Assignment 3

1. C3

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| hrsemp | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | Sig |
| d88 | -1.099 | | 1.983 | -0.55 | | 0.580 | -5.005 | | 2.807 |  |
| d89 | 4.090 | | 2.481 | 1.65 | | 0.101 | -0.797 | | 8.977 |  |
| grant | 34.228 | | 2.858 | 11.97 | | 0.000 | 28.598 | | 39.858 | \*\*\* |
| grant\_1 | 0.504 | | 4.127 | 0.12 | | 0.903 | -7.625 | | 8.633 |  |
| lemploy | -0.176 | | 4.288 | -0.04 | | 0.967 | -8.621 | | 8.269 |  |
| Constant | 9.325 | | 14.928 | 0.62 | | 0.533 | -20.075 | | 38.725 |  |
|  | | | | | | | | | | |
| Mean dependent var | | 14.968 | | | SD dependent var | | | 25.711 | |
| R-squared | | 0.491 | | | Number of obs | | | 390.000 | |
| F-test | | 48.206 | | | Prob > F | | | 0.000 | |
| Akaike crit. (AIC) | | 3019.439 | | | Bayesian crit. (BIC) | | | 3043.236 | |
|  | | | | | | | | | | |
|  | | | | | | | | | | |
| *\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*  (a)135 firms are used in the FE estimation.  (b)135\*3=405. The total number of observations should be used in the estimation is 405, if each firm had data for all three years. But due to missing data, we only have 390 observations. | | | | | | | | | |

1. Regression result

ii.

The coefficient of grant is 34.228, which means if a firm received the grant for the current year, the estimated job training time per employee will increase by 34 hours. This effect is statistically significant at 1% level due to p-value is 0, and t-value equal to 11.97.

iii.

No, it is not surprising because grant\_1 measures the effect of grant on job training hours at last year, this effect may not continue into this year.

iv.

The coefficient of lemploy, is -0.176, and t value is -0.04, p value is 0.967.

Therefore, larger firms provide their employees less training due to the sign of is negative. But this difference is very small and not significant even at 10% level.

If a firm has 10% more employees, the training hours will decrease by 0.0176 hours.

1. C6.

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Randome effect Fixed effect

lwage lwage

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educ 0.092\*\*\*

(0.01)

black -0.138\*\*\*

(0.05)

hisp 0.022

(0.04)

exper 0.104\*\*\*

(0.02)

expersq -0.005\*\*\* -0.005\*\*\*

(0.00) (0.00)

married 0.064\*\*\* 0.046\*\*

(0.02) (0.02)

d81 0.045\* 0.155\*\*\*

(0.02) (0.02)

d82 0.040 0.259\*\*\*

(0.03) (0.02)

d83 0.034 0.364\*\*\*

(0.04) (0.03)

d84 0.061 0.502\*\*\*

(0.05) (0.04)

d85 0.079 0.632\*\*\*

(0.06) (0.05)

d86 0.117 0.781\*\*\*

(0.07) (0.06)

d87 0.166\*\* 0.945\*\*\*

(0.08) (0.07)

union 0.174\*\*\* 0.148\*\*\*

(0.03) (0.03)

union\*t -0.016\*\*\* -0.016\*\*\*

(0.01) (0.01)

\_cons 0.014 1.412\*\*\*

(0.15) (0.02)

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N 4360 4360

adj. R-sq 0.063

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Standard errors in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01

In the random effect estimation, the coefficient of union is 0.174 with a significant effect at 1% level, indicating union has a significant effect on wage and if a person in the union, his wage is 17% higher than the person not in the union. The coefficient of union\*t is -0.016, also has a significant effect on lwage at 1% level.

Based on fixed effect estimation, the coefficient of union is 0.148 with a significant effect at 1% level. The coefficient of union\*t is -0.016, also has a significant effect at 1% level. Therefore, this result is similar to the result of the random effect estimation.