty preferences survey. Overall, the experimental session lasted for about 50 minutes to an hour.

Academic incentives (AI) were given to the participants. Incentives for employers were computed as follows:

$$AI = 30 + \left[100 + \sum_{i=1}^n 0.4 |A_i - w_{ij}| \right] \quad (1)$$

Meanwhile, candidates' incentives (CI) were computed as follows:

$$CI = 30 + [A_i - 0.4 |C_i - A_i|] \quad (2)$$

where

A_i = candidate's actual aptitude test score

w_{ij} = employer j 's productivity estimate of candidate i

C_i = candidate's confidence or own estimate of his or her actual aptitude test score

Equation 1 shows that employers receive a show-up incentive of 30, and for every point they mispredict (over or under) the candidate's actual aptitude test score, they will be deducted 0.4 or 40% of the point. Their mispredicted sum across all candidates will be deducted from 100. Meanwhile, as shown in Equation 2, candidates also receive a show-up incentive of 30, and their variable incentive depends on their actual aptitude test score and estimated aptitude test score. This means that the maximum possible score of every

participant is 130. Hence, participants who got a score of at least 100 received 100% of their professor's grade incentive, whereas those who got a score less than 100 will receive the same percentage of the incentive as their score.

Econometric Models

This paper operationalizes the conceptual and theoretical framework presented using two econometric models. Furthermore, they are modified versions of the empirical strategy of Mobius and Rosenblat (2006). Both models quantify how beauty affects an employer's decision-making on hiring and productivity estimates through the three channels earlier mentioned while controlling for resume characteristics. Meanwhile, these channels are reflected through the four treatments: visual, oral, visual and oral, and face-to-face treatments. These will help the researchers pinpoint as to whether beauty arises from both taste-based and statistical discrimination. Taste-based discrimination refers to the employer's disamenity value to hiring candidates that possess undesirable characteristics. It is discrimination based on personal bias. Meanwhile, statistical discrimination occurs when employers judge candidates based on easy-to-process information and their group affiliation. For instance, employers may view beautiful persons as more confident and have better communication skills

Purposive sampling technique was used to gather all participants in the study. The models were estimated using the most suitable estimation for such technique: Heckman's two-stage selection

model. Such an estimation method accounts for sample selection and creates a continuous analysis of the probability of getting hired with the subsequent wages to be earned by the hired candidates. When utilizing the Heckman model, notably, the outcome equation is shown in the results after the selection equation.

On the one hand, equation 3 examines the employer's expectations on the candidate's productivity. It is given by the employer's estimate of the candidate's actual aptitude test score.

$$W_{li} = \alpha_1 X_{li} + \beta_1 P_{li} + \gamma_1 A_{li} + \delta_1 B_{li} + \eta_1 S_{li} + \lambda_1 F_{li} + \mu_1 BG_{li} + \pi_1 B_{li} * V_{li} + \rho_1 B_{li} * O_{li} + \varsigma_1 B_{li} * S_{li} + \phi_1 B_{li} * F_{li} + \varepsilon_1 C_{li} + \psi_1 C_{li} * V_{li} + \omega_1 C_{li} * O_{li} + \Omega_1 C_{li} * S_{li} + \Gamma_1 C_{li} * F_{li} + \theta_1 Z_{li} + u_{li} \quad (3)$$

where W_{li} is only partially observable. W_{li} is observed if and only if the dependent variable is positive ($H_{2i} > 0$); otherwise, the aforementioned is censored.

On the other hand, equation 4 represents the probability of an employer hiring a candidate, where $H_{2i} = 1$ if hired. If otherwise, $H_{2i} = 0$. The selection equation is as follows:

$$H_{2i} = \alpha_2 X_{2i} + \beta_2 P_{2i} + \gamma_2 A_{2i} + \delta_2 B_{2i} + \zeta_2 V_{2i} + \eta_2 O_{2i} + \lambda_2 F_{2i} + \mu_2 BG_{2i} + \xi_2 B_{2i}^2 + \pi_2 B_{2i} * V_{2i} + \rho_2 B_{2i} * O_{2i} + \varsigma_2 B_{2i} * S_{2i} + \phi_2 B_{2i} * F_{2i} + \varepsilon_2 C_{2i} + \psi_2 C_{2i} * V_{2i} + \omega_2 C_{2i} * O_{2i} + \Omega_2 C_{2i} * S_{2i} + \Gamma_2 C_{2i} * F_{2i} + \theta_2 Z_{2i} + u_{2i} \quad (4)$$

Summarized in Table 2 are variable descriptions, measurements, and a priori expectations.

Table 2
Definition of Variables for the Econometric Models

Note that asterisks (*) indicate multiplication between regressors (indicated in the variables in last column).

Label		Data Description	Data Measurement
Dependent Variables			
H_{li}	hire	This represents the response of the employer whether the candidate is accepted or not.	<i>hire</i> = 1 if the candidate is hired; zero otherwise
W_{li}	wage	This represents the employer's expectation on candidate's productivity. It is given by employer's estimate of candidate's actual aptitude test score.	<i>wage</i> = actual aptitude test score estimate

Independent Variables			
X_i	<i>age</i>	This represents all basic labor market characteristics in the digital resume (age, gender, course, CGPA, work experience, co-curricular activities, seminars attended, research papers prepared, language spoken and hobbies).	<i>age</i> = stated age
	<i>gender</i>		<i>gender</i> = 1 if male = 0 if female
	Course		Course
	<i>course_finance</i>		<i>course_finance</i> = 1 if the course of the candidate is finance; zero otherwise
	<i>course_economics</i>		<i>course_economics</i> = 1 if the course of the candidate is economics; zero otherwise
	<i>course_marketing</i>		<i>course_marketing</i> = 1 if the course of the candidate is marketing; zero otherwise
	<i>course_other</i>		<i>course_other</i> = 1; zero otherwise
	<i>cgpa</i>		<i>cgpa</i> = current CGPA
	<i>workexperience</i>		<i>workexperience</i> = 1 if candidate stated at least one work experience; zero otherwise
	<i>cocurricular</i>		<i>cocurricular</i> = 1 if candidate stated at least one co-curricular; zero otherwise
	<i>seminars</i>	Language Hobbies	<i>seminars</i> = 1 if candidate stated at least one seminar attended; zero otherwise
	<i>researchpaper</i>		<i>researchpaper</i> = 1 if candidate stated at least one research paper written; zero otherwise
	Language		Language
	<i>language_filipino</i>		<i>language_filipino</i> = 1 if candidate speaks the said language; zero otherwise
	<i>language_other</i>		<i>language_other</i> = 1 if the candidate speaks other language/s aside from English and Filipino; zero otherwise
	Hobbies		Hobbies
	<i>hobbies_sports</i>		<i>hobbies_sports</i> = 1 if candidate stated a hobby in this field; zero otherwise
	<i>hobbies_stocks_finance</i>		<i>hobbies_stocksfinance</i> = 1 if candidate stated a hobby in this field; zero otherwise
	<i>hobbies_</i>		<i>hobbies_photovideoediting</i> = 1 if candidate stated a hobby in this field; zero otherwise
			<i>hobbies_other</i> = 1 if candidate stated hobbies aside from sports, stocks or finance, photo and video editing; zero otherwise
P_i	<i>practicescore</i>	This represents the practice aptitude test score obtained by the candidate.	<i>practicescore</i> = practice aptitude test score
A_i	<i>productivity</i>	This represents the actual aptitude test score obtained by the candidate.	<i>productivity</i> = actual aptitude test score
B_i	<i>beauty</i>	This represents the beauty rating computed for each candidate.	<i>beauty</i> = computed beauty rating (formula indicated in Equation 5)
C_i	<i>confidence</i>	This represents the estimated aptitude test scores of the candidates.	<i>confidence</i> = test score estimates given by candidates before they take the actual aptitude test

V_i	<i>visual</i>	This is a dummy variable that represents employers assigned in the visual (V) treatment.	visual = 1 if employer is assigned to this treatment; zero otherwise
O_i	<i>oral</i>	This is a dummy variable that represents employers assigned in the oral (O) treatment.	oral = 1 if employer is assigned to this treatment; zero otherwise
S_i	<i>visoral</i>	This is a dummy variable that represents employers assigned in the confidence (V+O) treatment.	visoral = 1 if employer is assigned to this treatment; zero otherwise
F_i	<i>ftf</i>	This is a dummy variable that represents employers assigned in the amplified confidence (FTF) treatment.	ftf = 1 if employer is assigned to this treatment; zero otherwise
Bg_i	<i>beautygen</i>	This represents the interaction between beauty and gender.	beautygen = beauty * gender
B_i^2	<i>beauty2</i>	This captures whether beauty has diminishing returns.	beauty2 = exponential of beauty
	<i>beautyvis</i>	This represents the visual stereotype channel for beauty premium. It is an interaction variable between beauty and the V treatment.	beautyvis = beauty * vis
	<i>beautyoral</i>	This represents the oral stereotype channel for beauty premium. It is an interaction variable between beauty and the O treatment.	beautyoral = beauty * oral
	<i>beautyvisoral</i>	This represents the confidence channel for beauty premium. It is an interaction variable between beauty and the V+O treatment.	beautyvisoral = beauty * visoral
	<i>beautyftf</i>	This represents the amplified confidence channel for beauty premium. It is an interaction variable between beauty and the FTF treatment.	beautyftf = beauty * ftf
	<i>convis</i>	This represents the visual stereotype channel for confidence premium. This is an interaction variable between confidence and the V treatment.	convis = confidence * vis
	<i>conoral</i>	This represents the oral stereotype channel for confidence premium. It is an interaction variable between confidence and the O treatment.	conoral = confidence * oral
	<i>convisoral</i>	This represents the confidence channel for confidence premium. It is an interaction variable between confidence and the V+O treatment.	convisoral = confidence * visoral
	<i>confif</i>	This represents the amplified confidence channel for confidence premium. It is an interaction variable between confidence and the FTF treatment.	confif = confidence * ftf
Z_i	<i>position</i>	This represents the occupation or position that the candidate was applying for.	position = 1 if sales officer = 0 if finance officer

As for the independent variables of both models, X_i represents all basic labor market characteristics in the digital resumé. P_i and A_i represent the performance variables. In particular, P_i represents the practice aptitude test score obtained by the candidate, whereas A_i represents the actual aptitude test score obtained by the candidate. Moreso, B_i represents the beauty rating computed for each candidate. The ratings were given

by the aforementioned separate batch of participants whose only task is to rate the employment candidates' photos. The beauty variable is created by computing the z-score (or the value from the standard normal distribution) of each candidate's overall centered beauty ratings. In essence, they were computed as follows:

$$B_i = \frac{\sum_{j=1}^n r_{ij} - \hat{r}_j}{R} \quad (5)$$

$$\hat{r}_j = \frac{\sum_{i=1}^n r_{ij}}{C} \quad (6)$$

where

- r_{ij} = raw beauty rating of rater j for candidate i
- \hat{r}_j = average beauty rating of rater j
- R = number of raters
- C = number of candidates

On the one hand, as shown in equation 5, the centered beauty ratings are computed by subtracting the mean of each beauty rater's total ratings from each raw rating that he or she gave each candidate to strip out measurement error coming from different preferences in beauty. Afterward, all centered ratings received by each candidate were summed and normalized by dividing the sum by the centered ratings' standard error. This normalization is done to interpret the marginal effects of beauty on hiring outcomes for every standard deviation increase in beauty rating. Lastly, B_{gi} represents the interaction between beauty and gender, whereas B_{iz} captures whether beauty has diminishing returns.

On the other hand, the dummy variables (V_i , O_i , S_i , F_i) for each treatment were created. Each represents employers assigned in that treatment. All participants who acted as employer A belong to the baseline. The visual and oral stereotype channels, along with the confidence channel through which beauty affects wages, are reflected by the interaction variables ($B_i * V_i$, $B_i * O_i$, $B_i * S_i$, $B_i * F_i$). These channels operate through employer's bias, thus representing statistical discrimination. The visual stereotype channel ($B_i * V_i$) captures the employer's physical attractiveness bias after seeing the candidate's resume and photo. The oral stereotype channel ($B_i * O_i$) captures the employer's physical attractiveness bias after conducting a phone call interview with the candidate due to the belief that physical attractiveness raises the social and communication skills of workers. Note here that physical attractiveness is not only insinuated by supplied photos (captured by V_i) but may also be

captured through voice quality and diction (through O_i). The confidence channel ($B_i * S_i$) represents the employer's belief that physically attractive candidates are more confident, and are more productive. Lastly, the amplified confidence channel ($B_i * F_i$) measures if actual physical interaction can enrich the effect of oral and visual treatments. In all of these treatments, as specified in Table 1, the channels from V to O to S , and finally to F , suggests an increasing physical attractiveness bias on the part of the employer. This is because beginning from O , there is already an interaction between the employer (or hiring personnel) and the job applicant, which is not only limited by the submitted resumé, with or without the supplied photos (in treatment V).

Meanwhile, the candidate's confidence is measured by his or her personal bias of his or her confidence. This is captured by the candidate's estimate of his or her actual aptitude test score, and it is represented by the variable C_i . Also, interaction variables between the confidence and the four treatments were created to enrich the analysis. By having separate analysis on the effect of a candidate's confidence on the employer's perception, the paper can test if confidence has productivity-enhancing effects arising from a candidate's personal bias. If confidence premium is statistically significant, then comparisons between confidence premium and beauty premium are made.

Lastly, Z_i represents the position (i.e., sales or finance officer) that was applied for by the candidate. In industries where workers have substantial interactions with customers, such as the sales industry, physically attractive individuals are given preferential treatment because of beauty's productivity-enhancing effects (Hamermesh & Biddle, 1994; Mobius & Rosenblat, 2006; Rooth, 2009). Thus, we expect beauty premium to be higher in these kinds of occupations than in those that require less customer interaction, such as finance officers. Hamermesh and Biddle (1994) referred to this phenomenon as "occupational crowding."

Results and Discussion

The regression results primarily fulfill the first two objectives of the study. Such regression initially uses a probit model (in equation 3), a requirement for the Heckman two-stage procedure. Meanwhile, the third objective will be discussed briefly by the results of beauty preferences statistics. This study proves that

beauty premiums can be captured from different stages in the hiring process. In the initial hiring process, beauty premium arises from the employer's taste-based discrimination only. This means that physical attractiveness will increase the probability of getting hired, but only because of the employer's personal bias on beauty preferences and employee selection.

Also, in the employer's estimation of worker's productivity, beauty premium is also evident from both taste-based and statistical discrimination. This

means that physical attractiveness raises wages not only because of the employer's personal bias but also because of the varying levels of interactions between employers and applicants. Such interactions cause bias on how employers estimate applicants' productivity. Notably, there are no differences in beauty premium in the sales and finance occupations.

Table 3 shows the regression results as estimated by the two-step Heckman selection model, with the variable H_{2i} representing the selection model (as

Table 3

Regression Results of the Models (Equations 3 and 4). These Estimates are Generated Using Stata

Variables	Model 1 (Equation 3): Wage (W_{it})	Model 2 (Equation 4): Hire (H_{2i})
Age of candidate	-2.638	0.109**
Gender of candidate	-6.849	-0.188*
Candidate majors in Finance	3.882	0.090
Candidate majors in Economics	-0.632	-0.225*
Candidate majors in Marketing	-9.426	-0.027
Candidate majors in other programs	-0.348	0.036
Cumulative grade point average of the candidate	-1.311	-0.004
Work experience of the candidate	7.121	0.046
Co-curricular activities of the candidate	1.004	0.116
Seminars attended by the candidate	-3.489	0.001
Research papers made by the candidate	-3.935	0.372***
Candidate is fluent in Filipino	-5.503	0.015
Candidate is fluent in other languages	-5.890	-0.199*
Sports as a candidate's hobby	4.849	0.079
Investing in financial stocks as a candidate's hobby	2.788	0.199
Photo and video editing as a candidate's hobby	6.652	0.167*
Other hobbies of the candidate	7.575	0.323***
Practice score of the candidate	0.312**	0.003
Productivity estimate of the candidate	0.110	0.001
Beauty rating	3.836***	0.070***
Own estimate of actual score of the candidate	0.228	0.002
Exposure to visual treatment		0.503**
Exposure to oral treatment		0.119
Exposure to visual and oral treatment	28.376*	
Exposure to face-to-face treatment	9.055	-0.020
Beauty*gender	-4.390**	-0.101***
Beauty ²		-0.003
Beauty*Visual	-1.114	0.007
Beauty*Oral	-2.714*	-0.030
Beauty*Visual*Oral	0.206	-0.017
Beauty*Face-to-face	3.261**	0.031
Confidence*Visual	0.043	-0.004
Confidence*Oral	0.019	-0.002
Confidence*Visual*Oral	-0.370*	-0.002
Confidence*Face-to-face	-0.005	0.000
Position applied for	-2.871	-0.182*
Constant term	70.792	

Mills

lambda (λ)	17.202**
rho (ρ)	1.000
sigma (σ)	17.202

* significant at 10% level

** significant at 5% level

*** significant at 1% level

specified in Equation 4), and also the least-squares model with the variable W_{2i} as the dependent variable (as specified in Equation 3). In running the model through Stata, we used the `<heckman>` command.

It is also reported from Table 3 that the inverse Mills ratio (given by λ) is significant at the 5% level. Note also that ρ equals unity, or equivalently, $\lambda = 0$. The results rule out the presence of sample selection, as evidenced by the sample data (Wooldridge, 2010).

Initial Hiring Decisions: Beauty Premium

Physical attractiveness, as represented by *beauty*, accounts for an employer's taste-based discrimination. A standard deviation increase in a candidate's beauty rating will increase the chance of a candidate getting hired by 6.98%. This means that a candidate's physical attractiveness will increase his or her chance of getting hired due to employer's personal bias on choosing candidates, albeit other factors, such as resume characteristics that affect a candidate's employability. Moreover, there are significant differences in the returns to beauty on both genders, as seen on the strongly statistically significant interaction variable *Beauty*Gender*. A unit increase in standard deviation in the beauty rating of male candidates will decrease their chances of getting hired by 3.12% compared to female candidates who experience the same unit increase in beauty rating. Meaning, more physically attractive male candidates will have lower chances of getting hired than more physically attractive female candidates. This is due to the employer's personal preferences on physical attractiveness. Ultimately, for the study's experimental labor market, more physically attractive women experience a higher chance of getting hired.

Initial Hiring Process: Résumé Characteristics

Research papers made by the candidate and other hobbies of the candidate are the résumé characteristics that have statistically significant marginal effects on a candidate's probability of getting hired. Having prepared a research paper will increase the candidate's employability by 37.19%. Hobbies that positively affect the probability of getting hired is being engaged with arts, literature, music, volunteer work, and technology. These hobbies can increase a candidate's chances of getting hired by 32.28%.

A candidate's practice score and his or her estimate of the actual aptitude score they will get are

also not significant. This implies that in the initial hiring process, a candidate's perception of his or her confidence does not matter and that the aforementioned significant résumé characteristics are the ones used as a gauge by employers on the candidate's worthiness of being hired.

In addition to resume characteristics, the base course (captured by the constant term) is not significant (even at the 10% level). Moreover, the coefficients for Finance, Economics, and Marketing courses coefficients are not also significant even at the 10% level. This means that course programs do not show a statistical difference in wages, as supported by the obtained data.

Initial Hiring Process: Treatments Applied

There is no statistical discrimination present in the initial hiring process, as seen on the non-statistically significant treatment variables. Given that none of the treatments are statistically significant at either 95% or 90%, then the results conclude that there is no beauty premium arising from statistical discrimination or stereotypes in the initial hiring process. Although, visual treatment alone is significant. This implies that there is an effect on hiring decisions if candidates put photos on their résumés. The marginal effect of putting photos on résumés on the probability of getting hired is 50% higher than not attaching photos. However, this effect does not reflect the beauty premium.

The results imply that in this study's experimental labor market, the manner in which the employer's personal preferences take part in employee selection does not consist of comparisons across candidates. Meaning, when deciding whether to hire a candidate or not, an employer does not compare the candidate to their fellow candidates. The employer decides solely on the candidate's personal characteristics (i.e., résumé, aptitude test score, and photo if applicable to the employer), notwithstanding the personal characteristics of the other candidates.

Wages: Beauty Premium

Similar to the analyses on initial hiring decisions, physical attractiveness, as represented by *beauty*, accounts for the employer's taste-based discrimination or personal bias. A standard deviation increase in a worker's physical attractiveness increases an employer's estimate on the worker's productivity by 3.84 points. This means that physical attractiveness

can raise wages by 3.84 points, but only due to the employer's personal bias on what he thinks seems productive. Meanwhile, there are also slight differences in wages due to gender. A standard deviation increase in the beauty rating of male candidates will decrease employers' estimates on that worker's productivity by 0.55 points. Employers expect more physically attractive female workers to be slightly more productive than more physically attractive male workers.

Wages: Resume Characteristics

Unlike the results of the initial hiring process, only an applicant's practice aptitude test score is statistically significant. A point increase in a candidate's practice aptitude test score increases the employer's estimate on his or her productivity by 0.31 points. The results imply that for this study's experimental labor market, in estimating wages, worker's basic résumé characteristics are not a gauge for employers in measuring productivity; only the practice aptitude test scores.

Wages: Treatments Applied

In the results, there is a beauty premium arising from statistical discrimination when analyzing employer's estimates on productivity. Among the treatments applied, only the variable representing the amplified confidence channel through face-to-face interaction is statistically significant. This channel is an amplified version of the confidence channel because actual physical interactions are allowed to test whether richer interactions can enhance the effects of visual and oral treatments. This means that, indeed, the confidence channel is an effective channel through which a causal relationship between beauty and wages can be established. A standard deviation increase in the beauty rating of a candidate will increase the marginal effect of beauty on wages by 3.26 points because of the face-to-face treatment. Meaning, for the particular setting where employers and candidates have richer interactions via face-to-face interviews, a more physically attractive candidate (i.e., a candidate who has a standard deviation higher beauty rating than his or her fellow candidates) receives a higher productivity estimate by 3.26 points.

Beauty Preferences

To answer the third objective, a beauty preferences survey was conducted after each experiment session

to know whether employers and raters concur on the appeal of certain beauty features. The respondents are composed of 45 employers and 20 raters in the experiment, 32 of which are male, and 33 are female. They were asked to identify their preferences on certain physical features for both men and women, regardless of their sexual orientation. The participants responded in the survey by utilizing a Likert scale, a la Hamermesh and Biddle (1994).

Respondents generally agree on what type of physical features they find attractive on women (i.e., fair complexion; brown eyes; moderate lips; shoulder-length, brown hair; and medium height). Meanwhile, some discrepancies were observed in the beauty preferences of men. Male and female respondents generally agree only on the following for men: fair complexion, clean-shaven, and black hair.

Although the respondents did not agree on one particular type in other features, it is observable that they still somehow concur on two types, at most. For instance, in terms of eye shape for women, respondents prefer either round or somewhere between round and tapered. In terms of the female build, they prefer lean or curvy; and for the hairstyle, they prefer straight or wavy. This is also applicable in some features for men, such as eye color (black or brown), hair-length (short or medium), build (lean or muscular), and height (medium or tall). Given this, standards are still more consistent for women as votes were not as spread out as compared to that for men.

Summary, Conclusions, and Recommendations

The two objectives for analyzing the effect of beauty on employers' initial hiring decisions are fulfilled: first, beauty premium does not differ between the sales and finance occupations. Second, there is a beauty premium in the initial hiring process, but only from an employer's taste-based discrimination. As the treatments applied are not statistically significant, this means that beauty does not affect wages even at different variations in the length and type of interactions between a candidate and an employer. Hence, for initial hiring decisions, a more physically attractive candidate will have a higher chance of getting hired, but only because of the employer's personal bias—he or she fits the employer's personal preferences on choosing which candidates to hire. Also, the study

finds that among basic résumé characteristics available, only research papers produced and hobbies (i.e., being engaged with arts, literature, music, volunteer work, and technology) are the résumé variables that have statistically significant effects on a candidate's probability of getting hired.

Moreover, the two objectives for analyzing the effect of beauty on employers' wage assignments have also been reached: first, the effect of beauty does not differ between the sales and finance occupations. Second, there is a beauty premium in the employer's wage assignments coming from both taste-based discrimination and statistical discrimination. A candidate's physical attractiveness raises an employer's expectations of the candidate's productivity. Among the treatments applied, only face-to-face treatment is statistically significant. This represents the amplified version of the confidence channel, where actual physical interactions are allowed between employers and candidates to test if richer interaction has any effect on the additivity of the oral and visual stereotype channels. This means that there is evidence that beauty not only has correlates with wages but also can raise wages if employers and candidates are allowed to have face-to-face interactions. Meanwhile, no basic résumé characteristics motivate employers to increase their wage assignments. Although, a candidate's practice aptitude test score raises wages.

Notably, returns to beauty differ for both genders in this study's experimental labor market. On the one hand, more physically attractive female applicants enjoy beauty premiums than more physically attractive male applicants in both initial hiring decisions and subsequent wage allocations. On the other hand, the study does not find any evidence for confidence premium. A candidate's perception of his or her confidence is not enough to increase his or her chances of getting hired and subsequently earning higher wages.

In terms of beauty preferences, this study's findings show that, indeed, people concur on the appeal of certain beauty features. In general, respondents prefer fair complexion, brown eyes, moderate lips, medium-length brown hair, and medium height in women, whereas fair complexion, clean-shaven, and black hair are preferred in men. This validates Rhode's (2009) claim that the convergence in preferred physical characteristics is increasing. A new finding from this study is that beauty standards for women are more

consistent within and across genders compared to that for men. However, some other results provided in Lee et al. (2015, 2018) suggested that possibly males may also be preferred over females based on appearance as a possible indication of being competitive rather than cooperative. The said paper discriminates competitive men based on better appearance, that is, good looking male applicants are not hired if jobs require cooperation. The said paper also emphasized that organizational environment and job types are important in considering potential success in job search, apart from the usual beauty premium, as explained in the literature, for example, in Hosoda et al. (2006).

Although the results give little support to the findings of Hamermesh and Biddle (1994) and Mobius and Rosenblat (2006), who claimed the existence of beauty premium in experimental labor markets in terms of wages, the findings in this study demonstrate that beauty correlates with the probability of getting hired. This is seen in the regression results such that employers' hiring decisions are positively influenced by exposure to visual treatment (i.e., having seen a candidate's photo). Attention should be drawn more particularly to recent evidence, which shows that self-verification influences a successful job search (Moore et al., 2017). The empirical findings in the paper suggest that self-verification affects the probability of success, particularly for women. The visual treatment exposure, as opposed to the negative oral treatment, has a positive influence on wages. Employers' estimate of a female candidate's productivity may possibly arise from attempts to self-verify during the interview. Thus, candidates who know that this can affect their chances of getting higher wages strive to self-verify at the onset, which enhances the perception of their productivity. Such beauty premium on wages, but only in so far as women are concerned, also raises important issues about men's decision to self-verify (or not).

It is also important to note that because the oral and face-to-face channels affect the wages (the former being negative, but the latter being positive), it may be possible that personal bias may arise from such an attempt to self-verify. Such self-verification may affect the confidence premium, which is largely self-rated. Hence, self-verification may amplify the bias in the selection of candidates for the job. Moreover, candidates, knowing that such may affect their chances of getting higher wages, may even increase efforts and conscientiously work to self-verify.

There might also be some cultural explanations for the negative effect of the oral channel. In the cultural experience in the Philippines, there might be some “disconnect” between perceived beauty only using voice quality and diction in expecting appearance. This is exemplified in a number of cases in mass media, for example, reporters and voice-overs in radio and some television segments may not resemble the expected pleasing appearance, as may be suggested by quality of voice and diction in such media platforms. This is the phenomenon referred to as the “vocal dissonance.” However, empirical evidence across cultures are mixed, for example, the anecdotal observations in the Philippines versus the study by Smith et al. (2016).

The finding that beauty premium does not differ between the sales and finance occupations implies that the preference for more attractive workers is not because of the notion about beauty’s productivity-enhancing effects or stereotypes, but more of personal bias. Such a claim is supported by the non-significance of the variables pertaining to treatment effects in this study. This raises concern because equally productive but less attractive individuals are forced to accept lower wages. This then lowers the incentive for them to acquire costly skills and, in the long run, would indeed make them less productive. These results are also similar to the findings in Solnick and Schweitzer (1999) that better-looking job applicants have some advantage in job search (although their study is more consistent in the usual expectation that good looking males may have some advantage over women counterparts in job application).

Moreover, this study has provided the groundwork for future researchers regarding the effect of beauty in the hiring decisions of firms. However, due to time constraints, the study was restricted to small sample size. Thus, future researchers are advised to increase the number of participants. An example of such an extension is a study done by Gu and Ji (2019), which used a large data set instead of data obtained from experiments or simulations. The authors have obtained results attributing to beauty premium based on differences in individual characteristics, which are congenital and genetic in nature. This is in contrast to usual discrimination rooting from employers, or even to certain extent consumers, as suggested in the literature. Also, the scope of this study is limited to sales and finance occupations. To extend the research

on occupational crowding arising from physical attractiveness, the study recommends to include other occupations. Future researchers should also consider adding other channels in analyzing sources of beauty premium and can also add depth by analyzing confidence premium. Lastly, employer characteristics can be analyzed and controlled in decomposing beauty premium to capture more in-depth explanations as to how and why beauty matters.

Finally, it must be noted that generally, gender-specific factors in beauty premium or beauty penalty resulting in some degree of occupational crowding, are always empirical in nature (Liu & Sierminska, 2014). For example, Agthe et al. (2010) considered beauty penalty stemming from negative reactions to physically attractive same-sex individuals. This is also furthered by Eswaran (2014), saying that in selection dynamics, there should be differences in gender between the applicant or the selection committee, or among the members of the selection committee itself. More importantly, the Likert scale with five scales may be inadequate if we are to be more particular on the degrees of beauty ratings. It must also be noted that although much of the literature have used similar strategies for beauty ratings, the centered score (or arithmetic mean) of beauty ratings may not be reliable. Note that arithmetic means are sensitive to outliers, especially if the distribution is skewed to having more of the extreme values on a scale that allows for more values for the ratings (say, from one to a hundred).

Given the similar findings in the downward bias towards males in the selection of possible candidates for employment as reflected in the *beautyvis* and *beautyoral* variables, such can be extended to a tournament-rendered selection process, where gender can be a possible characteristic that determines possible “threat” to internal employees, should there is a risk of replacement (Cheng et al., 2017). This is a classic counterexample to the traditional and much-studied phenomenon of “glass ceilings” in which women are usually affected, whether in a selection or in promotions inside a particular company ladder (Eswaran, 2014). And being a result of an experiment simulating a section of the Philippine labor market, the upward bias on women (on the existence of beauty premia) may be correlated with the phenomenon of beauty attributes particular on skin tone, which is much common to countries across Asia (Hunter, 2007).

NOTES

¹ The paper is an updated and revised version of the undergraduate thesis with the title “A Study on the Effect of Beauty on Hiring Decisions and Wage Allocations of Employers,” and later selected as a poster presentation at the DLSU Research Congress 2017, 20-22 June 2017, De La Salle University Manila (DLSU).

² The De La Salle College of St. Benilde (DLS-CSB) is an independent academic institution from De La Salle University Manila (DLSU-M). This means no undergraduate student can be simultaneously enrolled in two-degree programs of which one is from DLS-CSB and one from DLSU-M.

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Appendix

Econometric Regressions for Models 1 and 2

Note: Each of the variables have corresponding *p*-values in parentheses. Model 1 uses the variable “Hire” (see Equation 4) as the regressand, whereas Model 2 (see Equation 3) uses the variable “Wage” as the regressand. Both equations are generated through the two-step Heckman procedure, using Stata.

Variable	Variable description	Hire (H_{it})	Wage (W_{it})
<i>age</i>	Age of candidate	0.1092793 (0.022)	-2.638341 (0.339)
<i>gender</i>	Gender of candidate	-0.188076 (0.075)	-6.848968 (0.259)
<i>course_finance</i>	Candidate majors in Finance	0.0901474 (0.441)	3.881577 (0.498)
<i>course_economics</i>	Candidate majors in Economics	-0.2249423 (0.050)	-0.6318197 (0.916)
<i>course_marketing</i>	Candidate majors in Marketing	-0.0274765 (0.882)	-9.426248 (0.315)
<i>course_other</i>	Candidate majors in other programs	0.0359845 (0.806)	-0.348211 (0.964)
<i>cgpa</i>	Cumulative grade point average of the candidate	-0.0041027 (0.975)	-1.311147 (0.837)
<i>workexperience</i>	Work experience(s) of the candidate	0.0459751 (0.663)	7.12066 (0.153)
<i>cocurricular</i>	Co-curricular activities of the candidate	0.1162925 (0.351)	1.003897 (0.866)
<i>seminars</i>	Seminars attended by the candidate	0.0009949 (0.991)	-3.488814 (4.739551)
<i>researchpaper</i>	Research papers made by the candidate	0.3719338 (0.001)	-3.93485 (0.367)
<i>language_filipino</i>	Candidate is fluent in Filipino	0.0152954 (0.941)	-5.503107 (0.549)
<i>language_other</i>	Candidate is fluent in other languages	-0.1990454 (0.066)	-5.890448 (0.234)
<i>hobbies_sports</i>	Sports as a candidate’s hobby	0.0790842 (0.312)	4.848809 (0.250)
<i>hobbies_stocksfinance</i>	Investing in financial stocks as a candidate’s hobby	0.1992389 (0.116)	2.787776 (0.698)

<i>hobbies_photovideoediting</i>	Photo and video editing as a candidate's hobby	0.1666162 (0.077)	6.651764 (0.126)
<i>hobbies_other</i>	Other hobbies of the candidate	0.3228053 (0.000)	7.574895 (0.278)
<i>practicescore</i>	Practice score of the candidate	0.0030794 (0.260)	0.3119006 (0.020)
<i>productivity</i>	Productivity estimate of the candidate	0.0011177 (0.642)	0.1099249 (0.420)
<i>beauty</i>	Beauty rating	0.0697517 (0.001)	3.836363 (0.009)
<i>confidence</i>	Own estimate of actual score of the candidate	0.0016221 (0.649)	0.2281516 (0.178)
<i>visual</i>	Exposure to visual treatment	0.5032163 (0.038)	
<i>oral</i>	Exposure to oral treatment	0.1185896 (0.634)	
<i>visoral</i>	Exposure to visual+oral treatment		28.37622 (0.065)
<i>ftf</i>	Exposure to face-to-face treatment	-0.0203511 (0.947)	9.055427 (0.613)
<i>beautygen</i>	Beauty*gender	-0.1009786 (0.000)	-4.389764 (0.026)
<i>beauty2</i>	Beauty ²	-0.0032905 (0.452)	
<i>beautyvis</i>	Beauty*Visual	0.0074828 (0.806)	-1.113739 (0.382)
<i>beautyoral</i>	Beauty*Oral	-0.030288 (0.230)	-2.713663 (0.052)
<i>beautyvisoral</i>	Beauty*Visual*Oral	-0.017456 (0.656)	0.2056298 (0.911)
<i>beautyftf</i>	Beauty*Face-to-face	0.0305662 (0.239)	3.261164 (0.014)
<i>convis</i>	Confidence*Visual	-0.0036577 (0.286)	0.0429187 (0.461)
<i>conoral</i>	Confidence*Oral	-0.0020403 (0.539)	0.018988 (0.723)
<i>convisoral</i>	Confidence*Visual*Oral	-0.0016288 (0.308)	-0.3701951 (0.074)
<i>confif</i>	Confidence*Face-to-face	-0.0004636 (0.907)	-0.00544 (0.981)
<i>position</i>	Position applied for	-0.1824847 (0.095)	-2.870631 (0.632)
Constant	Constant term		70.79155 (0.320)

Mills

<i>lambda</i>	17.20231 (0.040)
<i>rho</i>	1.00000
<i>sigma</i>	17.202309
