Investigating the impact of experience on income levels - answering the basic question - do more years of work experience result in higher pay for individuals?"

Data

The data set used in this research was derived from Labour Force Survey Five – Quarter Longitudinal Dataset. The survey in this dataset was conducted from January 2009 to March 2010. About 5,606 observations were taken during the period. Two linked longitudinal dataset are created using the using the weighting method to adjust for non response bias. The data set can also be used as panel data which means that the changes in variables overtime as well as differences in variables between categories. The work data of first quarter was used in this analysis because of comparison over time is not used. Most recent available data set was used in this analysis for delivering the latest results in this research. The quality of government dataset is additional for delivering quality results.

Description of variables

Dependent variables

Natural logarithm **gross hourly pay of an employee** also represented earnings is used as dependent variable. The econometric convenience and relative comparison of effect of education and experience is the main rationale behind using log in this research.

Main explanatory/ independent variables

Length of time continuing employment in months of an individual indicates the experience, which is used as another main independent variable. The effect of experience on earnings was further investigated by using square of variable to take care of concave relation between earning and experience due to ageing of an individual.

Other explanatory variables

Level of highest qualification held by individuals who represents the educational status was used as main independent variable. Education series dummies created and were also used in this analysis. They were as follows

- Does not apply
- nvq level 4 and above

- nvq level 3
- trade apprenticeships
- nvq level 2
- below nvq level 2
- other qualifications
- no qualification

The use of years of schooling may lead to spurious results as the earning might be convex/concave function of education, so different levels of qualification might have more linear relation for earnings.

Age was used as a proxy for analyzing the effect of human capital investment by an individual since accumulated human capital investment also varies with age. The squares of age has also been used in order analyse effect of falling productivity which may result in fall of earnings.

Sex has been used in order to delineate the discrimination of wages, difference in productivity and job requirements between males and females.

Public or private sector has been used in order analyse the difference between the two sectors.

Full or part time employment has been used to find the effect earning higher income by full timers and lower by part timers.

Ethnicity can play a role in difference in wages due to discrimination in a job role

Marital status is a proxy for position since managers and senior officials tend to have higher salary compared to basic occupations,

Descriptive statistics

Gross hourly pay of an employee: From the following table we can observe that the mean gross hourly pay of an employee was 12.531 pounds with a standard deviation of 8.30 pound. The highest gross hourly pay of an employee was 103.34 pounds and lowest 0.036 pounds.

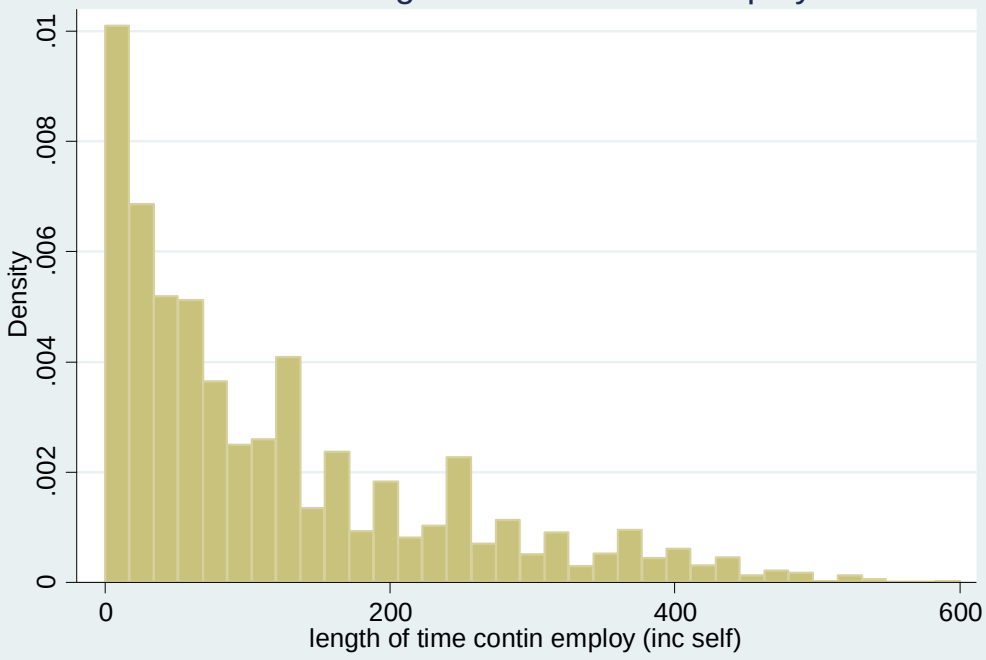
Variable	Observations	Mean	Std dev	Min	Max
Gross hourly pay	2886	12. 531	8.30	0.36	103.34

Length of time continuing employment in months: The mean length of time continuing employment was 118 months and with a standard deviation of 115.1 months. The minimum

length was 0 months and maximum was 600 months. This variable indicates the experience. From the histogram below shows that the employee with lower experience are more compared to employee with higher experience.

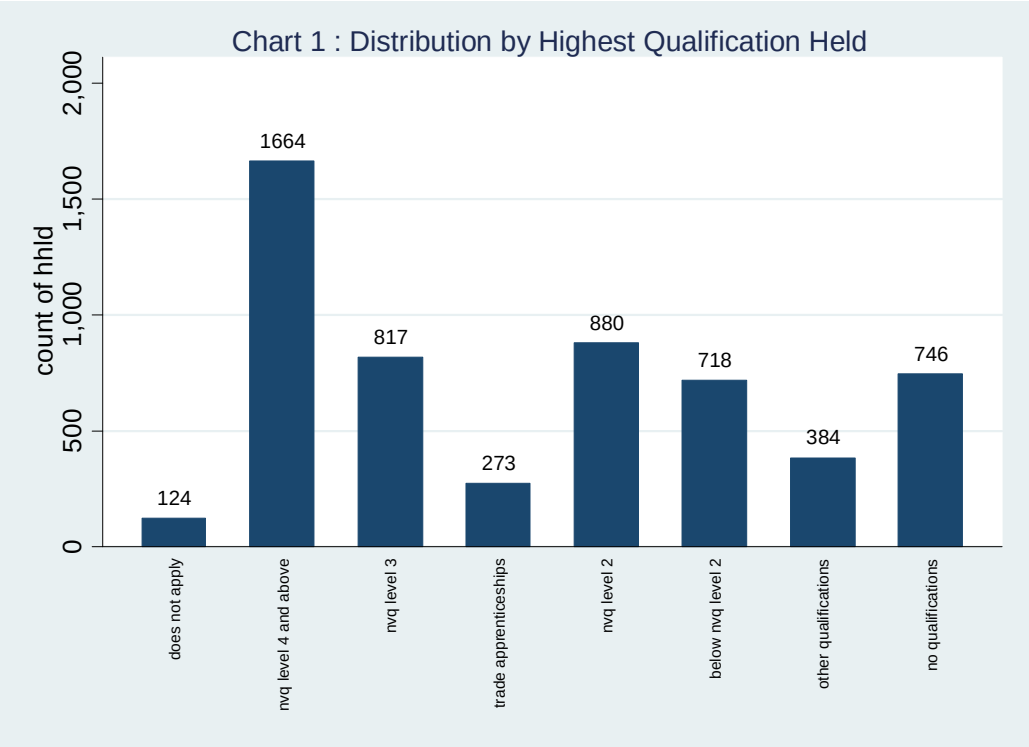
Variable	Observations	Mean	Std dev	Min	Max
Length of employment in months	3981	118.15	115.81	0	600

Chart 2 : Histogram of months of employment



Level of highest qualifications held: From the following table we can observe that about 29.68% of the employees were qualified up to level 4 and above. About 18% of the employees were qualified up to level 2 and 13% below level 2.

level of highest qualification held	Freq.	Percent	Cum.
does not apply	124	2.21	2.21
nvq level 4 and above	1,664	29.68	31.89
nvq level 3	817	14.57	46.47
trade apprenticeships	273	4.87	51.34
nvq level 2	880	15.70	67.04
below nvq level 2	718	12.81	79.84
other qualifications	384	6.85	86.69
no qualifications	746	13.31	100.00
Total	5,606	100.00	

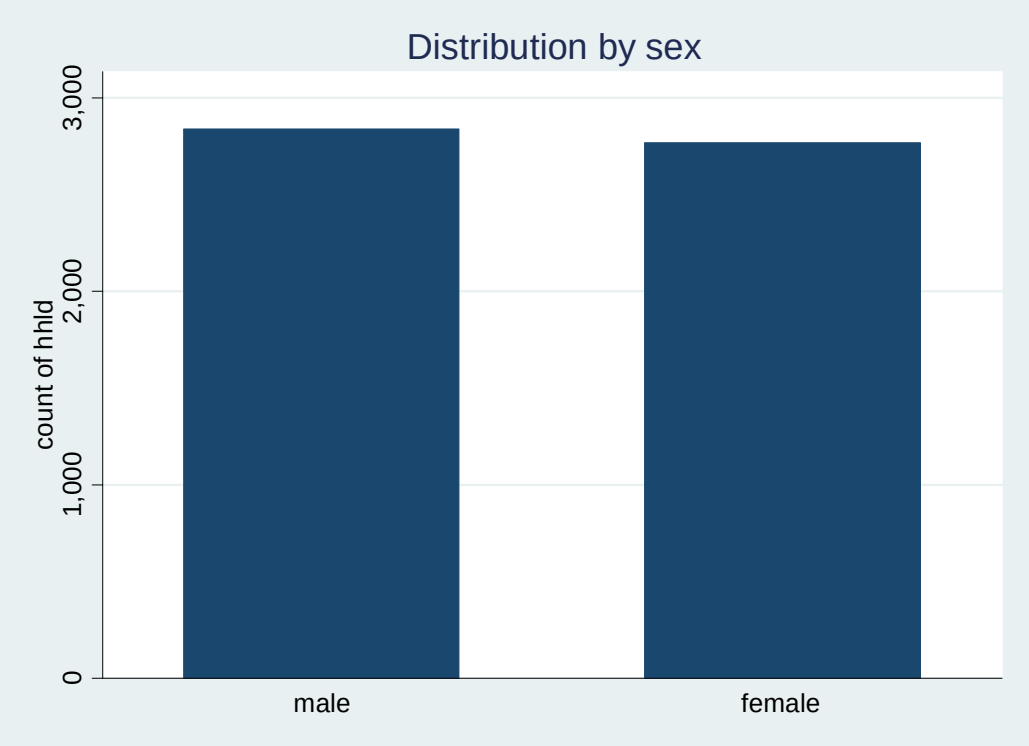


Age : From the following table we can observe that the average age of the employees was 42.21 years with a standard deviation of 13.32 years. The lowest age of an employee was 15 years and highest age was 64 years.

Variable	Observations	Mean	Std dev	Min	Max
Age	5606	42.21	13.32	15	64

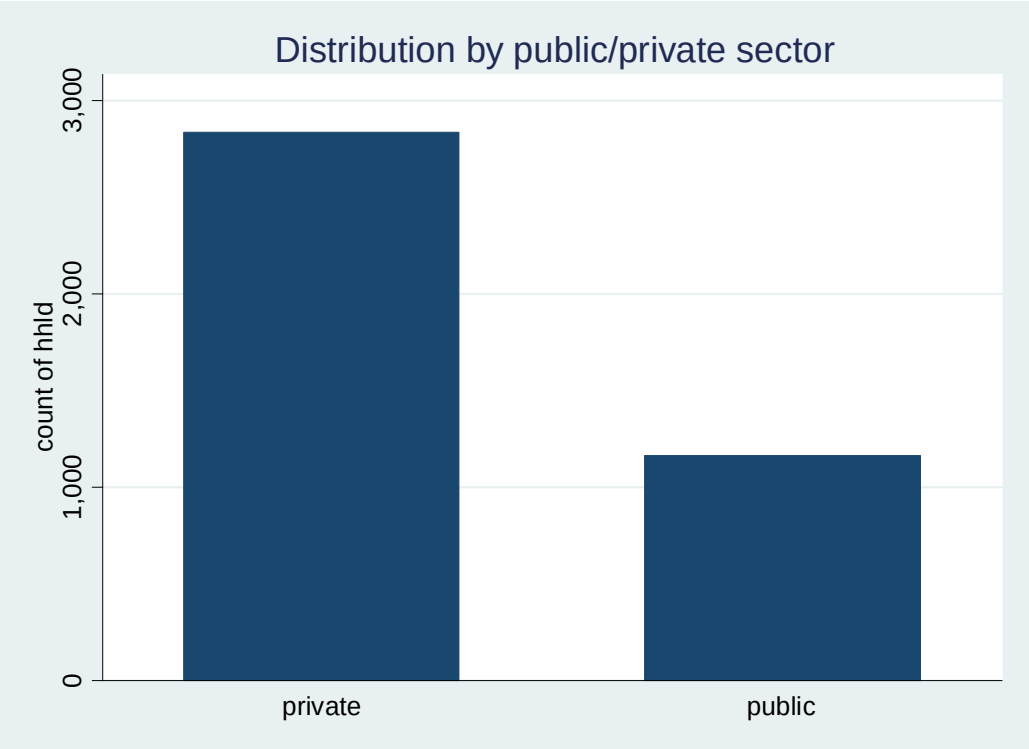
Sex: From the following table and chart we can observe that about 50.62% of the employees were males and 49.38% of the employees were females.

sex	Freq.	Percent	Cum.
male	2,838	50.62	50.62
female	2,768	49.38	100.00
Total	5,606	100.00	



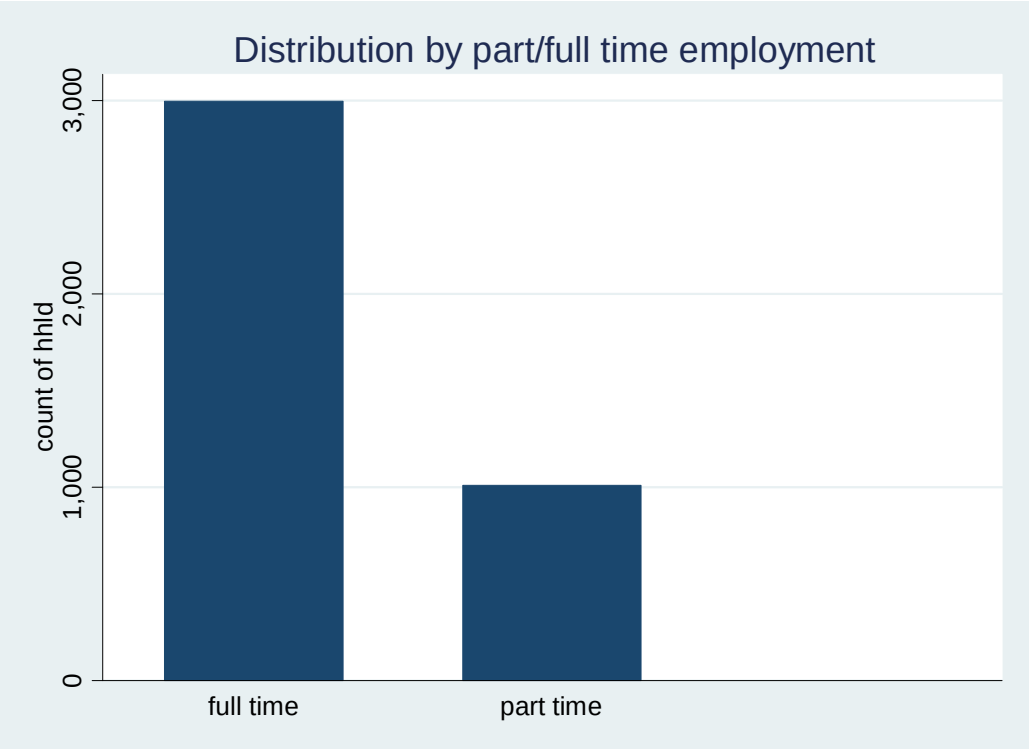
Public or private sector: From the following table and chart, we can observe that about 71% of the employee belonged to private sector and 29% belonged to public sector.

public or private sector (reported)	Freq.	Percent	Cum.
private	2,834	70.90	70.90
public	1,163	29.10	100.00
Total	3,997	100.00	



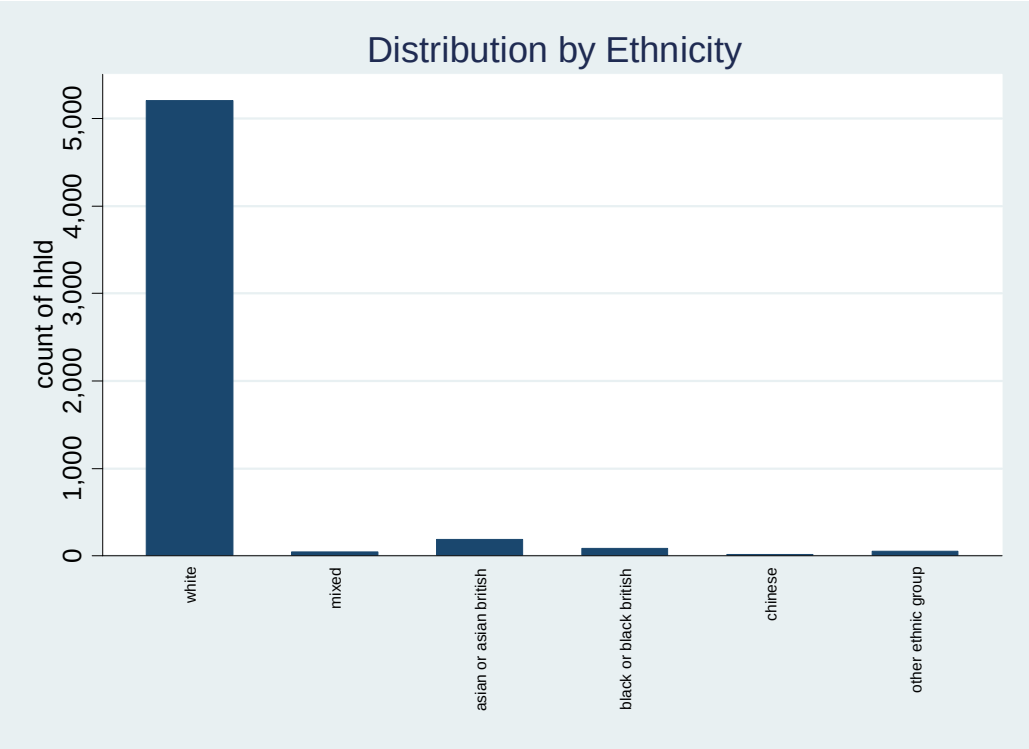
Full time or part time employed: From the following table and chart we can observe that about 75% of the employees were fulltime and a quarter of them were part timers.

	Freq	**Percent**	**Cum.**
Full time	2,994	74.76	74.76
Part time	1,011	25.24	100.00
Total	4,005	100.00	



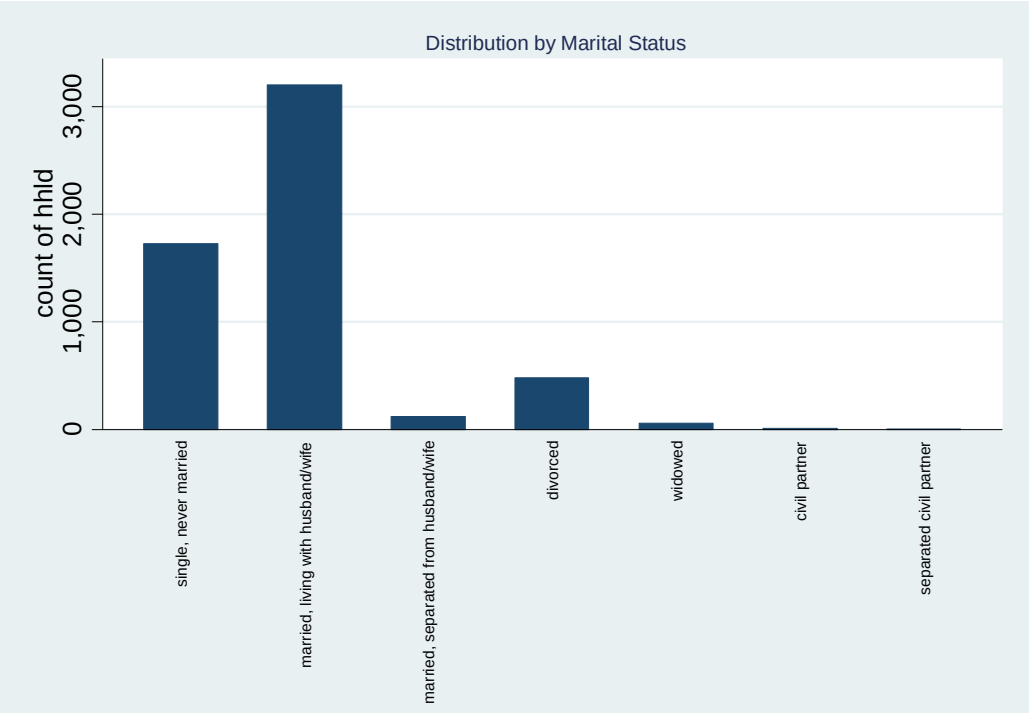
Ethnicity: From the following table and graph we can conclude that 93% of the employees in this research belonged white race which is also evident from chart.

ethnic group	Freq.	Percent	Cum.
white	5,210	93.00	93.00
mixed	44	0.79	93.79
asian or asian british	191	3.41	97.20
black or black british	88	1.57	98.77
chinese	19	0.34	99.11
other ethnic group	50	0.89	100.00
Total	5,602	100.00	



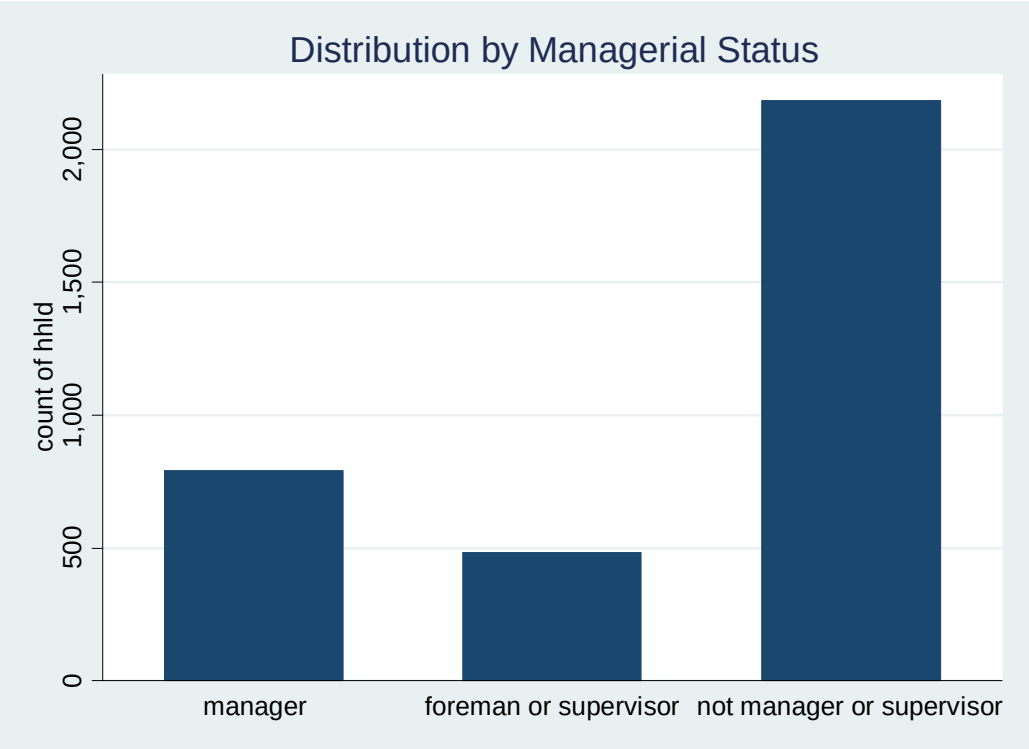
Marital status: From the following table and graph we can conclude that about 57% of the employees were married and living with husband/wife.

marital status	Freq.	Percent	Cum.
single, never married	1,726	30.79	30.79
married, living with husband/wife	3,202	57.12	87.91
married, separated from husband/wife	123	2.19	90.10
divorced	482	8.60	98.70
widowed	57	1.02	99.71
civil partner	14	0.25	99.96
separated civil partner	2	0.04	100.00
Total	5,606	100.00	



Managerial status: From the following table we can observe that about 63% of the employees were neither managers nor supervisors.

managerial status (reported)	Freq.	Percent	Cum.
manager	792	22.89	22.89
foreman or supervisor	483	13.96	36.85
not manager or supervisor	2,185	63.15	100.00
Total	3,460	100.00	



Bivariate statistics

From the following table we can observe that hourly pay and length of gross hourly salary with a correlation coefficient of 0.19. The mean hourly pay of full time employees was 13.616 pounds with a standard deviation of 8.6 pounds and the mean length of employment was 125.09 months for full time employees with a standard deviation of 119.17months.

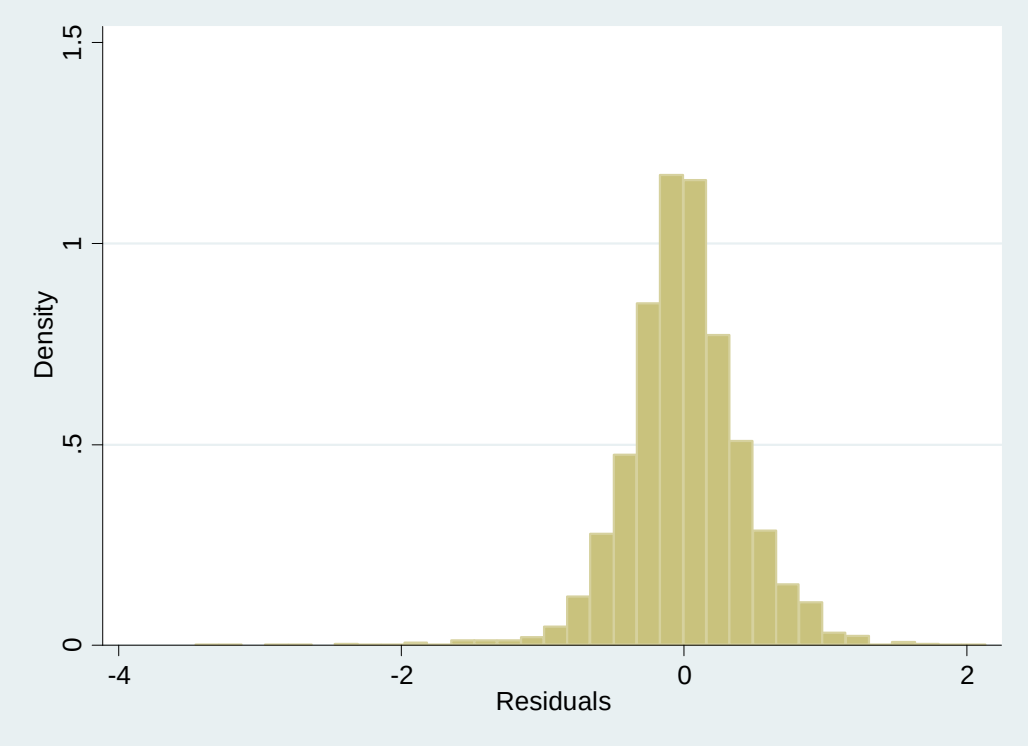
	empmon1	hourpay1
empmon1	1.0000	
hourpay1	0.1902	1.0000

Variable	Observations	Mean	Std dev	Min	Max
Gross hourly pay	2144	13.616	8.60	0.36	103.34
Length of employment in months	2982	125.09	119.17	0	600

Methodology

Statistical procedure

The dataset used in this research project is a cross sectional data. Ordinary Least Squares will be appropriate methods to estimate the parameters since regression model was used in this research. The researcher attempted to test the normality of the dataset as prerequisite to use ordinary least squares as appropriate method for estimation of the results. The normal probability plot has shown that the plot was almost normally distributed and hence making the data set more appropriate for analysis.



But Ordinary Least square method is not without limitation. Because violation of Gauss – Markov theorem and the OLS assumptions for which they should have minimum variance, linear function of error terms and unbiased estimates are the main problem which may arise as result of using them. In order to overcome this problem and to make sure that the error term is consistent over the sample; Breusch-Pagan test for heteroscedasticity was used. Wherever the sample reported heteroscedastictiy, robust standard errors are used in the regressions. To ensure that the variables are non stochastic, the regressions were also tested for endogeneity by using Hausman – Wu test. Due to lack of tests, the problem of under or over estimation by omitted variables, a careful attempt was made to include all possible variables which are relevant.

In this research the researcher has made an attempt to test the significant effect of experience on earning with fear of inclusion of irrelevant variables. In order to avoid this problem the regression was also tested for the joint significance of other independent variables.

Regression model

The regression model was used as quantitative method in order to find out the effect of experience on earning. The model proposed to test in this research is based on Mincer Equation. Other relevant independent variables were also added to this equation to prevent the upward bias. The equation used test in this research is as follows:

$$\mathbf{Ln\ (hourpay1i) = \alpha + \beta1\ (empmon1i) + \beta2\ (empmon1i)2 + \beta3\ (highestquali) + \beta4\ (age1i) + \beta5\ (age1i)2 + \beta6\ (sexi) + \beta7\ (publicr1i) + \beta8\ (marsta1i) + \beta9\ (manager1i) + \beta10\ (ethnicity1i) + \varepsilon i}$$

where hourpay1 is gross hourly pay, empmon1 is length of time continuing employment in months, highestqual is level of highest qualification held, publicr1 is public or private sector, marsta1 is marital status & manager1 is managerial status.

Investigation into Optimization

Investigating the approximate amount of human capital investment needed to yield maximum earnings is a restrictive study. The approach adopted is to find the quantitative estimate of number of months of experience required to yield maximum earnings. Appropriate constraints were used in this research because the experience of an individual which makes us to take this as a brief framework. The OLS estimate was produced by discarding the relevant variables which may lead to upward bias.

Results

Interpretation of the Regression Model Results

The regression output is as shown as below. We found that the model obtained is heteroscedastic (Section 5) and hence we run the model with robust standard errors. The estimates of the coefficients of experience, education and age are given in the table below.

Variables	Coefficients

Experience	0.0010488
Experience^2	-0.0000012
NVQ level 4 and above	0.529733
NVQ level 3	0.2562963
Trade apprenticeships	0.1261818
NVQ level 2	0.1328501
Below NVQ level 2	0.0716075
Age	0.0411557
Age^2	-0.0004576

On observing the relation between the experience and hourly pay, we can notice that 0.105% increase in gross hourly pay with increase in one month experience keeping other variables constant. With the rate of this increase, increase for 1 year amounts to 1.27% of gross hourly pay. Since the maximum experience of an individual as per this dataset is 600 months (50 years), the maximum increase in gross hourly pay amounts to 63.6% compared to an inexperience employee. But the square of experience had negative coefficient with increase in experience, the earnings increase in a diminishing rate with each additional month. This was significant at 10% level but not at 5% (p-value>0.056). But this variable was included in order to study the concave effect of earnings.

Even though the coefficient of experience calculated to have a 63.6% increase in earning for highest number of months i.e., 600 months the experience have far lesser impact than the estimated because of quadratic relation with earnings. Since the estimated square of coefficient has negative coefficient the earning because of experience will not be highest at 600 months. The working is as follows.

To find the maximum number of months when earning are the highest

$$\mathbf{ln(hourpay1_i)=\alpha+\beta_1(empmon1_i)+\beta_2(empmon1_i)^2=\ldots\ldots+\varepsilon_i}$$

taking all other variables constant:

$$\frac{\delta \ln(\text{hourpay1})}{} = \mathbf{\beta_1+ 2\beta_2(empmon1)}$$

δ(empmon1)

Now, for the point of maximization:

$\beta_1 + 2\beta_2(empmon1)=0;$

$(empmon1)= -\beta_1/2\beta_2$

$= -0.0010488/2(-0.000012)= 437$

Conclusion: thus we can conclude that the earnings are maximum with approximately 437 months of experience

The experience on earnings will be at maximal at 437 months rather than 600 months due to concave effect. With 437 months (36 years) of experience, the coefficient estimates gives us an increase of 46.3% in earnings than the employees without any experience.

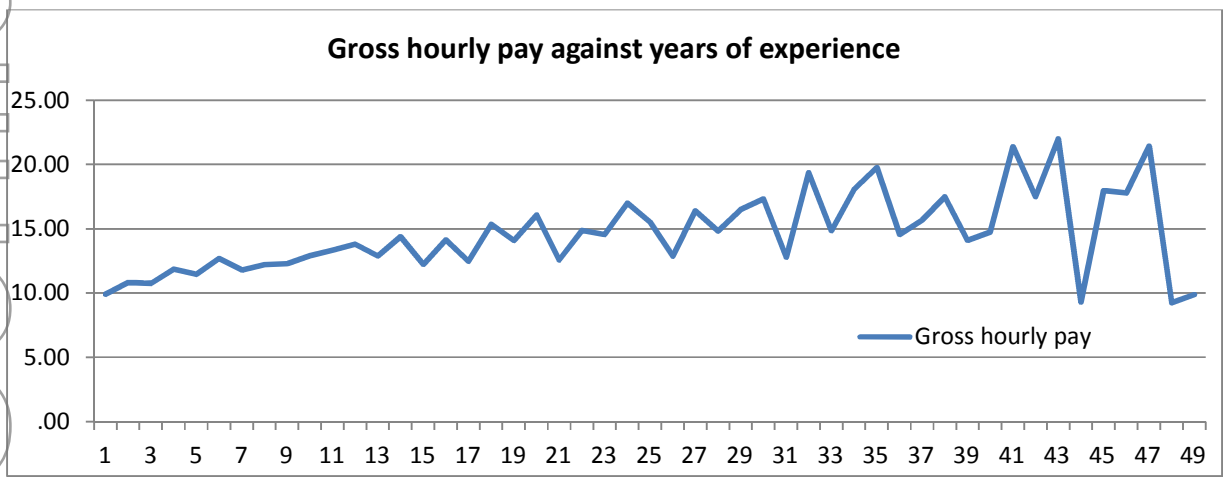
Even though the coefficient of age suggests an increase of 4.1% of earning, age square is indicating a negative coefficient suggesting decrease in earning when the employee is getting older and older might be due to fall in productivity. This is the main reason for falling in gross hourly income. Even though the employee gets older and older there will be increase in experience but will result in fall of income.

The individuals with highest qualification had noticed an increase of 53% in gross hourly pay, compared to persons with qualification of below NVQ level 2. We can also notice decrease in the coefficients as evident by inclusion of other dummy educational variable such as NVQ level 2 where it is 7%.

Results of investigation into optimization

After estimation of results of regression analysis, the researcher attempted to find the level of experience of a person in maximizing his pay for various levels of qualification. The experience and highest qualification were used as independent variables discarding other variables. The regression output obtained is as shown in the appendix. Since the aim of this research is to find out whether a mix of education and experience is required to maximize the earnings, other variables were not used for the sake of simplicity. Thus the coefficients thus obtained tend to have an upward bias.

From the following graph we can observe the mean hourly pay against number of year of experience. The graph has shown a constant raise of mean hourly pay till 35 years. The hour pay is highly unconstant after 35 years and ultimately declining at 47 years. The highest hour pay is between 41 – 43 years.



Testing the assumptions for the regression Model

Heteroscedasticity

The data set was subjected to test heteroscedasticity by using Breusch – Pagan test. The test has shown that the errors are not homogenous at a significance level of 5%. This made the researcher to use robust standard errors for the OLS estimation in the regression model. This is as shown below

H_0: Constant variance

H_1: variance is not constant

Level of significance =0.05

Test statistics=χ^2= 73.35

P- value: p(χ^2=73.35)=0.000, which is significant at 5% significance level as 0.000<0.05

The data provides sufficient evidence to reject null hypothesis

Conclusion: This is enough evidence at the 0.05 level of significance to conclude that the errors are not homogenous. Thus there is presence of heteroscedasticity in the model.

Endogeneity

The independent variables used in this research are exogenous. But the researcher strongly suspects that the managerial status is endogenous, since the error terms of managerial status and earnings could be correlated. A Hausman – Wu test was used find out whether the managerial status is endogenous. The initial OLS regression has shown an RSS0 of 521.801224 and MS residual (SO^2) of 0.183. After the initial estimation a multinomial logistic regression was carried out with managerial status as a dependent variable and NVQ level 4 and above was used as an instrument variable. Prediction pre1 was yielded after multinomial regression. It was followed estimation by using a new OLS regression and new RSS1 of 521.26 was yielded. The test as delineated below shows that the managerial status is not endogenous.

Detecting Endogeneity (Hausman – Wu test)

To test

H_0: Managerial status is exogenous

H_1: Managerial status is endogenous

Level of significance =0.10

Test statistics =$RSS0-RSS1/SO^2$ follow chi squared with r=1 degree of freedom

= 2.94

Where RSS0= 521.801224 RSS1=521.263137 SO^2=0.183152413

P value=p(χ^2>2.94)=0.0825

Since p value of 0.0825 > 0.10 we reject H_0. It is statistically significant.

Conclusion: At 10 % significance level, the data provides evidence to reject H_0. Thus managerial status is exogenous and not endogenous

Individual Joint Significance of Main Explanatory variables

Test: To test if experience has significant effect on earnings

To test

H_0: B=0 (Experience has no effect on earnings)

H_1: B≠0 (Experience significantly effects earnings).

Where

B_i= Coefficient of experience (empmon1) in the regression equation.

Level of significance =0.05

Test statistics: F=19.88

P-value=p(t>19.88) = 0.000

Since p value of 0.000<0.05, we can reject H_0

Conclusion: Experience significantly affects earnings

Other explanatory variables were subjected to joint significance tests to test whether they have significant effect on earnings. All the variables subjected for joint significance were found significant concluding these variables also effect the earning significantly.

Appendix

```
hourpay1                                                    gross hourly pay
-------------------------------------------------------------------------------

                  type:  numeric (double)

                 range:  [.36,103.34]                 units:  .01
           unique values:  1198                  missing .:  0/5606
       unique mv codes:  1                       missing .*:  2720/5606

                  mean:   12.5309
             std. dev:     8.296

          percentiles:        10%       25%       50%       75%       90%
                              5.7      7.27     10.13     15.32     21.76
-------------------------------------------------------------------------------
```

```
empmon1                                  length of time contin employ (inc self)
-------------------------------------------------------------------------------

                 type:  numeric (int)
                label:  empmon1, but 129 nonmissing values are not labeled

                range:  [0,600]                      units:  1
        unique values:  129                   missing .:  0/5606
     unique mv codes:  2                     missing .*:  1625/5606

             examples:  33
                        96
                        240
                        .a

-------------------------------------------------------------------------------


-------------------------------------------------------------------------------
lequal81                                 level of highest qualification held
-------------------------------------------------------------------------------

                 type:  numeric (byte)
                label:  lequal81

                range:  [-9,7]                       units:  1
        unique values:  8                     missing .:  0/5606

           tabulation:  Freq.   Numeric  Label
                          124        -9  does not apply
                         1664         1  nvq level 4 and above
                          817         2  nvq level 3
                          273         3  trade apprenticeships
                          880         4  nvq level 2
                          718         5  below nvq level 2
                          384         6  other qualifications
                          746         7  no qualifications

-------------------------------------------------------------------------------


-------------------------------------------------------------------------------
age1                                                                      age
-------------------------------------------------------------------------------

                 type:  numeric (byte)

                range:  [15,64]                      units:  1
        unique values:  50                    missing .:  0/5606

                 mean:   42.2141
            std. dev:   13.3215

          percentiles:        10%       25%       50%       75%       90%
                               21        33        44        53        59

-------------------------------------------------------------------------------


-------------------------------------------------------------------------------
sex                                                                       sex
-------------------------------------------------------------------------------

                 type:  numeric (byte)
                label:  sex

                range:  [0,1]                        units:  1
        unique values:  2                     missing .:  0/5606

           tabulation:  Freq.   Numeric  Label
                         2838         0  male
                         2768         1  female

-------------------------------------------------------------------------------
```

---

publicr1 — public or private sector (reported)

```
                type:  numeric (byte)
               label:  publicr1

               range:  [0,1]                        units:  1
         unique values:  2                       missing .:  0/5606
      unique mv codes:  2                       missing .*:  1609/5606

           tabulation:  Freq.   Numeric  Label
                         2834         0  private
                         1163         1  public
                         1605        .a
                            4        .b
```

---

marsta1 — marital status

```
                type:  numeric (byte)
               label:  marsta1

               range:  [1,7]                        units:  1
         unique values:  7                       missing .:  0/5606

           tabulation:  Freq.   Numeric  Label
                         1726         1  single, never married
                         3202         2  married, living with
                                         husband/wife
                          123         3  married, separated from
                                         husband/wife
                          482         4  divorced
                           57         5  widowed
                           14         6  civil partner
                            2         7  separated civil partner
```

---

manager1 — managerial status (reported)

```
                type:  numeric (byte)
               label:  manager1

               range:  [1,3]                        units:  1
         unique values:  3                       missing .:  0/5606
      unique mv codes:  2                       missing .*:  2146/5606

           tabulation:  Freq.   Numeric  Label
                          792         1  manager
                          483         2  foreman or supervisor
                         2185         3  not manager or supervisor
                         2144        .a
                            2        .b
```

---

ftpt — (unlabeled)

```
                type:  numeric (float)

               range:  [0,1]                        units:  1
         unique values:  2                       missing .:  0/5606

           tabulation:  Freq.  Value
                         2612  0
                         2994  1
```

```
eth011                                                          ethnic group
-------------------------------------------------------------------------------

                 type:  numeric (byte)
                label:  eth011

                range:  [1,6]                        units:  1
          unique values:  6                    missing .:  0/5606
      unique mv codes:  1                      missing .*:  4/5606

           tabulation:  Freq.   Numeric  Label
                         5210         1  white
                           44         2  mixed
                          191         3  asian or asian british
                           88         4  black or black british
                           19         5  chinese
                           50         6  other ethnic group
                            4        .b
```

OLS Regression model

```
note: highestqual_1 omitted because of collinearity

Linear regression                               Number of obs =    2874
                                                F( 25,  2848) =   89.93
                                                Prob > F      =  0.0000
                                                R-squared     =  0.4241
                                                Root MSE      =  .42768
```

lnhourpay1	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
empmon1	.0010488	.0002352	4.46	0.000	.0005876	.00151
empmon12	-1.19e-06	6.20e-07	-1.92	0.056	-2.40e-06	2.80e-08
highestqua~1	(omitted)					
highestqua~2	.529733	.0274549	19.29	0.000	.4758995	.5835665
highestqua~3	.2562963	.0278869	9.19	0.000	.2016157	.3109769
highestqua~4	.1261818	.0461071	2.74	0.006	.0357751	.2165885
highestqua~5	.1328501	.028516	4.66	0.000	.0769359	.1887642
highestqua~6	.0716075	.0276097	2.59	0.010	.0174705	.1257445
age1	.0411557	.0053888	7.64	0.000	.0305893	.0517221
age12	-.0004576	.0000643	-7.11	0.000	-.0005838	-.0003315
sex	-.1623129	.0181599	-8.94	0.000	-.1979207	-.1267051
publicr1	.0357029	.0178901	2.00	0.046	.000624	.0707818
marsta_1	-.656076	.1223337	-5.36	0.000	-.8959476	-.4162044
marsta_2	-.6183225	.1213722	-5.09	0.000	-.8563087	-.3803363
marsta_3	-.6037964	.1274975	-4.74	0.000	-.8537931	-.3537998
marsta_4	-.6828094	.1236704	-5.52	0.000	-.9253019	-.4403169
marsta_5	-.7369829	.1341482	-5.49	0.000	-1.00002	-.4739454
marsta_6	-.5294359	.1986432	-2.67	0.008	-.9189349	-.1399368
manager_1	.3163317	.0238053	13.29	0.000	.2696544	.3630091
manager_2	.0699455	.0208938	3.35	0.001	.028977	.110914
ftpt	.1729885	.0207028	8.36	0.000	.1323946	.2135824
ethnicity_1	.2713085	.0902418	3.01	0.003	.0943627	.4482543
ethnicity_2	.3117209	.1343821	2.32	0.020	.0482247	.575217
ethnicity_3	.3196444	.1069398	2.99	0.003	.1099571	.5293317
ethnicity_4	.2391422	.1114349	2.15	0.032	.0206409	.4576436
ethnicity_5	.2385038	.1805777	1.32	0.187	-.1155725	.59258
_cons	1.365041	.1855652	7.36	0.000	1.001185	1.728897

Investigation into optimization

Source	SS	df	MS	Number of obs = 2880
				F(2, 2877) = 97.82
Model	58.1233677	2	29.0616838	Prob > F = 0.0000
Residual	854.77532	2877	.297106472	R-squared = 0.0637
				Adj R-squared = 0.0630
Total	912.898687	2879	.317088811	Root MSE = .54507

lnhourpay1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
empmon1	.0023096	.0002663	8.67	0.000	.0017874	.0028317
empmon12	-2.93e-06	6.62e-07	-4.42	0.000	-4.22e-06	-1.63e-06
_cons	2.177791	.0184237	118.21	0.000	2.141666	2.213916

Breusch-Pagan Test for Heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of lnhourpay1

         chi2(1)      =    73.35
         Prob > chi2  =   0.0000
```

OLS Regression & Re-estimated OLS regression for Endogeneity

OLS Regression

Source	SS	df	MS	Number of obs = 2874
				F(24, 2849) = 87.08
Model	382.774671	24	15.9489446	Prob > F = 0.0000
Residual	521.801224	2849	.183152413	R-squared = 0.4232
				Adj R-squared = 0.4183
Total	904.575895	2873	.314854123	Root MSE = .42796

Re-estimated OLS after including predicted endogenous variable

Source	SS	df	MS	Number of obs = 2874
				F(25, 2848) = 83.77
Model	383.312758	25	15.3325103	Prob > F = 0.0000
Residual	521.263137	2848	.183027787	R-squared = 0.4237
				Adj R-squared = 0.4187
Total	904.575895	2873	.314854123	Root MSE = .42782

Multinomial logistic regression

```
Iteration 0:   log likelihood =  -3123.146
Iteration 1:   log likelihood = -2955.8437
Iteration 2:   log likelihood =  -2949.426
Iteration 3:   log likelihood = -2949.3923
Iteration 4:   log likelihood = -2949.3923

Multinomial logistic regression                 Number of obs   =       3460
                                                LR chi2(12)     =     347.51
                                                Prob > chi2     =     0.0000
Log likelihood = -2949.3923                     Pseudo R2       =     0.0556
```

manager1	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
manager						
highestqua~1	(omitted)					
highestqua~2	2.192559	.1729144	12.68	0.000	1.853653	2.531465
highestqua~3	1.512502	.1930174	7.84	0.000	1.134195	1.890809
highestqua~4	1.156803	.2705925	4.28	0.000	.6264517	1.687155
highestqua~5	.9762059	.2026002	4.82	0.000	.5791167	1.373295
highestqua~6	.778618	.2107107	3.70	0.000	.3656327	1.191603
age1	.0279594	.0040755	6.86	0.000	.0199716	.0359473
_cons	-3.663899	.2576012	-14.22	0.000	-4.168788	-3.15901
foreman_or~r						
highestqua~1	(omitted)					
highestqua~2	.9248502	.1651632	5.60	0.000	.6011362	1.248564
highestqua~3	.6772441	.1899032	3.57	0.000	.3050406	1.049447
highestqua~4	1.073683	.2463661	4.36	0.000	.5908142	1.556551
highestqua~5	.6014388	.1879111	3.20	0.001	.2331398	.9697379
highestqua~6	.1133257	.2101337	0.54	0.590	-.2985289	.5251802
age1	.0163124	.0046259	3.53	0.000	.0072458	.025379
_cons	-2.794156	.2642519	-10.57	0.000	-3.31208	-2.276232
not_manage~r	(base outcome)					

Post Estimation Tests For Joint Significance

```
( 1)  empmon1 = 0

      F(  1,  2848) =   19.88
           Prob > F =    0.0000


( 1)  highestqual_2 = 0
( 2)  highestqual_3 = 0
( 3)  highestqual_4 = 0
( 4)  highestqual_5 = 0
( 5)  highestqual_6 = 0

      F(  5,  2848) =  109.73
           Prob > F =    0.0000


( 1)  age1 = 0
( 2)  age12 = 0

      F(  2,  2848) =   31.61
           Prob > F =    0.0000


( 1)  marsta_1 = 0
( 2)  marsta_2 = 0
( 3)  marsta_3 = 0
( 4)  marsta_4 = 0
( 5)  marsta_5 = 0
( 6)  marsta_6 = 0

      F(  6,  2848) =    6.51
           Prob > F =    0.0000
```

```
( 1)  manager_1 = 0
( 2)  manager_2 = 0

       F(  2,  2848) =   88.36
            Prob > F =    0.0000


( 1)  ethnicity_1 = 0
( 2)  ethnicity_2 = 0
( 3)  ethnicity_3 = 0
( 4)  ethnicity_4 = 0
( 5)  ethnicity_5 = 0

       F(  5,  2848) =    2.05
            Prob > F =    0.0692
```