

# Linkages of Socio-Economic, Self-Perceptive and Cultural Factors to the Beauty Premium and Grade Point Average

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*The beauty premium has been associated with higher wages, more opportunities and even higher grades in many studies. Using a holistic framework, this study was conducted with the goal of linking socio-economic, self-perceptive and cultural factors to the beauty premium and student GPAs in a Korean university. Using data from Korean business students and beauty ratings from a pool of foreign and domestic professors, statistical analysis was performed to test for the existence of the beauty premium as well as measure the impact of various factors on student beauty perceptions and GPA. No significant amount of beauty premium was found and although the foreign beauty evaluators had higher attractiveness perceptions presumably based on cultural reasons, they had very little influence over GPA. Additionally, of all variables investigated, certain self-perceptive attributes influenced GPA the most.*

**Key Words:** Beauty Premium; discrimination; cultural beauty standards; university grades

**JEL Codes:** J16, J70, I23

## 1. Introduction

The beauty premium is a form of discrimination that has been receiving a fair amount of analysis over the past two decades. By definition, the beauty premium is a condition where individuals with the same economic or cognitive characteristics receive higher wages, evaluations or opportunities, and whose differences are systematically correlated with the above average physical attractiveness of the individual (Walcutt et al.

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2011, Hamermesh 2003, Hamermesh and Biddle 1994). Changing socio-economic and cultural trends have encouraged researchers to explain the beauty premium by applying it to an entire spectrum of studies with many studies determining that the beauty premium has some degree of influence. As it relates to the current study, this research will be conducted with the goal of linking socio-economic, self-perceptive and cultural factors to both the beauty premium and student GPA in a Korean university by analyzing data from Korean business students as well as beauty ratings from a pool of foreign and domestic professors.

This study will contribute to the overall body of knowledge related to the beauty premium and especially assist in identifying the impact of socio-economic, self-perceptive and cultural factors on both the theory and university student grades. In addition, it can also help university policy makers ensure fair grading systems. Lastly, few studies have been conducted on the beauty premium within Korea (Walcutt et al. 2011, Bissell and Chung 2009, Lee and Ryu 2010). By closely investigating the effects, the gaps in the literature will be more thoroughly covered.

Organized into four sections, this paper begins by identifying theories related to the beauty premium and its contributing factors. The following section relates to data collection, hypotheses, and the statistical approach used by researchers followed by a comprehensive analysis to explain the results and implications. The final section summarizes the findings on the study's hypotheses and limitations as well as linkages between the various contributing factors.

## **2. Literature Review**

The literature review is organized into three distinct sections relating to general studies on the beauty premium phenomenon, especially regarding grades and education, the two primary theories employed to explain the premium's existence, and supporting theories relating culture to the beauty premium.

### ***Beauty Premium Literature Overview***

Since the concept surrounding the beauty premium was proposed two decades ago, the literature has created a cornucopia of beauty premium literature. Notable examples include: the salaries of lawyers, both in public and private practice, are directly correlated to their looks (Biddle and Hamermesh 1998) and Italian university students are more likely to take credit classes if they are better looking and their final scores are better than those not as

good looking (Cipriani and Zago 2005). Few studies were conducted in Korea (published in English-language journals) regarding the beauty premium (Walcutt et al. 2011, Bissell and Chung 2009, Lee and Ryu 2010).

To date, most of the research conducted relates to the effects of physical attractiveness on wages; however, several studies have attempted to link this phenomenon to educational competence or student grade point averages. These studies have reported that grades and instructor expectations can be influenced by a student's appearance. Some studies found that school teachers' ratings of student attractiveness were significantly correlated with their expectations of the children's popularity, academic brightness, and confidence (Kenealy et al. 2002; Clifford and Walster 1973). This research was broadened by Ritts et al. (1995), arguing that teachers assess attractive students more favorably in terms of grades, intelligence and overall social skills. This study also pointed out that certain moderating variables, such as race and gender, can possess potential influence.

### ***Theoretical Models***

One common theme found amongst most studies is their attempt to identify the source of the beauty premium. Many theories have been identified as potential causes, however the two theories of the Discrimination-Preference Model and Statistical Discrimination, in particular, are most commonly used to explain the phenomena. The Discrimination-Preference model is largely based on the early work of Gary S. Becker (1957) and Kenneth J. Arrow (1973) and encompasses a competitive equilibrium model in which some individuals have a taste or preference for interacting with individuals of a particular group and are willing to sacrifice some amount of income or capital to satisfy their preference (Becker 1957, Arrow 1973, Bertrand and Mullainathan 2004, Hamermesh and Biddle 1994). Within the context of the current study, Korean teachers might find a higher utility for having only more physically attractive students in their classes and will therefore reward or penalize students' grades accordingly to satisfy this preference. Thus, this student GPAs would be directly impact.

Statistical Discrimination, also known as Imperfect Employer Information (Rothschild and Stiglitz 1973), is based on the perception that certain traits are correlated with productive characteristics and the evaluating person will develop certain expectations or judgments based on that perception. As applied to this research, business school professors may correlate beauty with certain productive characteristics which would then affect the professors' predictions of scholastic performance and, possibly, even the grades that they give. In addition to the preference theorized above, it is felt that beauty can be correlated

with unobservable productive attributes, such as the assumption that physically attractive students are more self-confident. This self-confidence is then directly expressed in better grades than those that are less endowed. This theory has received a great deal of attention and support from researchers (Cipriani and Zago 2005, Hamermesh and Parker 2003).

### ***Beauty Premium Cultural Component***

One deficiency found in previous studies is the general lack of cultural factors being included in beauty premium analysis. Earlier in the literature review, it was noted that teachers' expectations, based on factors such as beauty, could impact their assessments of students (Ritts et al. 1995).

With this link between attractiveness and grades, the definition of "beauty" must also be determined. Kenealy et al. (2002) pointed out that different cultures have different conceptions of physical beauty. Furthermore, it has been determined that the cultural ideal of beauty plays a key role in evaluating one's own appearance as well as that of others (Jung and Lee 2006). For example, researchers have identified significant differences between US and Korean evaluations of attractiveness in others due to several predictor variables (Bissell and Chung 2009). This argument was supported by Jung and Lee (2006) in that there are often large negative discrepancies between actual and ideal body images perceived by individuals who place a low cognitive importance on appearance (i.e. the USA) and those who place a high cognitive importance on it (i.e. Korea).

In Korea, a strong emphasis is placed on physical attractiveness (Jung and Lee 2006). The beauty premium phenomenon has been discussed extensively in domestic media as well as a few scholastic journals. For example, newspaper surveys have identified that a majority of female workers have experienced some form of appearance related discrimination at work and a most job seekers believe that plastic surgery will improve their employment chances (Park 2007, Yoon 2010). Academically, Lee and Ryu (2010) found that plastic surgery is effective in raising a client's beauty from unattractive to average and can confer a small monetarily return. In addition, Park (2007) argues that in a society atmosphere represented by "lookism", people's bodies or beauty that do not fit within the social ideal may suffer discrimination or prejudice because of their appearance.

### **3. Methodology**

This study started with the development and circulation of a questionnaire to business students at Korean University Y (hereafter referred to as University Y). The participating

students also supplied photographs that were evaluated by a panel of 10 foreign and 12 Korean professors for an outside assessment of their physical attractiveness. The questionnaire and beauty assessments were completed within March ~ April 2010.

### ***Questionnaire Development***

The base questionnaire was designed by surveying past studies for relevant variables. Further variables, including those highlighting pertinent Korean socio-economic and cultural factors were also identified and included in the questionnaire.

The final questionnaire asked ten structured questions regarding the three attribute types identified by this study: cultural, self-perception and socio-economic attributes. These attributes and their constituent variables are identified in Figure 1 as they will be tested statistically and correlated to student GPA.

**Table 1: Research Model Attribute Variables**

<u>Self-Perceived Characteristic Variables</u>
X1 = Self-Perceived Attractiveness
X2 = Self-Confidence
X3 = Self-Perceived Personality
X4 = Self-Perceived Popularity
<u>Socio-Economic Background Variables</u>
X5 = Self-Perceived High School Education Quality
X6 = Dummy Variable of Place of Origin (Urban = 1 / Rural = 0)
X7 = Dummy Variable for Father's Education (More than Community College = 1 / Less = 0)
X8 = Dummy Variable for Mother's Education (More than Community College = 1 / Less = 0)
X9 = Family Income
<u>Professor Rating Variable</u>
X10 = Professor Rated Appearance

The first information set captured by the questionnaire relates to attributes pertaining to student self-perceptions and includes questions regarding evaluations on self-perceived attractiveness, self-confidence and popularity, as well as introverted/extroverted personality type, and, excluding self-perceived attractiveness, were gathered through the use of 5-point Likert scales. One critical factor is the student's self-perception of their own beauty or physical attractiveness which utilized a 7-point Likert scale to provide a greater amount of information.

The second set of attributes collected dealt with socio-economic factors. These attributes were determined from questions relating to sex, urban vs. rural origin, student rating of high school educational quality, and educational level of the parents as well as family income. Socio-economic attribute data was all gathered through structured questions that limited the range of responses, i.e. family income included four ranges which covered the relative range of lower to upper class income brackets.

After the initial survey draft was completed, a pre-test was conducted to test the questionnaire. Based on the positive test results, the survey implemented.

### ***Data Collection***

The survey was presented in paper form to groups of upper class students attending business classes at University Y. In addition to filling out the questionnaire, students were also asked to submit color, portrait-style (headshot) photographs of themselves to be used in the beauty rating section of the study by the participating foreign and domestic professors. Student GPAs were directly provided by the university's administrative office.

Twenty two professors from different universities in Seoul were then used to evaluate the student provided photographs using 7-point Likert scales: 1 (very unattractive) to 7 (very attractive). The professors can be broken into two groups. The first group was six male and four female Caucasian professors from either the United States or Canada. The second group was made up of five male and seven female Korean professors. Both groups were further broken up into younger (~39 years old) and older (40+ years old) professors in roughly a 60:40 ratio. These ratios also reflect the typical professor demographic breakdown at the surveyed university. Lastly, none of the professors knew the participating students.

### ***Final Sample***

The final sample of participants from University Y in this study consisted of 142 business students, 91 females and 51 males. All final participants completed the questionnaire and submitted photographs for the professor ratings.

### ***Hypotheses***

Four hypotheses were identified and tested within the course of the study.

**Hypothesis 1:** The beauty premium exists within the context of student grades at Korean University Y.

**Hypothesis 2:** Student GPAs are highly affected by variables related to their socio-economic backgrounds.

**Hypothesis 3:** Student GPAs are highly affected by variables related to their self-perceived characteristics.

**Hypothesis 4:** Western professors will provide higher evaluations of Korean student beauty than Korean professors.

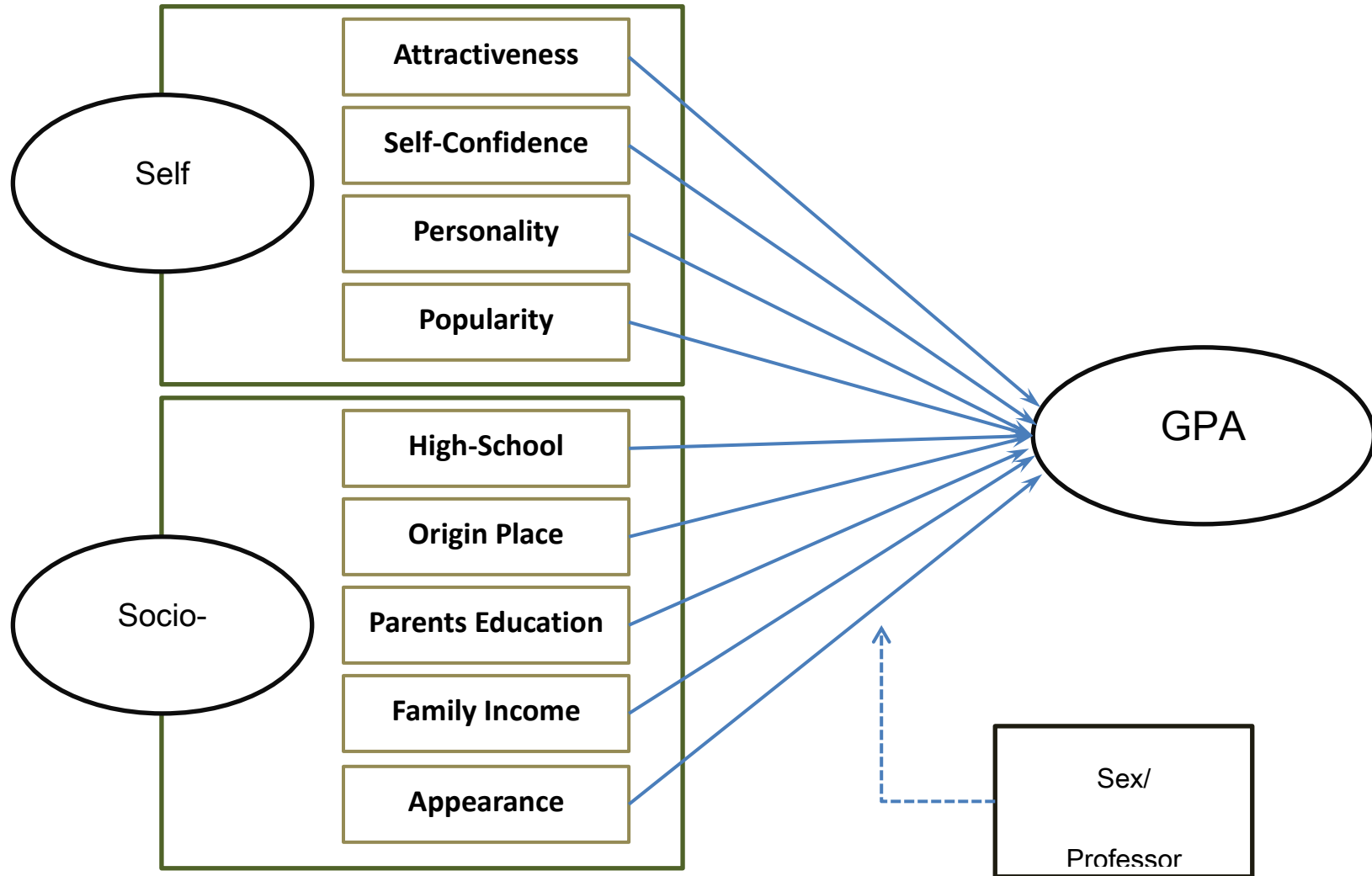
### ***Beauty Premium Research Model***

The empirical research model used to estimate the influence of the beauty premium on the GPA at University Y utilizes the following form:

$$(1) \text{ GPA} = \alpha + \sum_{i=1} \beta_i X_i + \varepsilon_i$$

In this research model,  $\alpha$  stands for the constant or intercept,  $\beta$  is slope coefficient and  $X_i$  stand for the various cultural, socio-economic and self-perception attribute variables that were factored into the equation. A list of attribute variables can be found below in Table 2. Lastly,  $\varepsilon_i$  stands for the error or residuals term. All unknown parameters,  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ , ...  $\beta_{10}$ , are estimated through the use of ordinary least squares.

Figure 1: Beauty Premium vs. GPA Research Attributes





## 4. Findings and Discussion

### ***Respondent Demographics and Profile***

The demographics of this sample include 91 females and 51 males of whom the majority originally came from middle class households in urban areas and typically possessed university educated parents.

**Table 2: Participating Student Demographics**

Variable	Value	Frequency	Percent
Sex	Female	91	64.1
	Male	51	35.9
Rural / Urban Origin	Urban	123	13.4
	Rural	19	86.6
Father's Education*	College Degree	75	72.7
	HS Diploma	28	27.3
Mother's Education*	College Degree	60	60.2
	HS Diploma	40	38.8
Income	More than 5M	22	15.5
	From 4M to 5M	22	15.5
	From 3M to 4M	32	22.5
	Less than 3M	63	44.4

Note: \*To simplify the regression, parental education Variables were condensed down from 6 categories to 2.

### ***Participant Self-Evaluation Attributes***

Analysis began with examining student self-evaluation data from table 3. Data for all factors in this category exceed the mean average, demonstrating that Korean students have high self-perceptions of their own attractiveness, self-confidence, personality and popularity.

**Table 3: Descriptive Statistics of Student Self-Perception and GPA**

Variable	N	Minimum	Maximum	Mean	Std Deviation
Attractiveness*	141	2.0	7.0	5.15	1.11
Self-Confidence**	141	1.0	5.0	3.88	0.84
Personality**	141	1.0	5.0	3.67	0.87
Popularity**	141	1.0	5.0	3.57	0.77
HS Edu. Quality**	142	1.0	5.0	3.90	0.91
Prof. Beauty Rating*	127	2.5	6.3	3.90	0.67
Foreign Professors	126	2.7	5.8	4.10	0.66
Korean Professors	127	2.1	5.9	3.65	0.73
GPA***	106	0.0	4.0	3.25	0.60

Note: \* 7 point Likert scales; \*\* = 5 point Likert scales; \*\*\*Maximum GPA is 4.5

### ***Professor Beauty Rating Evaluation***

Establishing the existence of the beauty premium requires a base-line identification of student attractiveness. Although student self-perceived attractiveness was identified through the questionnaire, an independent judgment conducted by a group of university professors was also used to rate the students' physical attractiveness.

Twenty two Korean and foreign professors, fitting the general demographics of University Y's business instructors, evaluated the students' photographs for physical attractiveness based on a 7-point Likert scale. The mean average, found on table 3, of those professors' rating evaluations was 3.9 with a standard deviation of .67.

The anticipation, through Hypothesis 4, was that foreign professors would have a higher mean beauty rating average than domestic professors. This hypothesis was accepted when a .45 mean average difference was identified between the two groups with the foreign professors mean average equaling 4.10 versus the Korean professor mean average of 3.65 (t-value = 8.78, p=0.00). This difference validates the idea that culture plays a role in the evaluation of beauty and that people in non-Western cultures may consider appearance differently than those of Western cultures (Jung and Lee 2006).

**Table 4: Descriptive Statistics of Foreign-Korean Professor Beauty Ratings**

	Mean	Std.	t	df	Significance.
	Differ	Dev			
Foreign - Korean	0.44	0.57	8.78	125	0.00

Analysis of the mean average ratings given by the professors was well below the student self-perceived beauty rating. Although the professors' provided mean average was 3.9, the student perceived average was considerably higher at 5.15. This finding is consistent with another study also conducted in a Korean university (Walcutt et al. 2011). However, from a cultural perspective, this finding unusual as some studies have found student beauty perceptions to be relatively correlated with those of their instructors (Kenealy et al. 2002). Other studies have estimated that people, such as Koreans, who potentially place a high cognitive importance on appearance often perceive large negative discrepancies between their actual and ideal beauty images (Jung and Lee 2006). This negative difference should place the student's perceived beauty ratings either relatively close to that of their instructors or the Likert's midpoint. Based on these perspectives, it is difficult to directly attribute the difference to a root cause. One theory that could account for some of the variation might result from the professors' only source of information to make their evaluations lay with the students' portrait-style photographs whereas the student self-perceptions are based on a more holistic image of themselves that includes a wide range of attributes (Feingold 1992).

### ***Statistical Analysis***

Multiple regression was used to investigate the relationship between the dependent variable of student GPA performance and independent variables of self-perception and socio-economic factors to address hypotheses 1-3.

#### ***Regression for All Students***

The first regression to find the beauty premium correlation for all participants showed that no factors significantly influenced student performance except that self-perceived personality had a slight negative impact on student GPA where the more out-going students have lower GPAs.

Further analysis was conducted to validate hypotheses 2 and 3 to identify the impacts of student socio-economic backgrounds and self-perceived characteristics on GPA. By factoring in only socio-economic background variables, it was found that none of these

variables significantly affected student GPAs. Focusing on self-perceived characteristic variables, the hypothesis was partially supported with a slight positive correlation of self-confidence and a slight negative one between self-perceived personality and student GPAs.

Overall, shown in table 5, socio-economic factors are insignificant for supporting the existence of the beauty premium and their effects on GPA in that the  $R^2$ -value only equals 0.121 and the F-value equals 0.966 with a  $p$ -value  $> 0.05$ . With two of the four self-perceived characteristics showing some degree of significance, hypothesis three is only partially supported.

**Table 5: Influence of Attributes on GPA: All Students**

Dependent Variable	Independent Variable	Non-standardized Coefficients	Standardized Coefficients	t-value	
GPA	(Constant)	3.048		4.749***	
	Sex	0.192	0.165	1.336	
	Attractiveness	0.000	0.000	-0.002	R <sup>2</sup> =0.121
	Self-Confidence	0.201	0.255	1.730*	
	Personality	-0.196	-0.282	-2.032**	
	Popularity	-0.060	-0.077	-0.576	F=0.966 (p=0.484)
	HS Edu. Quality	0.004	0.005	0.047	
	Rural-Urban	-0.038	-0.023	-0.177	
	Father's Edu.	-0.066	-0.055	-0.336	
	Mother's Edu.	-0.005	-0.004	-0.027	
	Family Income	0.025	0.050	0.426	
	Prof. Beauty Rating	0.080	0.097	0.778	

Note: Sex is dummy coded where Female=1, Male=0.

\*\*\*  $p$ -value  $< 0.01$  , \*\*  $p$ -value  $< 0.05$  , \*  $p$ -value  $< 0.1$

#### *Analysis for Female Students*

When the regression is correlated by sex, slightly different results are found. Female students, shown in Table 6, do not possess any significant amounts of beauty premium. However, self-perceived popularity seems to have a very slight positive impact and

possessing a more out-going personality has a slight negative influence on female students' grades.

Further regression analysis was conducted on hypotheses 2 and 3. By factoring in only socio-economic background variables, it was found that none of these variables significantly affected student GPAs. Focusing on self-perceived characteristic variables, the hypothesis was partially supported with a slight positive correlation of self-perceived popularity and the significantly negative one between self-perceived personality and the GPAs of female students.

Overall, socio-economic factors are insignificant for supporting the existence of the beauty premium and their effects on GPA. With two of the four self-perceived characteristics showing some degree of t-value significance, hypothesis three is also only partially supported.

**Table 6: Influence of Attributes on GPA: Female Students**

Dependent Variable	Independent Variable	Non-standardized Coefficients	Standardized Coefficients	t	
GPA	(Constant)	2.727		2.129**	
	Attractiveness	0.097	0.135	0.514	R <sup>2</sup> =0.359
	Self-Confidence	0.252	0.279	1.187	
	Personality	-0.440	-0.563	-2.323**	
	Popularity	0.427	0.403	1.733*	F=1.286
	HS Edu. Quality	-0.095	-0.095	-0.444	(p=0.294)
	Rural-Urban	-0.088	-0.057	-0.248	
	Father's Edu.	-0.361	-0.257	-0.984	
	Mother's Edu.	0.236	0.179	0.702	
	Family Income	0.083	0.143	0.702	
	Prof. Beauty Rating	-0.082	-0.093	-0.427	

\*\*\* p-value <0.01 , \*\* p-value <0.05 , \* p-value <0.1

#### *Analysis for Male Students*

Like female students, male students' GPAs were not greatly influenced by physical appearance. However, the analysis did show a small, positive degree of professor-rated

beauty premium. Also, as in the case of females, male students were also not affected by socio-economic attributes, but did show a slight negative effect based on their self-perceived popularity.

Overall, socio-economic factors proved insignificant for supporting the existence of the beauty premium on male student GPAs. In addition, with only one of the four self-perceived characteristics showing some degree of t-value significance, hypothesis three was also only partially supported.

**Table 7: Influence of Attributes on GPA: Male Students**

Dependent Variable	Independent Variable	Non-standardized Coefficients	Standardized Coefficients	t	
GPA	(Constant)	3.160		4.517***	
	Attractiveness	-0.102	-0.199	-1.010	R <sup>2</sup> =0.218
	Self-Confidence	0.171	0.249	1.273	
	Personality	-0.025	-0.040	-0.226	
	Popularity	-0.226	-0.368	-2.233**	F=1.224
	HS Edu. Quality	0.031	0.055	0.380	(p=0.303)
	Rural-Urban	-0.039	-0.021	-0.139	
	Father's Edu.	0.040	0.039	0.187	
	Mother's Edu.	-0.112	-0.113	-0.601	
	Family Income	0.003	0.006	0.039	
	Prof. Beauty Rating	0.204	0.245	1.706*	

\*\*\* p-value <0.01 , \*\* p-value <0.05 , \* p-value <0.1

### **Results**

This study addressed four research hypotheses. Hypothesis one addressed the existence of the beauty premium based on university student grades. This hypothesis was not validated with the socio-economic and self-perception factors proving to be largely insignificant outside of a slight positive degree in male students. Thus, it can be stated that the existence of a beauty premium, as it applies to student GPAs, does not exist in Korean University Y.

The second hypothesis assumed that GPA differences are highly affected by variables related to the student's socio-economic background and was completely denied with no socio-economic background variables showing any real influence over student GPAs.

Hypothesis three provided that GPA differences are affected by variables related to self-perceived characteristics and was partially supported by slight positive correlations between self-confidence and popularity in the samples including all students and only female students respectively. Slight negative correlations were also detected with self-perceived personality in the general and female student regressions and self-perceived popularity in the male student sample. Thus, this hypothesis was at least partially supported.

The last hypothesis questioned the influence of culture on student beauty evaluations. Through the analysis of the foreign and Korean professors' assessments, the hypothesis was definitively supported. The mean average difference between Korean and Western professors on a 7-point Likert scale was .45 with the foreign professors' mean average beauty evaluation being greater than Korean professor's.

## **5. Conclusion**

This study examined the beauty premium from the perspective of Korean university student GPAs. Based on the statistical analysis, no substantial evidence was found to validate any significant beauty premium which resulted in the failure of the study's hypothesis predicting the existence of the phenomenon.

However, the study did affirm the hypotheses that Western and Korean professors possess significantly different perceptions of beauty, students' socio-economic characteristics do not play a role in the determination of their GPAs and that student self-perceived attributes do play a partially positive or negative role in determining their grades.

A number of factors might have had a negative impact on the results of this study. One potential negative factor may be sample size. Also, improvements to the questionnaire might have also resulted in more realistic or improved answers. A third issue already discussed in the study regards the basis of how professors and students rated beauty.

Due to differences in similar studies based on university students, additional future research could also include a larger study to more fully identify the effects of self-perceived variables on student GPA in Korea.

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