Labour market entrants; is there a link between intelligence and choice of worksector?

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Abstract

Many people share the thoughts that the government is unable to attract most intelligent people. It is believed that many of them simply walk away to the private sector. In this thesis, I managed to find out whether this is truly the case or that the government faces no problems regarding the attraction of intelligent employees. Through a number of regressions with IQ as intelligence measure, I conducted the research. The main conclusions from this research are that without correcting for education it turns out that the more intelligent labour market entrants start working in the public sector, while after correcting for educational level the most intelligent labour market entrants have no clear preference towards the public or private sector. Besides, it turned out that the public sector pays more per IQ point for labour market entrants.

Keywords *IQ, worksector, public, labour market, entrants*

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1. Introduction

1.1 Intelligent people

"Many commentators argue that the federal government faces a quality crisis. Part of this larger crisis is the concern that the best minds will be and have been going to the private sector and the least capable are entering public service" (Crewson, 1995, page 628). Many people share the fright stated in this quote, that much intelligent people walk away from the government and start working in the private sector. According to the author, the following explanations have been offered according to the lower entrant quality of the government: "perception that quality is a low priority in the Office of Personnel Management, poor pay and the inability of the federal government to compete with the private sector" (Crewson, 1995, page 629). The vision and freight that the government is indeed unable to attract most intelligent employees has been shared across generations and is still present. I decided to do research on this topic.

1.2 Aspirations

In order to conclude whether the government is capable of attracting the most intelligent employees, I decided to take IQ as measure for talent. What as far as I know, has not been researched before, is whether labour market entrants with a relatively high IQ mostly start working in the public sector or in the private sector. I also want to discover whether having a high IQ pays more in the private or public sector because possible salary differences could explain a tendency to one sector. My aspirations came from Robert Dur and Josse Delfgaauw who have done much research about talent, ability, motivation and self selection in the past. They concluded from research (Dur and Delfgaauw, 2009) that among 53 year old labour market entrants who are already active on the labour market for a decent number of years, the entrants with the higher IQ level self select into the private sector; IQ pays more in the private sector than in the public sector at the age of 53, which induces most intelligent people to work in the private sector. Interesting is that their research was also based on the Wisconsin Longitudinal database, which makes their research findings pretty comparable to mine. They conducted also other interesting research (Managerial talent, motivation and self-selection into Public management), in which they conclude that higher able managers

self select into the private sector while this is actually efficient. More of the latter research can be read in the Literature part.

In order to research among new labour market entrants, I proposed a research question, which I divided into three sub questions.

Research question:

Do labour market entrants with a relatively high IQ choose more often for the private sector than for the public, and to what extent does IQ influence wage in both sectors?

Sub questions:

1. *Does IQ influence the choice of work sector for a respondent's first job?*

2. *Does IQ still influence or still not influence choice of work sector when there has been corrected for educational level?*

3. *Does the private sector pay more per IQ point than the public sector?*

1.3 Hypotheses

I expect that graduated students with a relatively high IQ more often start to work in the private sector. They choose for the private sector because I think that this sector pays more, at least in the long run. I think the public sector provides more other benefits besides salary. Less intelligent people who are not being able to climb the promotion ladder will choose more often for a job in the public sector. My expectation is that education plays a big role when looking at a possible relation between IQ and worksector, mainly because jobs in the public sector often require a high educational level. Without correcting for education, higher educated (and likely more intelligent) people self select into the public sector because this sector offers more jobs requiring a decent education. My expectation about IQ and salary, is that in the short run IQ has a higher payoff in the public sector. I expect that in the long run the private sector will pay more for IQ while the public sector pays more for education. In the Netherlands, the public sector pays in general higher starting wages (www.inoverheid.nl) but provides less promotion opportunities. I think this is also the case in the United States.

1.4 Implications

There has always been competition among public and private sector in attracting and keeping intelligent employees. Especially in times of crisis, this competition strengthens. I can imagine that, for 'the government', it is valuable to know whether starters on the labour market with a relatively high IQ actually choose for the public sector or not. If it turns out that the 'smartest' people choose for the private sector, the government knows there is work to do with respect to human resource management. In that case, it is the question how more smart people can be attracted. Besides, the federal sector could think about the wage structure. If the research findings turn out to be unsatisfactory from a government point of view, changing the wage structure of federal employees could be a good recommendation for the government. More about that later.

1.5 Structure

In the following pages, first the Methodology of the research will first be discussed. In that paragraph, I will describe the database used and discuss the methods used. It will also point out some validity restrictions which could possibly lower the value of this research. Then, related literature is being looked at. The purpose is to draw relationships between the literature and my research. As can be seen in the literature paragraph, there is indeed literature which is related to this research. Third, the research findings are there. I will comment on how the research has been carried out, will discuss the significance of research findings and I will answer the research questions. In the fourth paragraph, the research findings are being interpreted according to my opinion; reasonings behind some relationships and their consequences are being discussed. Then, the research findings are discussed; I put question marks after some assumptions made/methods used and evaluate the comparability of findings. To end with, a conclusion will recap the most important research findings and their potential value to society.

2. Methodology

2.1 Wisconsin Longitudinal Studies Database

For this research I made use of a very large database, the Wisconsin Longitudinal Study; "The Wisconsin Longitudinal Study (WLS) is a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools (USA) in 1957. Most of them are part of the well known 'babyboom generation'. The sample consists not only of Americans, but also of Germans, Scandinavian and Englishmen.

This large database consists of over 200 variables providing researchers with a great diversity of data. It provides researchers with data in scientific fields like economics, sociology and demography. The database does also provide me with variables that I really need in order to do my analysis. For my research, I used a number of variables from the database and recoded/transformed them in such a way, that I could use them in my analysis. For a list containing all used variables, see table 1.

The advantage of using the Wisconsin Longitudinal Study, is that it consists of over 10,000 respondents. The larger the database, the more valuable are the research findings. This is not the only reason I used this data source. A second reason for using this database, is that Josse Delfgaauw and Robert Dur also used this database in order to do their own research. Using the same dataset makes it easier to compare research findings.

2.2 Methods used

To answer my subquestions, I carried out some logistic regressions and linear regressions. The reason I used logistic regressions instead of normal regression, is that this regression gives more precise results in case of a binary dependent variable, as is the case with my dependent variable describing worksector of the respondents.

All logistic regressions were judged upon data fitness and significance level; the Omnibus Tests of Model Coefficients and Hosmer and Lemeshow determine both how well the model fits the data. If the Omnibus Tests of Model Coefficients provides a significant value, this means that a model including the selected independent variables fits better the data than a model without those variables (Lammers et al., 2007).

Another way to judge data fitness is to use the Hosmer and Lemeshow Goodness-of-Fit Test. In this test, respondents are organized in groups of 10, based on the probability of succeeding. Then, predicted number of succeedings for each group is compared to actual number of succeedings. The (potentional) difference is tested on significance by a Chi-Square test. If this test turns out to be nonsignificant, the model fits the data well. To see whether a variable significantly effects the probability that someone chooses for the public or private sector, the Wald-statistic is used (Lammers et al., 2007).

2.3 Validity restrictions

Like in almost every research, the method used consist of some minor disadvantages. One disadvantage is that almost all variables and regression outcomes consist of missing values. This is partly due to transformations I made in SPSS to a number of variables. In small databases, missing values could give rise to problems regarding the validity of research findings. However, in large databases like the Wisconsin Longitudinal Study, missing values do not impose very large problems for the validity of the findings. Another disadvantage was that I missed data containing wage for first job. I decided to look at the first wage available (1970), which approaches first job wage best.

3. Related Literature

As stated in the introduction, Philip E. Crewson managed to find a relationship between entrant quality and worksector for starting labour market entrants. He wanted to do research on the so called 'crisis argument', which suggests that quality of federal sector entrants is lower than those of the private sector because entrants of the latter sector are less interested in a career in the public sector. This crisis argument is supported by the Merit Systems Protection Board (MSPB), which states that the federal sector is associated with factors such as poor pay and a negative image (Crewson, 1995, page 629). Although the crisis argument stated above, there is also much contrary evidence found, which states that problems in hiring are mainly caused by lengthy and complex screening processes in the federal sector, rather than aversion towards the federal sector. Also, Conant (1989) failed to

find decreases in number of federal sector qualifications or numbers (Crewson, 1995, page 631).

For his research, Crewson made use of the National Longitudinal Survey of Youth (NLSY) which covers 12,000 young men and women. As measure of 'quality', he takes the Armed Forces Qualifications test (AFQT) which comes quite close to a traditional IQ test: "Evidence from NLSY data indicates AFQT scores are highly correlated with results from standard intelligence tests" (Crewson, 1995, page 633). He uses a least squares regression model to carry out his regressions. Although Crewson does research on more or less the same research question, he conducted his research in a slightly different way. The biggest difference regarding the way regressions have been carried out, is that he uses his intelligence measure as dependent variable while I inserted my intelligence measure (IQ) as independent variable.

Crewson does also not correct for educational level in terms of a respondent's highest educational degree obtained, but emphasizes the fact that controlling for occupation is essential. That is, he compares labour market entrants who have the same kind of job, but not necessarily the same educational level. I think that, besides controlling for occupation, controlling for educational level gives rise to more valuable research findings. Although occupation is good to control for, when comparing two employees with the same occupation but a different educational degree, it is likely that the person with the highest educational degree earns more. Therefore, I decided not only to control for occupation but also for education.

Differences in federal and private sector employees could give a good reasoning for a split in choice of worksector. Emperical research suggests that public sector employees put more weight upon 'service to society', 'serving public interest' and job security while private sector employees care more about financial rewards. Dur and Delfgaauw also conclude in one of their recent papers (Dur and Delfgaauw, 2010) that managers working in the private sector give more about salary than public sector managers do.

Surprisingly, Crewson's research findings show that federal sector workers score, on average, 5.5 AFQT higher than their private sector counterparts. He states that the government is actually able to compete with the private sector for intelligent labour market

entrants. So, although some people expect the opposite, Crewson concludes that the federal sector is better able to attract intelligent people than the private sector. He gives the potential explanation that the federal sector 'offers more than conventional wisdom or what anecdotal evidence indicates' (Crewson, 1995, page 636).

Delfgaauw and Dur came to contrary conclusions. Concluded from their recent research (Dur and Delfgaauw, 2010), among people with different managerial ability and motivation, there is self selection of higher able managers into the private sector. People who choose to work as a manager in the public sector accept a lower salary and put more weight upon other job characteristics and benefits which in turn leads to a wage gap between the public and private worksector which increases with (managerial) ability. This wage gap leads consequently to self selection of the 'best and brightest' managers to the private sector while the least able managers reside in the public sector.

Although this doesn't seem efficient, Dur and Delfgaauw argue it actually is; producing a given amount of public goods at lowest costs (wages) while also facilitating an optimum from a social welfare perspective. Therefore, they advise the government not to aim for the most able managers who ask the highest wages, but the less able managers. The benefits of hiring capable managers do not weight up against the additional wages that have to be paid. The public sector thus ends up with a less able management and a larger workforce than a comparable firm in the private sector. From their theory, they conclude that this occurs for efficiency reasons since a 'less productive but higher motivated management' combined with a larger workforce is just cost efficient.

4. Research Findings

3.1 IQ and the choice of work sector

To discover whether the most intelligent people start working in the public or private sector, I did a few logistic regressions in SPSS. The first regression I carried out was one with IQ as independent variable and worksector as dependent variable. The Omnibus Test of Model Coefficients turned out to be significant (Table 2.1), so I can assume that the model fits the data well. The Hosmer and Lemeshow test also confirmed data fitness of the model (Table 2.2). As can be read from the regression output, IQ has a wald-statistic of ,036, which is significant with a P-value of ,000 (Table 2.3). An increase by 10 IQ points leads to an increased value of 0,36 for the variable describing worksector of the respondent for first job. Since this variable attaches a value of 0 to someone working in the private sector and 1 to someone starting his/her career at the government, an increased value for this variable indicates an increased preference towards the public sector.

It is the question whether the relationship between IQ and worksector will be vanished or that it will still remain significant when other variables are included which could have an effect upon the choice of worksector. The independent variables I added are sex, head of the household's worksector, occupation, educational level father and educational level mother. The Omnibus Tests of Model Coefficients (Table 3.1) shows that the model fits the data again. The Hosmer and Lemeshow goodness of fit test (Table 3.2) shows that the model does not fit the data actually. However, one should be cautious with results of this test. In case of a very large database, the Hosmer and Lemeshow goodness of fit test often shows a significant value while the model actually fits the data. Not too much emphasis should thus be placed on this outcome (Lammers et al., 2007). The Wald statistic in turn shows that all variables except educational level father significantly influence the choice of worksector for first job (Table 3.3). The coefficient of IQ , which has barely changed is still significant with a P-value of ,000; An increase of 10 IQ points results in an increase of 'worksector value' by 0,24. The coefficient is still positive, which indicates a positive relationship between IQ and working in the public sector.

At this point, the following sub question can be answered: does IQ have influence on the choice of worksector for first job? The answer is YES. Even if other variables are included,

(which could lower or vanish the significance level of IQ), IQ is still very significant. The conclusion of the findings above is that the higher a respondent's IQ, the higher the chance that he/she will start working in the public sector.

3.2 The role of education

As already stated in the introduction, education could change results dramatically. In order to control for educational level, I added a variable containing highest educational degree obtained to the list of independent variables. The Omnibus Test of Model Coefficients (Table 4.1) and the Hosmer and Lemeshow goodness of fit test (Table 4.2) confirm fitness of the data. However, due to the introduction of educational level, regression results have changed. Educational level father has become significant and the significance level of educational level mother has somewhat declined. But, what strikes most, is that IQ is not significant anymore and that its coefficient has changed from positive to negative. IQ points out a positive relationship with starting a career in the private sector now. More specifically, an increase of 10 IQ points results in an increased tendency to work in the private sector by ,03 points (Table 4.3). Again, 0 stands for a job in the private sector and 1 for a job in the public sector. Of course, due to the non-significance of IQ, one could not speak about a strong relationship between IQ and worksector in this case.

So, when educational level is included in the analysis, IQ is not any longer of significant influence upon the choice of worksector for a respondent's first job. Besides, it is notable that the higher a respondent's IQ, the more likely he or she will start working in the private sector now.

3.3 Pay differentials

In order to explore whether or not a higher IQ pays more in the public or private sector, I did some normal regression analyses. First, I included the logarithm of wage in year 1974 as dependent variable, IQ as independent variable and sorted by worksector. Since there is no variable available which shows wage for first job of respondent, I decided to look at worksector in 1974 and wage in the same year as it is the earliest wage statistic available in the database. Looking at the regression output, IQ seems to influence both the wage in the public and private sector. It is significant with a private sector wage coefficient of ,006 and a government sector wage coefficient of ,013, both with a corresponding P-value of ,000. An

increase of 10 IQ points results in a Logwage increase of ,06 dollars in the private sector and an increase of ,13 dollars in the public sector (Table 5.1).

In a second regression I accounted besides IQ for educational level, sex, occupation, educational level father and educational level mother for the sake of discovering what would happen to the significance level of IQ when more variables have been added to the analysis. After controlling for those additional variables, IQ is in both worksectors still of significant influence with a private sector wage coefficient of ,004 and a public sector wage coefficient of ,008 (Table 6.1). An increase of 10 IQ point results now in a Logwage increase of ,04 in the private sector and an increase of ,08 in the public sector. The wage increase due to an extra IQ point is less than in the previous model with IQ as single independent variable because IQ is not the only predictor anymore.

Interesting to test, is whether the coefficient of IQ upon wage in the public sector differs significantly from the coefficient of IQ upon wage in the private sector. To test this, I ran another regression with the log of wage as dependent variable and IQ, worksector of the respondent and worksector times IQ as independent variables, where the latter variable tests for a possible interaction effect. The interaction term in the equation turned out to be significant, which indicates a significant difference between the coefficients of IQ upon wage in the two sectors. This last regression confirmed that the public sector pays significantly more than the private sector per extra IQ point (Table 7.1).

Because the relationship could be linear-quadratic instead of linear, I carried out a regression containing the log of wage as dependent variable and IQ plus IQ squared as independent variables. The coefficient of IQ squared is significant, which indicates that the relationship is not linear but curvilinear (Table 8.1). I also tested the potential existence of a curvilinear relationship with the option 'curve fit' in SPSS which compares a linear model with a linear-quadratic model through the R-square. The linear-quadratic model gives a higher R-square, which means that the variance of wages among respondents is better explained by the linear-quadratic model then by the linear model (Table 9.1).

5. Interpretation of research findings

When educational level has not been taken into the analysis, most intelligent people seem to have a tendency towards the public sector. But, including education in the analysis gave contrary results. The coefficient of IQ changed from positive to negative, which indicates a positive relationship between IQ and starting to work in the private sector in this case.

A plausible reason that accounting for educational level has such a great impact on the relationship between IQ and worksector, is that job requirements and availability in public and private sector differ among these two worksectors. It is reasonable that the government offers more jobs which require a higher educational degree. Think for example of professors working at the Erasmus University, surgeons in a state hospital or judges working for the court. All those public sector jobs require a decent education. In general, the higher someone's IQ, the bigger is the chance that this person is decently educated. When there has not been accounted for differences in educational level, it is therefore not surprising that most intelligent people choose for similar jobs in the public sector. They choose for the public sector, just because the job requirements and availability match better to their educational level.

As described in the related literature, it has been discovered that most private sector entrants value monetary rewards higher than other job characteristics and side benefits, while for public sector entrants the opposite appears to be true. The resulting wage gap increases with (managerial) ability which could be a good explanation for the negative relationship between IQ and worksector, indicating a preference towards the private sector (after controlling for education) (Dur and Delfgaauw, 2010). In my research there is also preference towards the private sector due to the introduction of educational degree, indicated by a negative coefficient of the IQ measure. However, that same coefficient turned out to be non-significant; Although the negative coefficient points towards a preference towards the private sector, the chance that someone chooses for that sector is increasing with intelligence depends too much upon luck.

To discover whether IQ pays more in the public or private sector for labour market entrants, I ran a regression with the logarithm of wage as dependent variable, while distinguishing between private and public sector. I found, as already known, that the public sector pays

more per IQ point than the private sector indicating a relatively high starting wage in the public sector. In the long run however, wages do increase only gradually in this sector and most/biggest promotions take place in the private sector; Although people with a relatively high IQ are in short term be able to earn more in the public sector, the private sector pays more for performance in the long run. Not surprisingly, in 'Motiveren, belonen en presteren in de publieke sector' (Dur and Delfgaauw, 2009), where the respondents in the Wisconsin longitudinal study have grown much older and have vastly established themselves in the labour market, the private sector pays more per IQ point.

To recall, I expected the more intelligent people to choose for the relatively high monetary benefits of the private sector. This hypothesis was reinforced by related literature, which stated that empirical evidence has shown that public and private sector employees have different preferences and that the latter put more value on monetary rewards (Dur and Delfgaauw, 2009). As stated above, the relationship between IQ and worksector is not significant. It is therefore not clear whether or not the long-term monetary benefits of working in the private sector seem to outweigh both the benefits of a higher short-term wage in the public sector and the additional benefits of job characteristics that jobs in the public sector grant.

6. Discussion

Almost no research is perfect and in many cases question marks could be placed after certain assumptions made and the way research has been conducted. To keep being critically, in this paragraph I discuss a few assumptions made and methods used.

 In the first place, what is a good variable indicating intelligence? I chose to use the Raw Henmon-Nelson IQ score, which is in my opinion a relatively good approach of intelligence. However, Crewson used AFQT scores as intelligence measure in his research (Crewson, 1995). It remains debatable which one is better and whether the use of one or another variable affects regression results. Besides, is someone with a higher IQ really able to make better decisions or to work harder, or should intelligence be approached in another way?

In the second place, data are gathered from several schools in the USA. Probably, the composition of the population is different in the States; Think of the percentage males/females or the reward system. This possible difference and perhaps others may give rise to problems when providing recommendations to firms or institutions in the Netherlands.

Third, what are the regression results worth? Besides IQ, I ran my regressions with variables describing educational level and occupation, but also variables such as sex of the respondent, the worksector of the respondents father and father's/mother's educational degree. Although I controlled for these variables, it is not certain whether there are more variables or not which could change found relationships and significant values.

What also makes sense, is the comparability of my research findings and the research findings of Dur and Delfgaauw (Dur and Delfgaauw, 2009). They did research with data which have been gathered several years after the data I used for my research. In the meantime, several external influences could have set restrictions on the comparability of research findings. For example; changes in payment/tax systems and business cycle/inflation influences could have changed the real value of wages over time.

What has not yet been discussed, is why the research findings of Crewson (1995) are contrary to mine. To recall, he concludes from his research findings that the public sector is actually able to attract employees with a relatively high IQ. For me, one reason seems to be that Crewson conducted his research in a slightly different way. As discussed in the Related Literature part, Crewson treats his intelligence measure as dependent variable while I treat IQ as independent variable. For me, it seemed most logical to look at the influence of IQ and other variables upon worksector instead of the influence of worksector and other variables upon IQ. However, this is partly subjective. More important, Crewson controls for occupation which is important, but does not control for education which is even more important in my opinion. Again, a person with a certain occupation and a masters degree could obtain a lot more benefits (in the form of money or non-monetary benefits) in the private or public sector respectively than someone with the same occupation but no education at all. Here lies the biggest difference between the two researches in my opinion which explains the contrary outcomes.

7. Conclusion

There is no clear relationship between IQ and the choice of worksector. Although the IQ coefficient regarding sector choice suggests a preference towards the private sector, this coefficient is not significant. Controlling for education was a key part of the analysis. Without controlling for education, the more intelligent a labour market entrant, the more likely that person chose to start working in the public sector which was found statistically significant. The reasoning behind this research finding was in my opinion that the public sector offers more jobs for better educated people, which makes higher educated labour market entrants (often also more intelligent people) more likely to choose for the public sector.

After controlling for education, the positive relationship between IQ and working in the public sector became negative; The higher a respondents IQ, the more likely will that person start working in the private sector now. However, the results were not found statistically significant anymore so not much conclusions can be drawn from these results.

I was curious whether potential wage differentials exist between public and private sector. If they do exist, they can (partly) explain the preference towards one of the two worksectors. It turned out that the public sector pays more per IQ point for labour market entrants. However, it is highly probable that the private sector pays more in the long run. Research findings (Dur and Delfgaauw, 2009) confirm that, when using data regarding the same labour market entrants but a decent number of years later, the IQ-wage coefficient in the private sector is actually higher than that of the public sector. Besides, empirical evidence from other research showed that intelligent employees care more about monetary rewards while less able employees prefer other job characteristics and side benefits of work (Dur and Delfgaauw, 2010).

When trying to explain choice of worksector by diffences in payment/benefits of the two sectors as well as differences in preferences among public and private sector entrants, this is very difficult because the negative IQ-worksector coefficient, after controlling for education, was not found statistically anymore.

8. References

6.1 Literature

Dur, R. and Delfgaauw, J., 2009, 'Motiveren, belonen en presteren in de publieke sector', Erasmus University

Dur, R. and Delfgaauw, J., 2010, 'Managerial Talent, Motivation, and Self-Selection into Public Management', Iza.nl

Field, A., 2009, 'Discovering Statistics Using SPSS', 3th edition

Lammers, J., Pelzer, B., Hendrickx, J., Eisinga, R., 2007), Categorische Data Analyse met SPSS, Inleiding in loglineaire analysetechnieken.

Crewson, P., 1995, 'A comparative Analysis of Public and Private Sector Entrant Quality'

6.2 Internet

Inoverheid.nl, 2009, 'Overheid moet belonen naar presteren'

http://www.inoverheid.nl/artikel/nieuws/1914835/overheid-moet-belonen-naar-presteren.html

Wisconsin Longitudinal Study

http://www.ssc.wisc.edu/wlsresearch/

9. Appendix

Table 1: list of used variables

Variable name	Description	Type	Codes
Gov_first	worksector for first job. I transformed this variable from the variable Cwx1u:GR.	Scale	0,1 Respondents are dismissed in case of: 1. Don't work in either private or public class. 2. Class unknown. 3. No job.
Gwiiq_bm	measure of IQ score mapped from raw Henmon-Nelson test score.	Scale	Integer Respondents are dismissed in case of: IQ unavailable
IQsqrt	Measure of IQ score mapped from raw Henmon-Nelson test score, squared.	Scale	Integer
Degree_rsp	Shows highest degree obtained by respondent. This variable is transformed from rb003red.	Scale	0,12,...9 Respondents are dismissed in case of: refused, not ascertained.
Hhclass	Worksector household's head. Recoded from cwhh57u because I decided again to distinguish between private sector and public sector.	Scale	0,1 Respondents are dismissed in case of: 1. Not Ascertained 2. Inappropriate 3. Unknown.
Sex	Sex of respondent. Recoded from Sexrsp. SPSS turns	Scale	0,1 Respondents are

	out to work better with digits 0 and 1.		dismissed in case of: Sex unknown.
Edu_father	Father's highest degree obtained. transformed from Edfa57q.	Scale	0,1,...6 Respondents are dismissed in case of: 1. not ascertained 2. unknown.
Edu_mother	Mother's highest degree obtained. Transformed into edmo57q.	Scale	0,1,...6 Respondents are again dismissed in case of: 1. not ascertained 2. Unknown.
LN(yrwg74)	The log of graduate's wages and salaries in $100's last year (1974). Computed from yrwg74.	Scale	Integer
Gov_74	worksector for job in 1974. Transformed this variable from cwr74.	Scale	0,1 Respondents are again dismissed in case of: 1. don't work in either private or public class. 2. class unknown. 3. no job.
Occup	General occupation category. Transformed from sitr64.	Scale	0,1,,...9 Respondents are dismissed in case of: non respondent/not codable.

Table 2: IQ and worksector for first job

2.1 Omnibus Tests of Model Coefficients

		Chi-square	P-value
Step 1	Step	315,004	,000
	Block	**315,004**	**,000**
	Model	315,004	,000

2.2 Hosmer and Lemeshow Test

Step	Chi-square	P-value
1	10,929	,206

2.3 IQ and worksector of First job

Gov_first = Constant + a * gwiiq_bm		
	Wald-statistic	P-value
Constant	-5,465	,000
Gwiiq_bm	**,036**	**,000**

Table 3: IQ and worksector for first job with other variables included

3.1 Omnibus Tests of Model Coefficients

		Chi-square	P-value
Step 1	Step	728,739	,000
	Block	**728,739**	**,000**
	Model	728,739	,000

3.2 Hosmer and Lemeshow Test

Step	Chi-square	P-value
1	43,319	,000

3.3 IQ and worksector of First job with other variables

Gov_first = Constant + a * gwiiq_bm + b * sex + c * hhclass + d * edu_father + f * edu_mother + g * occup		
	Wald-statistic	P-value
Constant	-5,838	,000
Gwiiq_bm	**,024**	**,000**
Sex	,532	,000
Hhclass	,523	,000
Edu_father	,018	,507
Edu_Mother	,127	,000
Occup	,261	,000

Table 4: IQ and worksector with educational level included

4.1 Omnibus Tests of Model Coefficients

		Chi-square	P-value
Step 1	Step	1211,397	,000
	Block	1211,397	,000
	Model	1211,397	,000

4.2 Hosmer and Lemeshow Test

Step	Chi-square	P-value
1	13,289	,102

4.3 IQ and worksector of First job with education included

Gov_first = Constant + a * gwiiq_bm + b * sex + c * hhclass + d * edu_father + f * edu_mother + g * degree_rsp + h * occup		
	Wald-statistic	P-value
Constant	-3,588	,000
Gwiiq_bm	**-,003**	**,405**
Sex	,968	,000
Hhclass	,510	,001
Edu_father	-,085	,007
Edu_Mother	,067	,037
Degree_rsp	,565	,000
Occup	,127	,000

Table 5: Influence of IQ on wages

5.1 IQ and wages regression sorted by worksector

Logyrwg74 = Constant + a * Gwiiq_bm + dummy * gov_74			
working class of respondent in 1974		Coefficient	P-value
	(Constant)	3,551	,000
	Gwiiq_bm	,005	,395
private	(Constant)	3,767	,000
	Gwiiq_bm	**,006**	**,000**
government	(Constant)	3,002	,000
	Gwiiq_bm	**,013**	**,000**

Table 6: Influence of IQ on wages with other variables included

6.1 IQ and wages regression sorted by worksector including additional variables

Logyrwg74 = Constant + a * Gwiiq_bm + b * Degree_rsp + c * Sex + d * Edu_father + e * Edu_mother + f * occup + dummy * gov_74			
working class of respondent in 1974		Coefficient	P-value
.	(Constant)	4,331	,000
	Degree_rsp	,065	,475
	Occup	,020	,579
	Gwiiq_bm	,004	,539
	Sex	-2,378	,000
	Edu_father	,067	,266
	Edu_mother	-,038	,539
private	(Constant)	4,555	,000
	Degree_rsp	,041	,000
	Occup	-,001	,823
	Gwiiq_bm	**,004**	**,005**
	Sex	-1,513	,000
	Edu_father	-,002	,887
	Edu_mother	,005	,712
government	(Constant)	3,863	,000
	Degree_rsp	,092	,000
	Occup	,006	,615
	Gwiig_bm	**,008**	**,002**
	Sex	-1,257	,000
	Edu_father	-,029	,187
	Edu_mother	-,046	,061

Table 7: Testing for differences between coefficients

7.1 Effect of IQ upon logwage with interaction term included

Logyrwg74 = a + b * gwiiq_bm + c * gov_74 + d * gwiiq_bm * gov_74	F	Sig.
(constant)	1167,390	,000
gwiiq_bm	28,056	,000
gov_74	10,596	,001
gwiiq_bm * gov_74	10,318	,001

Table 8: Testing for a linear-quadratic relationship

8.1 Effect of IQ upon logwage with quadratic term included

Logyrwg74 = a + b * gwiiq_bm + c * IQsqrt	B	t	P-value
(Constant)	10,702	5,845	,000
Gwiiq_bm	,079	4,280	,000
IQsqrt	-1,428	-3,888	,000

Table 9.1: Testing for a linear-quadratic relationship with curve fit

	R-square
Logyrwg74 = gwiiq_bm	,009
Logyrwg74 = gwiiq_bm + IQsqrt	,011