Facial Attractiveness, Beauty Premium and Earnings: How does beauty premium differs between public and private sector?

Bachelor Thesis

Iva Velinova

Student Number: 326103

31. July. 2011

Thesis supervisor: Robert Dur

Department of Economics, Erasmus School of Economics,

Erasmus University Rotterdam

I would like to thank to Prof. Dr. Robert Dur for his comments, suggestions, remarks, support and assistance in the process of writing my thesis

ABSTRACT

This paper will examine the relationship between individuals' attractiveness, occupational sector choice and earnings separated by gender. It will try to estimate if such dependence exists for a large sample of data from Wisconsin Longitudinal Study. It is based on a paper by John Scholz and Kamil Sicinski (2011). The article discusses the effect of facial attractiveness of man earnings controlling for various background characteristics. As the beauty premium unarguably exists, this paper takes the research one step further and strives to estimates if beauty premium is observed in both public and private sectors. Due to number of differences in the structure, efficiency and the way of functioning of government institutions and private businesses the effect may by different or none existing in either of the sectors. That is from great scientific interest because it might help to explain why beauty premium is observed.

Key words: beauty, attractiveness, beauty premium, earnings, public sector, private sector, non-cognitive traits

Table of Contents

Introduction	4
Theoretical Framework	6
Data Description and Methods	12
Results	15
Conclusion	21
References	22
Appendixes	24

Introduction

In the science of Economics it is usually assumed that one's income and occupational choice depends on his or hers human capital. The widely used Rational Choice Model states that the individuals are fully aware of their preferences and their human capital and so they chose the best possible occupation for themselves. Furthermore, their earnings are fully dependent on the effort they exert and their human capital, often assessed in terms of education and cognitive abilities. But is it that how people actually behave in the labor market? As any other economic model, Rational Choice Model is a very simplified version of the world and it can be very useful in making different predictions about the labor market and the way it operates. However, if we want to learn something more about the way the job market operates then it will be necessary to extend it and partially relax these assumptions.

It is a common knowledge that when individuals are interviewed for a certain position far more is evaluated than just their IQ score, job experience and education. According to the economic and psychological literature on the topic the behavior of the individual, their unique personal traits and social background can also explain to a certain degree one's occupational choice and lifelong earnings. However, more recently the academic literature has focused on another kind of personal characteristics – one's looks. First examined by Hamermesh and Biddle (1994) the link between attractiveness and earnings has become a point of academic discussion. It is accepted that for certain professions beauty unarguably has productive value, but some academics argue that it will have a positive impact on productivity in almost any type of occupation as it improves social abilities. Other academics argue that this relationship holds not because of attractiveness itself, but rather because attractive people tend to be more confident sociable and thus the real predicting variable is not attractiveness but self-confidence and extroversion. A third often mentioned concern is that beauty has not productive

value at all but all the results shows pure discrimination towards unattractive people. Yet, another view is that beauty affects individuals' earnings not trough the labor market but through the marriage market. Still, undoubtfully one's attractiveness has at least some predictive power over their earnings and participation in the labor market.

This paper will examine the relationship between individuals' attractiveness, occupational sector choice and earnings separated by gender. It will try to estimate if such dependence exists for a large sample of data from Wisconsin Longitudinal Study. It is based on a paper by John Scholz and Kamil Sicinski (2011). The article discusses the effect of facial attractiveness of man earnings controlling for various background characteristics. It provides empirical evidence that beauty is valued in labor market independently from other cognitive and non-cognitive traits. Even though attractiveness is positively related to participation in certain high school activities, as sports, the attractiveness premium in latter age is not affected by them. It is also strongly correlated to extroversion and absence of neuroticism, both showing some relation with confidence (Scholz and Sicinski, 2011). As the beauty premium unarguably exists, this paper takes the research one step further and strives to estimates if beauty premium is observed in both public and private sectors. Due to number of differences in the structure, efficiency and the way of functioning of government institutions and private businesses the effect may by different or none existing in either of the sectors. That is from great scientific interest because it might help to explain why beauty premium is observed.

The paper is structured as follows –part two will examine the theoretical framework and previous research on the topic. It will begin with presenting empirical evidence on dependence between beauty and earnings and then some possible explanations for it will be examined. Part tree will examine the data and the statistical model used. The results will be presented and discussed in part four and the last part will conclude and suggest some areas for future research.

Theoretical Framework

It is a commonly shared opinion that attractive appearance and pleasant personality have positive influence over one's life. It seems well accepted fact that beautiful girls will be asked out more often and handsome men will get more positive reactions when asking a woman on a date. It is also widely believed that more attractive people are more likely to get different benefits in social interactions – from higher chance to be well accepted by the others to a free cup of coffee. Following the same common sense one might conclude that being attractive will lead to higher returns in different areas and so in the labor market and thus it may result in greater probability of being hired. Next to the common sense there is a lot of scientific evidence that tell us that attractiveness indeed has an influence in the labor market and wage determination. In the following section I will present two examples of such influence. However even though the effect is documented there is still not agreement on through what mechanism it appears.

In a study from 2005 Hamermesh and Parker investigate how university students rate their instructors. The researchers collect different descriptive measures of the instructors and the classes they teach among which lecturers' physical attractiveness. The results revealed significant increase in the ratings of the instructors perceived as better looking. However, there might be several reasons for that result. On one hand students may be taking into account irrelevant information as teacher's looks when they are asked to evaluate their teaching abilities. Furthermore, they might be purely discriminating against ugly instructors. On the other hand it is also possible that teacher's looks actually influence the quality of teaching. For instance, more beautiful teachers may have developed higher self-confidence which would make them better lecturers. It also might be the case that students are paying more attention to better looking instructors and remember more (Hamermesh and Parker, 2005). The last explanation would make beauty a productivity enhancing characteristic and the higher productivity will be what the ratings are reflecting.

In line with this way of reasoning is the first theory how beauty influence might be explained. The theory assumes that individuals' wages reflect their productivity in the job. If two persons produce the same value they should be paid the same. As different workers can be paid differently in different sectors exerting the same levels of effort, the worker will choose the sector in which he is paid the most. Similarly, when hiring the employer would choose the worker that produce the most value at given salary. The theory is a very simplified version of the rational choice theory and simply predicts that if the employer prefers more beautiful over plain ones, all else the same, then attractiveness should have a positive impact over the ability to complete the job. Similarly if more beautiful people are rewarded with higher wage, ceteris paribus, then their productivity should be higher. And if they are identical to the not so attractive ones, with respect to everything except beauty, then beauty should have some productivity enhancing property which is then reflected to the wage. Suppose that in different labor occupations the added productive value of beauty will differ, because of the job characteristics. For instance it might be higher in profession where there are higher amount of interactions with people i.e. sale representatives, advertising agents, managers, entrepreneurs, etc. Attractive salesmen could be more productive because clients prefer to interact with them; handsome managers might be more influential; students remember more when attractive instructors are teaching and so on. Then if the individuals are trying to maximize their returns, more attractive ones will be more likely to choose occupations in which beauty premium exists. However, if the beauty premium is the same in all occupations due to equal increase in productivity or discrimination, it can be expected random distribution of attractive people throughout the sectors. As an extreme example testing that theory can be quoted a resent research (Shah, 2010) testing the beauty premium among sex-workers in Mexico and Ecuador. If occupational segregation according to beauty was true, one could expect very high beauty premium due to the intimate nature of the relationship between worker and clients. Yet, the results show existence of a good looks premium and plainness penalty, but approximately of the same size estimated by researches examining not so

attractiveness sensitive occupations. Furthermore the distribution of plain, attractive and average looks was close to the one estimated by Hamermesh and Biddle (1994). These findings suppose that even though premium for attractiveness exist it might be the same among occupations. The existence of a beauty premium is also supported by another empirical research by Cipriani and Zago (2006) which concludes that beauty does enhance productivity. They investigate a sample of undergraduate students and their performance in oral and written exams. The authors discovered that students' attractiveness has significant influence on their grades even in written examinations where it cannot be observed by the examiner. Thus, grade increase should reflect some kind of productivity boost, most likely through increased confidence (Cipriani and Zago, 2006).

In fact the theory that beauty increases productivity because of its close relation with confidence has received a lot of support. It suggests that more attractive people will be treated differently as children and will feel more confident in their abilities as adults. The increased confidence can be used as a positive signal by employers and clients as more self-assured people will tend to bargain for higher wages and will increase their chance of higher earnings. Furthermore, they will have greater success in convincing both their employers and clients in their abilities and that they are suitable for the job. As support for this claim has often been quoted the example of another similar characteristic – height (Persico et al, 2004). A strong relationship between height and confidence has been discovered. People that have been tall in their teenage years have developed and preserved greater self-confidence than his peers. Interestingly enough, the relationship does not hold for tall adults that have grown up relatively late. In this sense greater physical attractiveness as teenager may also have developed higher confidence later in life. In an experiment designed to examine the effects of beauty on confidence and hiring behavior was discovered that beauty premium still exists even when attractiveness cannot be readily observed (Mobius and Rosenblat, 2005). The results showed that even though beauty does not affect productivity in solving analytical task it does increase the productivity estimates of both workers and

employers (Mobius and Rosenblat, 2005). Furthermore, beauty premium was observed not only in face-to-face interview settings but also in phone interviews. The authors attribute this effect to the greater self-confidence in the more attractive players and their more developed social skills. If increased confidence is indeed the primary cause of the beauty premium we would expect that the latter will significantly decrease or disappear when we take the effect of personal traits into consideration.

Another interesting hypothesis about the influence of beauty of one's earnings is the marriage market hypothesis. It states that women and men will be penalized in the marriage market when they choose to work in the opposite gender's occupation. This is due to socially accepted stereotypes of masculine and feminine behavior that could make individuals to feel uncomfortable if they departure form already accepted gender roles. Furthermore, men tend to take into account women's family roles and the influence the woman's career may have on the quality of rising children. Similarly women tend to find as more suitable for family life man working in masculine occupation and having higher income (Harper, 2000). Being married, leads to higher income, as part of the household for a woman. Yet, traditionally male occupations have much higher rewards than female ones and thus women will need to choose between occupations that gives them better position in the marriage market and such with higher earnings (Badgett and Folber, 2003). However, better looks will increase outcomes for both men and women in job and marriage. They will also have higher chances of being hired and of being married and of receiving higher earnings (Harper, 2000). As a consequence, greater attractiveness would increase earnings for women by giving them better chance of getting married. Furthermore, the beauty premium could reduce or cancel out the penalty for working in an occupation traditional for the opposite gender for both man and women, and thus allow for more diversity in occupational distribution between man and women.

The last theory discussed here for difference in earnings and occupational choice between man and women due to their attractiveness is pure discrimination. Some

employers may prefer to hire only more attractive people even if their productivity is equal or lower with that of the others. In addition, being attractive below average can be penalized by lower chances of finding a job, lower earnings or both. Moreover, self-employed people may face with customer discrimination, as the better looking of them are favored when the client is presented with a choice. An example of such situation is a study conducted by Daniel S. Hamermesh in 2006. He examines candidates for officers of the American Economic Association. Two times per year the association conducts a four person elections for two vacant spots - once for Vice President and once for members of Executive Committee. Before the elections the biographies of the nominees, including their pictures and other important details, are handed out to all the members of the Association. It is usual some people to participate in the elections in multiple years but to hand in different picture every year which allows one nominee's attractiveness to be assessed differently through the years when the other characteristics are the same. The results show that for all candidates in the elections and for those that have been nominated multiple times with the same picture the results are approximately the same – better looking than average candidates had higher chance of success. Even though this study does not indicate discrimination against ugly people, as the chances of success does not change from average to lower than average looking people it clearly demonstrate that better than average looks give higher chance of success even if the productivity level is the same (Hamermesh, 2006). Even if these results undoubtfully have influence on earnings and even though they do not show penalty for homeliness it is important to notice that this may not be the case in other occupations.

When we consider impact of beauty on earnings it will be sensible to account not only for gender but also for the sector the individuals are working in. It is often assumed that individuals choose jobs in government or in private business depending on their inner motivation and qualities. Public sector is also known to function differently and usually less effectively than the private one. However, workers will self-select into the sector in which they will receive satisfaction, usually in the form of higher income. As Hartog and

Oosterbeek (1993) conclude “public sector workers earn more in the public sector than private sector workers would have done, and vice versa, that private sector workers perform better in the private sector than public sector workers would have done.” Thus, it is at least likely various traits to have different productivity value and effect earnings in different ways. Furthermore, the wages in both sectors are shaped in different ways and that somewhat limits the ability of the government sector to attract high-quality workforce for some high skilled positions (Borjas, 2002). In private sector, wages are often determined by percentage of the daily revenue, the number of customers served or some other measure that reflects worker’s effort. In contrast the salary in the public sector is often a fixed amount per month. In that situation individuals with trait that will enhance at least the measures of job performance, if not the job performance itself, will probably prefer to work in private sector, as their income there will be higher. More sociable people, people with better selling abilities and management qualities could self-select themselves in the non-government sector. However, it is possible that facial attractiveness does affect the way one in perceived in social interactions and thus his or hers abilities to perform at any of these jobs. In addition, superior beauty is related to greater self-confidence, but more confident people will also be more likely to be self-employed or work in a place where the income will be more closely tied to their performance. Then, it is reasonable to expect that more attractive people might self-select in the private sector. In that case it will be questionable whether the difference in income between plenty and beautiful people is due to higher productive value of beauty or it just reflects the difference in wages between government and non-government workers. It is unlikely that the beauty premium will disappear when controlling for sectors, but it is possible to be significantly lower or non-existent in the public sector.

The next sections will use data from Wisconsin Longitudinal Study to examine the effect of beauty on earnings and major labor occupation. It will investigate if there are some influence of attractiveness on the choice of the worker between public and private sector. If such relationship is revealed it may need to be examined further.

Data Description and Methods

The data I have used is taken from the Wisconsin Longitudinal Study. It follows more than 10 000 students, graduated in 1975 from Wisconsin high schools through their adults' lives. The primary purpose of the study was to acquire basic information about the life course as people age. The data collected includes graduates' cognitive and non-cognitive abilities, education, social backgrounds, labor market position, family situation, health status etc. The information was acquired through mail surveys and phone interviews of the graduates, their parents, siblings and spouses and using their school records. The follow up surveys were conducted in 1957, 1964, 1975, 1977, 1993, and 1994. The sample mainly consists of white, non-Hispanic Americans, and thus underrepresents some minorities. However, the response rate is quite high, with around ninety percent response in 1992.

The figures for earnings used in the regression reflect total graduates earned income in hundreds of dollars for 1974. If it was less than hundred dollars, the variable is coded with null value and will not be included in the regressions. The years in which the surveys were conducted suits very well the purpose of this study as it capture the income of the respondents when they were, respectively, thirty five/ thirty six and fifty tree/fifty four. In 1974 they were still young professionals, developing their carrier and in 1992 they have already well-established professional life. Running regressions for both of these periods present a chance to compare the impact of attractiveness at different age. The variable "attractiveness" is used to assess the facial beauty of the individuals. To compose it photos of the high schools yearbook of the graduates have been rated by six women and six men on the scale from one to eleven. The judges recruited were from the same cohort as the graduates[1]. As an estimate for the cognitive

[1] For more information concerning the construction of this variable please check http://www.ssc.wisc.edu/wlsresearch/documentation/waves/?wave=ancillary&module=attr

abilities of the graduates is an IQ measure, constructed by using respondents Henmon-Nelson test raw scores and compared to the Wisconsin Test takers centile ranks and National test takers centile ranks[2]. To account for person character I have used "The Big Five" Personality traits, namely, extroversion, agreeableness, openness, neuroticism, and conscientiousness. Furthermore, to assess individuals' sense of purpose and ambition the variable "*purpose in life*" is used. The traits are estimates using standard psychology questions and the scores range from one (the lowest) to thirty six (the highest). The parental income measure reflects the household income in 1957 as it was recorded in the tax registers.

The data we use consists of actual personal earnings of the graduates in 1974 and 1992, estimate of their cognitive abilities, their personality traits, facial attractiveness, measure of drive in life, the income of their parents before 1957 and indication if the respondents are working in the public or private sector. All the variables have normal distribution and histograms of them, as well as descriptive statistics can be found in Appendix A. However, the histogram presented are drawn for the variables before the non-response or zero value is excluded so the reader can see that it includes only small parts from the population, and thus self-selective response of the sample is excluded.

In order to investigate if the influence of attractiveness is consistent with the theories and if it also influences public and private sector segregation number of different linear regressions will be run. As attractiveness is hard to compare across genders all of models will be separately estimated for men and women. That will also prevent the dilution of the results by female payment discriminations or various other effects that may occur due to gender differences.

Due to drop out of some of the respondents during the years, non-employed respondents, or having incomplete results for some of the variables in given years the

[2] For more information concerning the construction of this variable, check Appendix G, note COR652 from the WLS Information web page at: http://www.ssc.wisc.edu/wlsresearch/documentation/appendices/

overall number of respondents to run the regressions with is 6875. Still this is quite representative sample of the population of young adults in 1953.

First of all I will check whether beauty influence earnings, not accounting for any other factors. The results of the equations will show what the percentage change in earnings is with one point increase in the attractiveness score. Therefore the regression will look the following:

$$Ln\ (EARNINGS) = \beta_0 + \beta_1(ATTRACTIVENESS) + \varepsilon \qquad (1)$$

In this model β_0 stays for constant, β_1 is the percentage change in EARNINGS because of ATTRACTIVENESS and ε stays for random error. Next, to expand the model, I will also account for the level of cognitive abilities of the respondents, by adding IQ. This is important, as so far it has been theoretically proven that IQ has very strong influence over one's lifetime income. β_2 will be the coefficient accounting for percentage change in earnings due to different intellectual abilities. The models will change to following way:

$$Ln\ (EARNINGS) = \beta_0 + \beta_1(ATTRACTIVENESS) + \beta_2(IQ) + \varepsilon \qquad (2)$$

Next, we will also account for one's personality traits, which are also supposed to have influence not only on one's income, but also on the choice of occupation.

$$Ln\ (EARNINGS) = \beta_0 + \beta_1(ATTRACTIVENESS) + \beta_2(IQ) + \beta_3(EXTROVERTION) + \beta_4(AGREEABLENESS) + \beta_5(OPENNESS) + \beta_6(NEUROTICISM) + \beta_7(\text{CONSCIENTIOUSNESS}) + \varepsilon \qquad (3)$$

To fully complete the model one would also account for the parental income and purpose in life. Higher *Purpose in life* score may reflect better chance to succeed in life, as the people will be more determined to one particular goal. Coming form an household with higher income may also give some better chance to have higher earnings.

$$Ln\ (EARNINGS) = \beta_0 + \beta_1(ATTRACTIVENESS) + \beta_2(IQ) + \beta_3(EXTROVERTION) + \beta_4(AGREEABLENESS) + \beta_5(OPENNESS) + \beta_6(NEUROTICISM) + \beta_7(\text{CONSCIENTIOUSNESS}) + \beta_8(PURPOSE\ IN\ LIFE) + \beta_9(\text{PARENTAL INCOME}) + \varepsilon \quad (4)$$

All of the regression will be separately estimated about male and female respondents. Then they will be estimated again accounting simultaneously for gender and if the graduate is working in the public or in the private sector. Furthermore, the results will be estimated once for the individuals at the age of thirty five and once at the age of fifty three.

Results

I will first present the outcomes of the above mentioned regressions on how attractiveness affects earnings when accounted only for gender. Next they will be compared to the effects found when the sector segregation is also taken into consideration and all the findings will be briefly discussed. I will begin with the results concerning male respondents and continue with the outcomes about female graduates.

Overall the results are robust and consistent with the theory among the regressions that control for the same factors but have different explanatory variables. For instance all the models predicting the earnings of male individuals in 1974, that do not account for job sector, show significant influence of attractiveness on income at five percent influence level. The coefficient β_1, corresponding to the percentage change in income due to one unit change in the attractiveness score vary between 0.052 and 0.078. One's cognitive abilities, reflected by the IQ score, also have significant impact on earnings with β_2 between 0.198 and 0.235. This means that one point decrease in the attractiveness variable can be compensated by around 3.5 points increase in the cognitive abilities. When we control only for personality traits as in model (3) they are all significant and affect earnings positively except openness. Both extroversion and

conscientiousness have positive impact of respectively 0.068 and 0.056 while agreeableness and neuroticism affect income negatively. As the results for attractiveness decrease only by 0.007 it is highly possible that at least for male individuals the beauty premium is not caused by increased confidence. If we also control for the respondents' purpose in life and their parents' income the only significant personality traits are extroversion and agreeableness with values of 0.068 and -0.094. The coefficient for parental income and purpose in life are also significant and estimated at 0.109 and 0.146. In the models estimating income later in life, in 1992, the results are different. After variables accounting for personality traits are added into the regression the coefficient representing the beauty premium falls to 0.025 and becomes highly insignificant. When all of the other predictors are added it drops even further to 0.014 and its significance is 0.507. One possible explanation for the change of predictive power of attractiveness for earnings in 1974 and earnings in 1992 might be that it has an effect only while the respondents are still developing their careers. Even though according the scientific literature the relative attractiveness of an individual does not change over time, once he or she becomes established professional productive value of attractiveness may decrease. It is also possible that attractiveness was used only as an indication of certain characteristics that cannot be observed at thirty five but are readily observable at fifty three. Furthermore, if we assume job discrimination it might be that employers have preferences for more attractive individuals only among young individuals and not among more mature ones. Yet another possibility is that attractiveness has effect on earnings only while the individuals are in the dating and marriage market and not when they get out of it.

Next, in order to check for different effects, I have divided that data and run separate regressions for men working in the public and private sector. The first thing to notice is that the only predictors that are always significant are the IQ variable and one's conscientiousness for mature individuals. Furthermore one's purpose in life and parental income has also very high effect over the reward in the public sector. As all non-cognitive traits turn insignificant when the estimate about purpose is added the

results can be interpreted as a support of the often stated claim that the inner motivation is very important in the sector. However, even though the all the regressions about mature individuals earnings predict attractiveness as insignificant it is interesting to notice that the coefficient β_1 is also negative. This result is quite peculiar especially because before accounting for one's purpose the results for 1974 show significant positive relationship between attractiveness and income.

Model Includes:	**Men (1974), Both sectors**	**Men (1992), Both sectors**	**Men (1974), Public Sector**	**Men (1992), Public Sector**	**Men (1974), Private sector**	**Men (1992), Private sector**
(standard error)	*R^2=.006*	*R^2=.002*	*R^2=.007*	*R^2=.001*	*R^2=.006*	*R^2=.003*
Attractiveness	**0.078 (.000)**[3]	**0.042 (.028)**	**0.081 (.044)**	-0.027 (.527)	**0.080 (.000**)	**0.057 (.008)**
(standard error)	*R^2=.061*	*R^2=.070*	*R^2=.160*	*R^2=.027*	*R^2=0.054*	*R^2=0.084*
Attractiveness	**0.069 (.000)**	**0.039 (.036)**	**0.074 (.048)**	-0.028 (.514)	**0.070 (.000)**	**0.052 (.012)**
IQ	**0.235 (.000)**	**0.261 (.000)**	**0.391 (.000)**	**0.161 (.000)**	**0.219 (.000)**	**0.284 (.000)**
(standard error)	*R^2=.076*	*R^2=.087*	*R^2=.160*	*R^2=.079*	*R^2=.071*	*R^2=.104*
Attractiveness	**0.062 (.002)**	0.025 (.242)	**0.078 (.073)**	- 0.067 (.151)	**0.062 (.007)**	**0.044 (.061)**
IQ	**0.236 (.000)**	**0.234 (.000)**	**0.348 (.000)**	**0.124 (.012)**	**0.226 (.000)**	**0.262 (.000)**
Extroversion	**0.068 (.008)**	**0.054 (.039)**	0.037 (.501)	-0.048 (.382)	**0.074 (.012)**	**0.076 (.010)**
Agreeableness	**-0.094 (.001)**	**-0.103 (.000)**	-0.080 (.189)	-0.032 (.582)	**-0.108 (.001)**	**-0.121 (.000)**
Conscientiousness	**0.056 (.057)**	**0.091 (.001)**	**0.110 (.081)**	**0.207 (.001)**	**0.055 (.100)**	**0.073 (.023)**
Neuroticism	**-0.041 (.043)**	**-0.073 (.000)**	**-0.081 (.066)**	-0.010 (.831)	-0.030 (.196)	**-0.088 (.000)**
Openness	0.020 (.456)	**0.061 (.021)**	0.037 (.511)	**0.110 (.044)**	0.023 (.454)	0.047 (.112)
(standard error)	*R^2=.105*	*R^2=.118*	*R^2=.188*	*R^2=.104*	*R^2=.102*	*R^2=.138*
Attractiveness	**0.052 (.009)**	0.014 (.507)	0.068 (.116)	-0.074 (.111)	**0.051 (.024)**	0.032 (.174)
IQ	**0.198 (.000)**	**0.204 (.000)**	**0.336 (.000)**	**0.121 (.014)**	**0.180 (.000)**	**0.223 (.000)**
Extroversion	**0.044 (.085)**	0.025 (.334)	0.016 (.770)	-0.066 (.220)	**0.048 (.099)**	0.045 (.124)
Agreeableness	**-0.097 (.001)**	**-0.119 (.000)**	-0.076 (.206)	-0.029 (.612)	**-0.114 (.001)**	**-0.139 (.000**)
Conscientiousness	0.025 (.407)	0.043 (.137)	0.091 (.153)	**0.180 (.003)**	0.017 (.608)	0.021 (.515)
Neuroticism	-0.028 (.165)	**-0.055 (.008)**	-0.069 (.119)	0.010 (.827)	-0.015 (.496)	**-0.069 (.003)**
Openness	-0.002 (.933)	0.031 (.230)	0.012 (.831)	0.084 (.124)	0.001 (.976)	0.019 (.515)
Purpose in Life	**0.109 (.000)**	**0.171 (.000)**	**0.103 (.036)**	**0.139 (.007)**	**0.118 (.000)**	**0.177 (.000)**
Parental Income	**0.146 (.000)**	**0.102 (.000)**	**0.137 (.002)**	**0.089 (.056)**	**0.146 (.000)**	**0.110 (.000)**

[3] All significant values are darker

In comparison with the public sector attractiveness is much more important for private businesses. It is highly significant in almost all regressions except for model (4) for 1992. Furthermore, the from personality traits there is a penalty from around 11% of earnings for being agreeable for young individuals and between 12% and 14% for more mature ones. In 1992 there is also a significant penalty for neuroticism of around 8 %. To compensate one point decrease in attractiveness in 1974, a graduate will need around 3.5 point increase in IQ, or one point increase in either of the significant personality traits (respectively decrease for attractiveness). In 1992 the trade of between beauty and IQ will be between 5.5 and 6 points rise in the cognitive ability for every beauty point decrease. Purpose in life and parental income again seems to be increasing one's reward. These results suggest that businesses do value attractiveness higher. It might be that as more efficient and flexible than the public sector they better recognize the productivity value of attractiveness. Another possibility is that due to the difference of the tasks in public and private sector beauty has greater and prolonged effect in the latter one. In addition discrimination toward plain people could be easier in the private sector because of specific requirements in the wage determination in the public sector. In brief it can be concluded that for males bring attractive is relatively more important and rewarded for young individuals and for the ones' working for private businesses.

The results for females are far more peculiar. To begin with for all regressions estimating the effect on earnings in 1974 β_1 is negative. In addition it is much more often significant for the for mature women than for younger ones. The premium is also much lower compared to that of the male respondents.

The outcomes for attractiveness for 1974 for both sectors are negative and fluctuate around ten percent confidence level. It is interesting that in all of the regressions estimating the effects on earnings in 1974, beauty is negatively related to income and insignificant[4]. For this period even IQ does not seem to have an effect on earnings. However, most of the personality traits, except extroversion are highly significant. The

[4] Except for regression (3) for both sectors, where it is still negative but significant

strongest influences have agreeableness penalty and openness premium, both around 11 percent. Conscientiousness and Neuroticism also have stable effects at ten percent confidence level.

Purpose in life and parental income are also insignificant. Even when it is accounted for different sectors, attractiveness is highly insignificant and negatively related to earnings. However, the IQ has an effect in both sectors when it is the only control variable. Still, it is quite low in the private sector increasing earnings with only 4.5 percent for one point increase in the cognitive abilities. When personality traits are also added to the regression IQ coefficients becomes 0.014 and has no statistical effect on earnings. This finding is very surprising and is not consistent with any of the theoretical findings in the field. The reason for this outcome is more likely insufficient sample size of women working in the private sector than an actual absence of influence of females' beauty and intelligence on income.

Overall, attractiveness is significant mainly for more mature women, in the private sectors and in the regressions that do not account for sector. In 1992 attractiveness is has substantial positive effect on wages in the private sector and the undivided data. For private business one point increase in facial beauty leads to six to nine percent rise in income and can compensate around two points decrease in IQ. Furthermore, it can off – set 1.15 points decrease in openness, 2.35 points reduction in conscientiousness or 1.71 points increase in neuroticism. For the female government workers being prettier have no significant effect on income. Furthermore, the relationship with earnings seems to be negative.

A possible explanation of these results is a limitation of the date concerning women. As the graduated of 1953 have grown up in times in which the role of women in the society was mainly a mother and a housewife and not so much a member of the labor force.

Model Includes:	**Women (1974) Both sectors**	**Women (1992) Both sectors**	**Women (1974) Public Sector**	**Women (1992) Public Sector**	**Women (1974) Private sector**	**Women (1992) Private sector**
(standard error)	*R^2=.001*	*R^2=.003*	*R^2=.001*	*R^2=.003*	*R^2=.001*	*R^2=.008*
Attractiveness	-0.025 (.238)	**0.052 (.008)**	-0.032 (.481)	-0.055 (.234)	-0.024 (.319)	**0. 090(.001)**
(standard error)	*R^2=.008*	*R^2=.029*	*R^2=.049*	*R^2=.039*	*R^2=.003*	*R^2=.037*
Attractiveness	-0.035 (.101)	**0.034 (.078)**	-0.045 (.304)	-0.062 (.173)	-0.030 (.221)	**0.069 (.007)**
IQ	**0.088 (.000)**	**0.163 (.000)**	**0.220 (.000)**	**0.190 (.000)**	**0.045 (.064**)	**0.171 (.000)**
(standard error)	*R^2=.020*	*R^2=.057*	*R^2=.075*	*R^2=.083*	*R^2=.012*	*R^2=.063*
Attractiveness	**- 0.041 (.088)**	**0.039 (.061)**	-0.079 (.112)	-0.070 (.151)	- 0.027(.343)	**0.066 (.020)**
IQ	0.039 (.130)	**0.114 (.000)**	**0.096 (.073)**	**0.159 (.002)**	0.014 (.640)	**0.125 (.000)**
Extroversion	-0.022 (.491)	**-0.050 (.068)**	-0.056 (.343)	-0.036 (.558)	-0.032 (.394)	**-0.080 (.033)**
Agreeableness	**-0.115 (.001)**	**-0.067 (.024)**	**-0.123 (.062)**	**-0.116 (.065)**	**-0.103 (.013)**	-0.040 (.332)
Conscientiousness	**0.067 (.056)**	**0.103 (.001)**	-0.023 (.728)	0.064 (.319)	**0.075 (.066)**	**0.155 (.000)**
Neuroticism	**-0.047 (.058)**	**-0.104 (.000)**	-0.037 (.454)	**-0.098 (.047)**	**-0.058 (.046)**	**-0.113 (.000)**
Openness	**0.107 (.001)**	**0.124 (.000)**	**0.237 (.000)**	**0.160 (.007)**	0.056 (.135)	**0.076 (.046)**
(standard error)	*R^2=.021*	*R^2=.061*	*R^2=.076*	*R^2=.088*	*R^2=.013*	*R^2=.066*
Attractiveness	**-0.040 (.100)**	0.033 (.115)	**-0.082 (.100)**	-0.076 (.123)	-0.024 (.403)	**0.060 (.035)**
IQ	0.040 (.120) -	**0.105 (.000)**	**0.099 (.069)**	**0.150 (.005)**	0.017 (.565)	**0.119 (.000)**
Extroversion	0.021 (.503)	**-0.061 (.026)**	-0.054 (.364)	-0.044 (.469)	-0.029 (.431)	**-0.089 (.019)**
Agreeableness	**-0.116 (.001)**	**-0.078 (.009)**	**-0.116 (.085)**	**-0.144 (.078)**	**-0.101 (.016)**	-0.045 (.271)
Conscientiousness	**0.066 (.066)**	**0.087 (.005)**	-0.014 (.843)	0.064 (.326)	**0.077 (.064)**	**0.139 (.001)**
Neuroticism	**-0.047 (.057)**	**-0.095 (.000)**	-0.039 (.429)	**-0.094 (.057)**	**-0.061 (.036)**	**-0.103 (.000)**
Openness	**0.108 (.001)**	**0.113 (.000)**	**0.241 (.000)**	**0.155 (.008)**	0.061 (.107)	**0.068 (.075)**
Purpose in Life	0.002 (.956)	**0.069 (.006)**	-0.036 (.565)	0.020 (.731)	-0.015 (.663)	0.052 (.117)
Parental Income	-0.015 (.530)	**0.039 (.071)**	0.022 (.660)	0.070 (.161)	-0.031 (.279)	0.033 (.252)

Even though in the 1960's many pro-women federal laws were passed –ensuring equal pay and forbidding discrimination and hiring bias against women labor market conditions for females were much different of this for men. Women were underpaid and rarely promoted. Furthermore, social pressure was still trying to impose the traditional gender role. In the presence of all this social conditions, it is possible that our sample underrepresents the female population. Also it might be that more attractive

women has successfully self-selected out of the labor force through the marriage market. In addition, the negative relation between the attractiveness and earnings in the regressions of 1974 could be due to the fact that more attract women were seen as more likely to get married and in these decades married women were perceived as non-permanent workers. Also in 1974, the graduates were still young, at age that their prospective employers might still have feared that they may soon get married and exit the labor force. Given the complicated social status of women in these times it is likely that the attractiveness premium of women can still be similar to those of men but need to be investigated in the latter generations.

Conclusion

In this paper I have estimated the beauty premium for men and women working in the public and private sectors in 1974 and 1992 using data of Wisconsin Longitudinal Study. The results for males show that younger individuals' attractiveness is important in both sectors. The beauty premium is between 5 and 7 percent for the graduates working in 1974 and below 5 percent for the respondents working in 1992. As graduates age facial beauty becomes unimportant in the public sectors. The outcomes of the data examination clearly shows there is a distinction in the beauty premium in the government and non-government sector as well as a difference between younger and more mature individuals. Possible reason for that is that attractiveness is used both as a signaling and productive trait. As a signaling trait it has an effect only while the respondents are still developing their careers. One they are experienced and established professionals the influence of the beauty premium reflects only the productive value of beauty which is present only in the non-government sector. On the other hand, attractiveness may not be used at all as a signaling variable, but its productive value may decrease over time. Furthermore, if we assume job discrimination it might be that employers have preferences for more attractive individuals only among young people and not among more mature ones. Yet another possibility is that attractiveness has effect on earnings only while the individuals are in the dating and marriage market and

not when they get out of it. Beauty premium having higher significance in the business sector may also have a couple of different explanations. It might be influenced by the different tasks the employees are performing in the sector or due to the way wages are determined. Also it is possible that discrimination against plainer individuals is less possible in the public sector die to some the existence of some specific requirements for hiring and wage shaping.

The results for females are not completely clear. This could be because in this paper I use data from the second part of the twentieth century, when social status and participation of women has rapidly changed. Given the complicated social status of women in these times it is likely that the attractiveness premium of women can still be similar to those of men but need to be investigated in the latter generations. However it is still clear that there exists a difference between the beauty premium for females in the public and private sector.

The outcomes of this paper suggests that there are certain topics that could be used as a points of discussion for further research in order to clarify the existence of beauty premium. First of all the research could be replicated using data from more recent years and thus avoid the effect of the social circumstances for women. Furthermore, in the sample for the same year could be examine participant of different age groups. This would show if effect found for different age is truly significant or if it originates from change in the social perceptions through the years.

References

Arunachalam, Raj, Manisha Shah.2010. "The Prostitute's Allure: Examining Returns to Beauty, Productivity and Discrimination" IZA Discussion Paper No. 5064, July 2010. Internet address: ftp://ftp.iza.org/RePEc/Discussionpaper/dp5064.pdf . Last accessed: 26-07-2011.

Badgett, M. V. Lee, Nancy Folbre. 2003. "Job Gendering: Occupational Choice and the Marriage Market". *Industrial Relations,* vol. 42, No. 2. Blackwell Publishing.

Borjas, George J. 2002. “The Wage Structure and the Sorting of Workers into the Public Sector”. National Bureau of Economic Research, Cambridge , MA, the USA. Internet address: http://www.nber.org/papers/w9313 . Last accessed: 26-07-2011.

Bowles, Samuel, Herbert Gintis, Melissa Osborne. 2001. “The Determinants of Earnings: A Behavioral Approach”. *Journal of Economic Literature,* vol. 39, No. 4. pp. 1137-1176. American Economic Association.

Cipriani ,Giam Pietro, Angelo Zago.2006. “Productivity or Discrimination? Beauty and the Exams” Department of Economics, University of Verona, Italy , ESPE 2006 conference

Hamermesh, Daniel S., Jeff E. Biddle. 1994. “Beauty and the Labor Market”. American Economic Review 84(5), p. 1174–1194.

Hamermesh, Daniel S., Amy Parker. 2005. “Beauty in the Classroom: Instructors’ Pulchritude and Putative Pedagogical Productivity”. *Economics of Education review 24, p. 369-376*. Elsevier Ltd.

Hamermesh, Daniel S. 2006. “Changing Looks and Changing “Discrimination”: The Beauty of Economists”. *Economics Letters 93, p. 405-412*. Elsevier B.V.

Harper, Barry. 2000. “Beauty, Stature and the Labour Market: A British Cohort Study”. *Oxford Bulletin of Economics and Statistics, 62, Special Issue (2000) 0305-9049.* Blackwell Publishers Ltd, Oxford, the UK.

Hartog, Joop, Hessel Oosterbeek. 1993. “Public and Private Sector Wages in the Netherlands*”. European Economic Review,* 37, p. 97-114. North-Holland.

Jackson, Michelle. 2006. “Personality Traits and Occupational Attainment”. *European Sociological Review*, vol. 22, No. 2, April, p. 187-199. Oxford University Press.

Mueller, Gerrit, Erik Plug. 2006. “Estimating the Effect of Personality on Male and Female Earnings”. *Industrial and Labor Relations review,* 60, No. 1. Cornel University.

Mobius, Markus M., Tanya S. Rosenblaty. 2006.”Why Beauty Matters”. *The American economic Review,* Vol.96, No.1, March.p.222 -247. American Economic Association.

Nyhus, Ellen K., Empar Pons. 2005. “The effect of personality on earnings”. *Journal of Economic Psychology* Vol. 26, Issue 3, p. 363-384 .Tilburg Symposium on Psychology and Economics: Games and Decisions.

Persico N., A. Postlewaite and D. Silverman. 2004. “The Effect of Adolescent Experience on Labor Market Outcomes: The Case of Height”. *Journal of Political Economy*, 112, 5, p. 1019-1053.

Ravina, Enrichetta. 2008. “Love & Loans: The Effect of Beauty and Personal Characteristics in Credit Markets”. Available at SSRN: http://ssrn.com/abstract=1107307 . Last accessed: 26-07-2011.

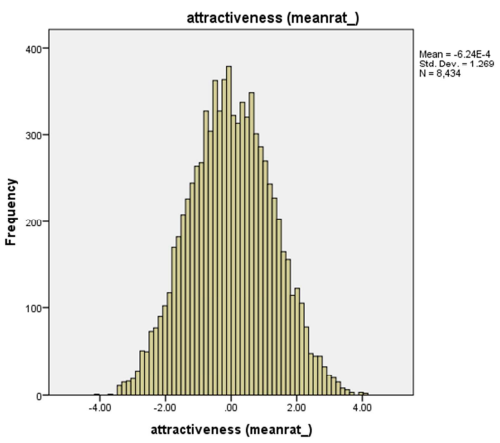
Robins, P. K., J.F. Homer, M.T. French. 2011. “Beauty and the Labor Market: Accounting for the Additional Effects of Personality and Grooming”. *LABOUR*, 25: 228–251.

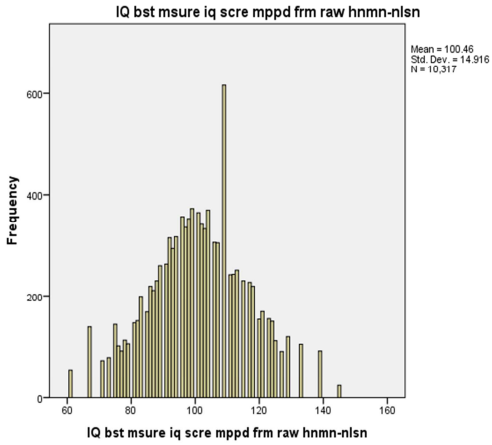
Scholz, John Karl, Kamil Sicinski. 2011. “Facial Attractiveness and Lifetime Earnings: Evidence from a Cohort Study” Working Paper. University of Wisconsin – Madison.

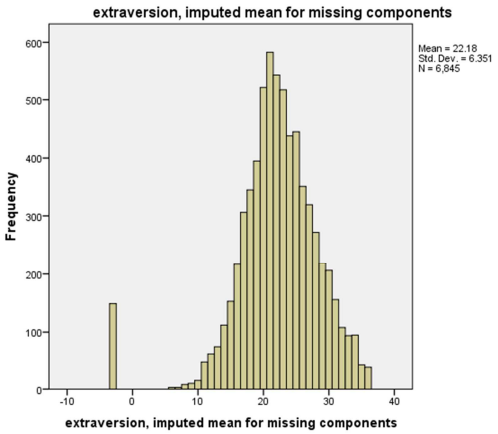
Valle, Matthew. 2004. “In search of the 75 Cents-on-the-Dollar Woman”. *Equal Opportunities International, Volume 23, Number 6*. p.31 - 37

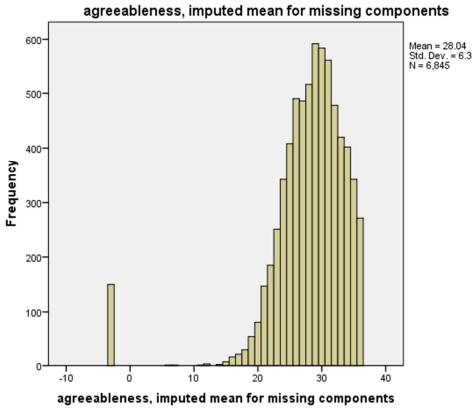
Appendix: Descriptive Statistics

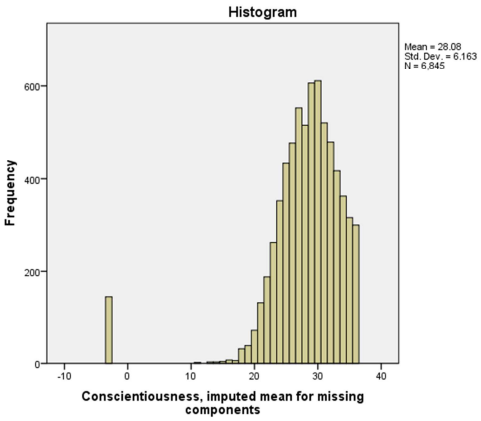
Appendix A: Histograms

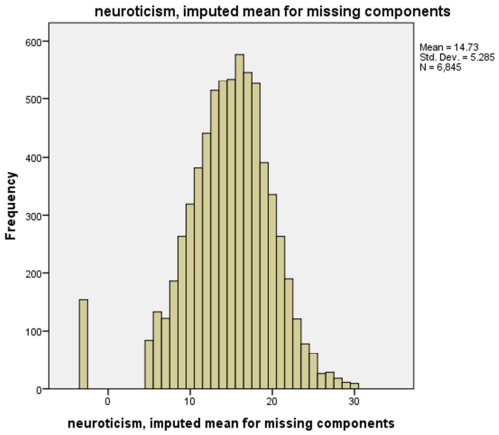


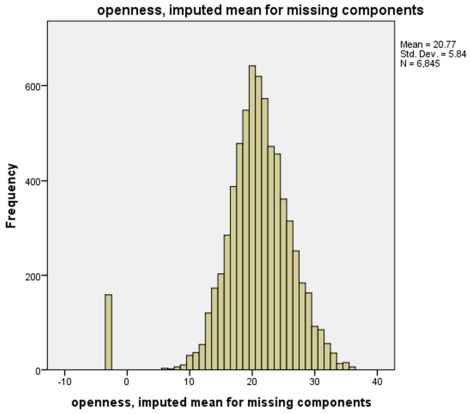


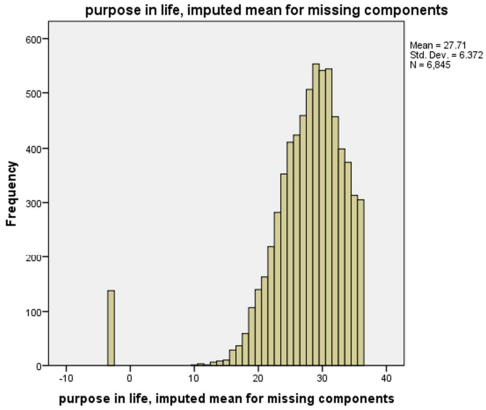


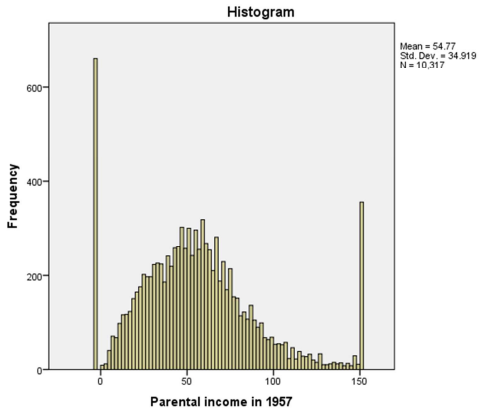


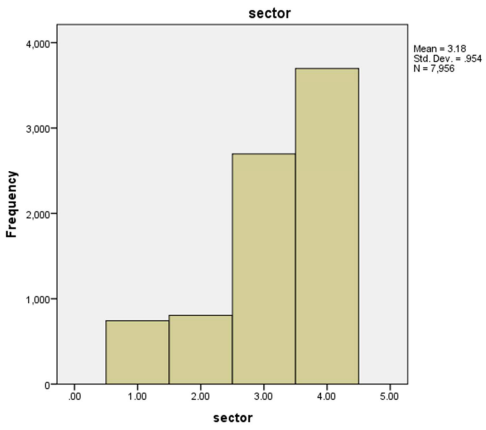




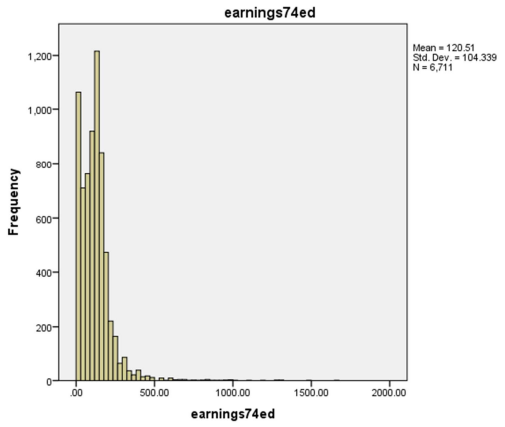


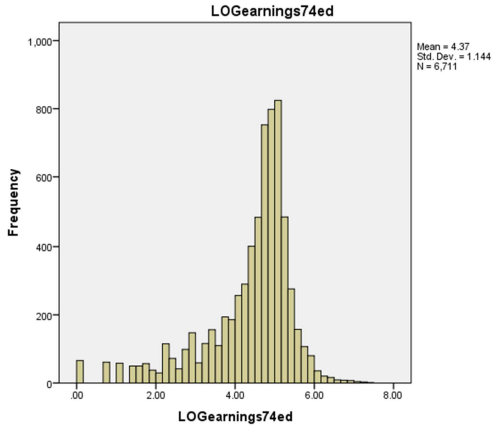


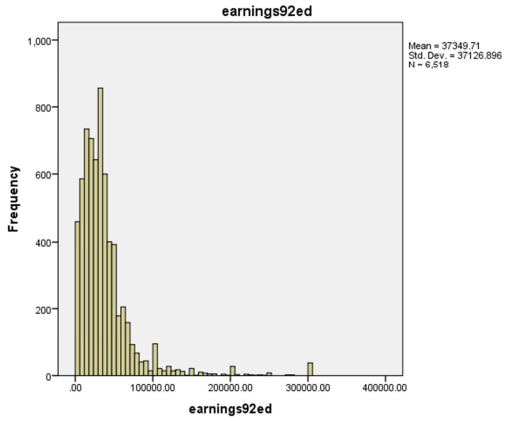


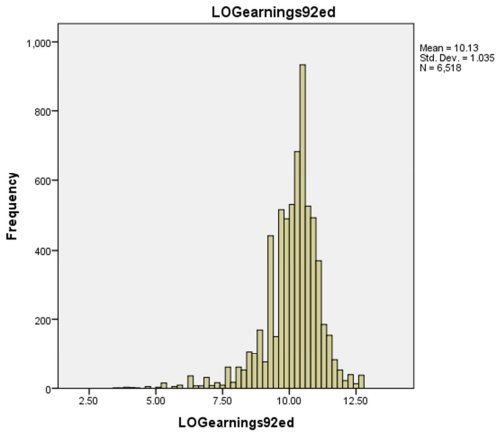


1. Women in public sector
2. Men in public sector
3. Women in private sector
4. Men in private sector


earnings74ed
Mean = 120.51
Std. Dev. = 104.339
N = 6,711
Frequency
earnings74ed


LOGearnings74ed
Mean = 4.37
Std. Dev. = 1.144
N = 6,711
Frequency
LOGearnings74ed


earnings92ed
Mean = 37349.71
Std. Dev. = 37126.896
N = 6,518
Frequency
earnings92ed


LOGearnings92ed
Mean = 10.13
Std. Dev. = 1.035
N = 6,518
Frequency
LOGearnings92ed

Appendix B: Tables

	N	Mean	Std. Deviation
attractiveness (meanrat_)	8434	-.0006	1.26918
IQ bst msure iq scre mppd frm raw hnmn-nlsn	10317	100.46	14.916
extraversion, imputed mean for missing components	6845	22.18	6.351
agreeableness, imputed mean for missing components	6845	28.04	6.300
conscientiousness, imputed mean for missing components	6845	28.08	6.163
neuroticism, imputed mean for missing components	6845	14.73	5.285
openness, imputed mean for missing components	6845	20.77	5.840
purpose in life, imputed mean for missing components	6845	27.71	6.372
earnings74ed	6711	120.5059	104.33877
earnings92ed	6518	37349.7059	37126.89607
LOGearnings74ed	6711	4.3653	1.14395
LOGearnings92ed	6518	10.1262	1.03484
Valid N (listwise)	3232		

		Valid Percent
Valid	female, public sector	9.4
	male, public sector	10.2
	female, private sector	33.9
	male, private sector	46.5
	Total	100.0