

# Assignment 1

Ghazal

## DA3 Assignment 1

### 1.Introduction

This assignment presents earnings per hour of **this** occupation for the ones who has more than associate degree or occupational /vocational

### 2. Data

### 3. Regressions

### 4. Performance of Models

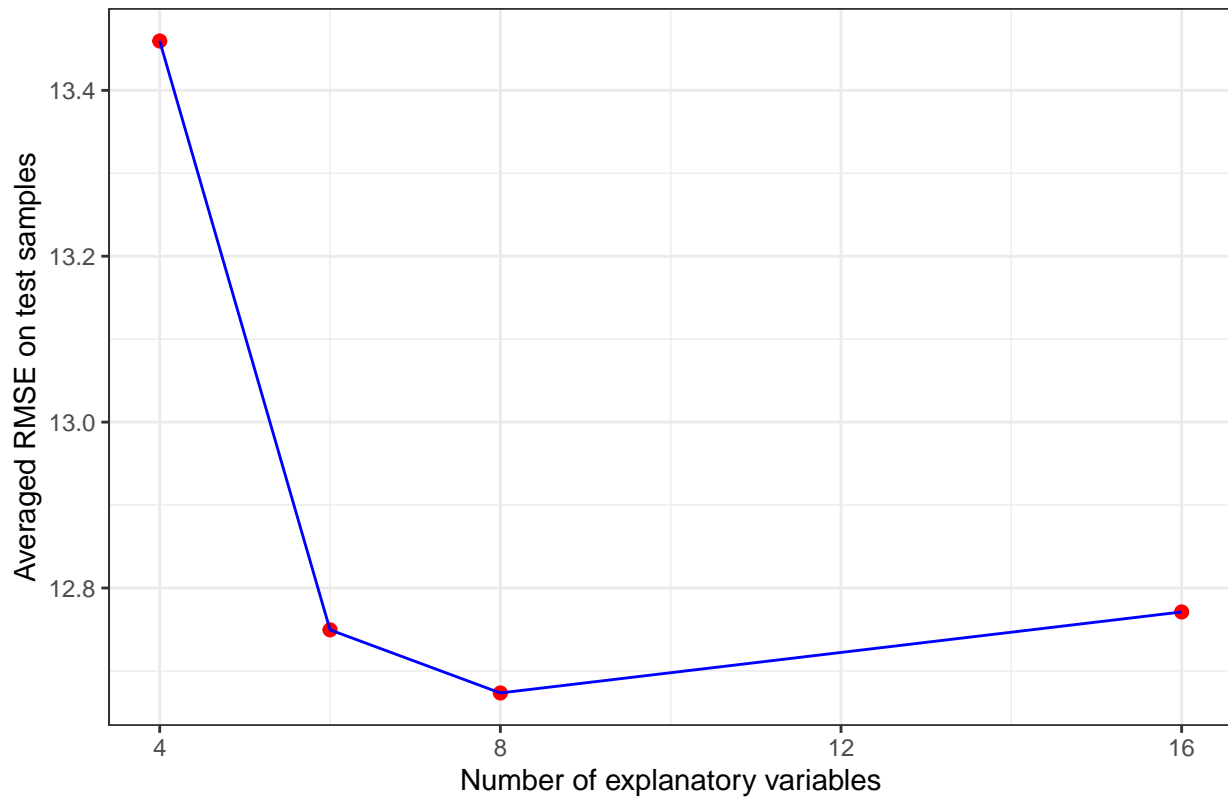
### 5. Prediction

### 5. Summary

##	M1	M2
## Dependent Var.:	Hourly wage	Hourly wage
##		
## Intercept	26.10*** (0.5409)	-16.75** (5.429)
## MA Degree	4.821** (1.636)	4.388** (1.553)
## Professional Degree	4.015 (4.092)	2.881 (3.919)
## PhD	24.20*** (6.838)	21.01** (6.494)
## Age		1.895*** (0.2938)
## Age Squared		-0.0190*** (0.0036)
## Female		
## Private Sector		
## Has Child		
## MA Degree x Female		
## Professional Degree x Female		
## PhD x Female		
## Age x Female		
## Age Squared x Female		
## Female x Private Sector		
## Female x Has Child		
##		
## S.E. type	Heteroskedast.-rob.	Heteroskedast.-rob.
## AIC	5,635.0	5,559.1
## BIC	5,653.2	5,586.4
## RMSE	13.391	12.649
## R2	0.03195	0.13629

## Observations	701	701
## No. Variables	3	5
##	M3	M4
## Dependent Var.:	Hourly wage	Hourly wage
##		
## Intercept	-17.50** (5.695)	-38.14** (14.09)
## MA Degree	4.371** (1.575)	-1.333 (3.142)
## Professional Degree	1.489 (4.190)	-1.463 (4.922)
## PhD	21.00** (6.489)	17.83*** (2.500)
## Age	1.976*** (0.2939)	2.885*** (0.7324)
## Age Squared	-0.0199*** (0.0036)	-0.0287*** (0.0087)
## Female	-4.124*** (1.204)	28.02. (15.66)
## Private Sector	2.546* (1.185)	3.085 (2.425)
## Has Child		0.3646 (2.521)
## MA Degree x Female		7.772* (3.630)
## Professional Degree x Female		9.736 (9.366)
## PhD x Female		3.571 (9.116)
## Age x Female		-1.493. (0.8231)
## Age Squared x Female		0.0153 (0.0099)
## Female x Private Sector		-0.9502 (2.773)
## Female x Has Child		1.407 (2.807)
##		
## S.E. type	Heteroskedast.-rob.	Heteroskedast.-rob.
## AIC	5,545.3	5,545.4
## BIC	5,581.7	5,618.2
## RMSE	12.490	12.349
## R2	0.15794	0.17677
## Observations	701	701
## No. Variables	7	15

Prediction performance and model complexity



```
# Select Model 3
```

```
#####
```

```
# 5C) Prediction
```

```
# Compare model1 and model3 to predict our the hourly wage
```

```
dt <- dt %>% select(grade92, age, female, w, ed_BA, ed_MA, ed_Profess, ed_PhD, agesq, privt_sec, child)
```

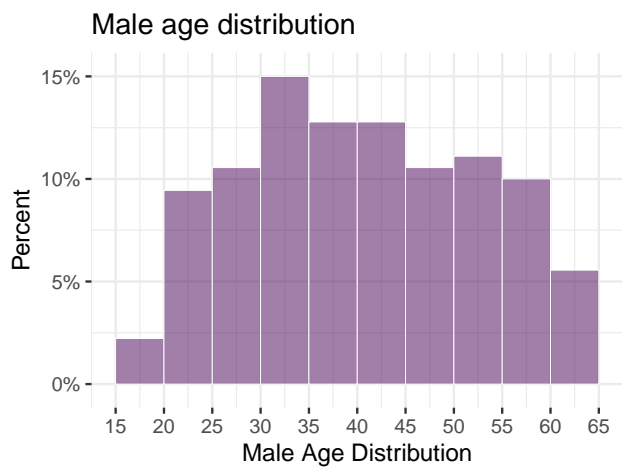
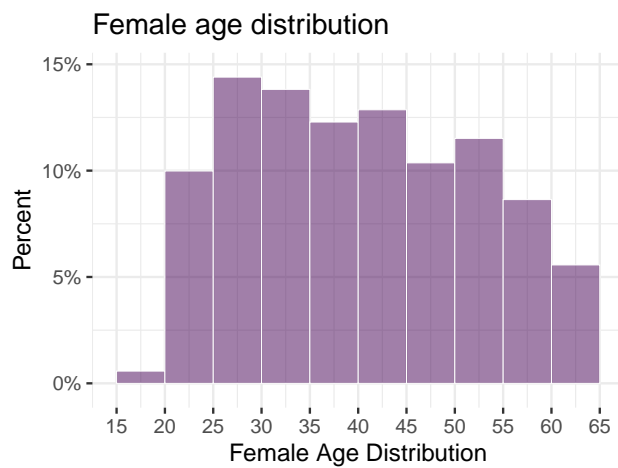
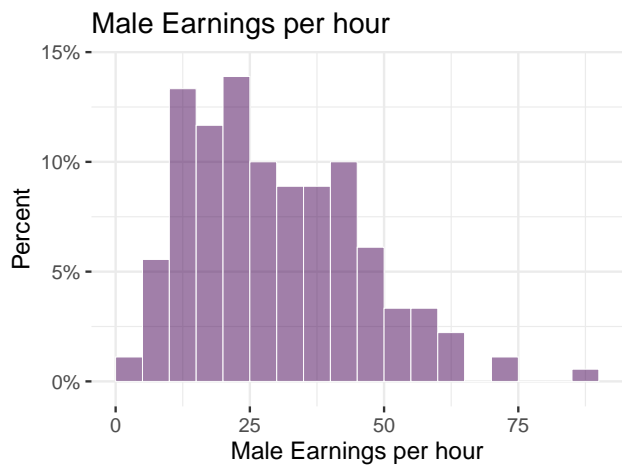
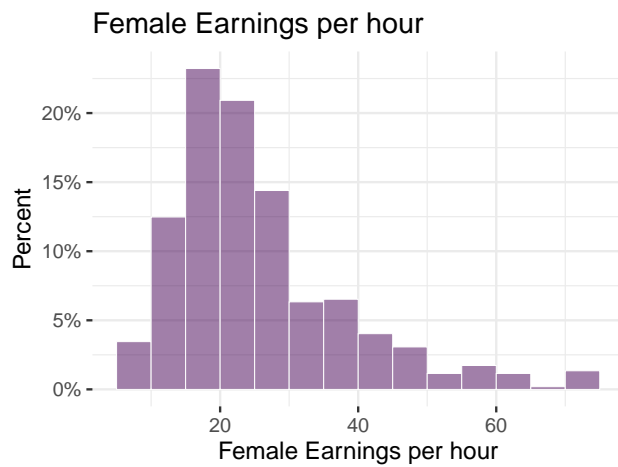
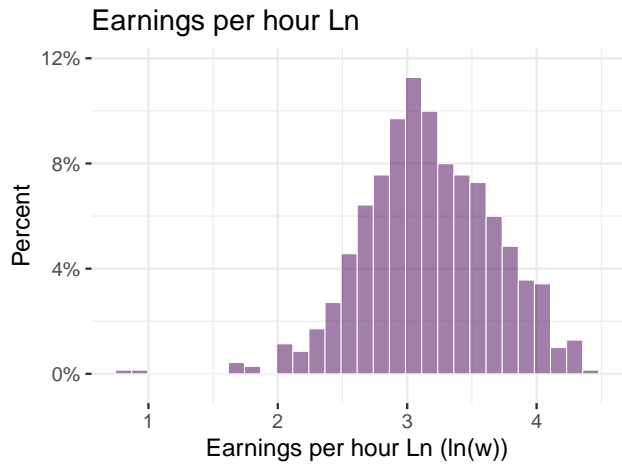
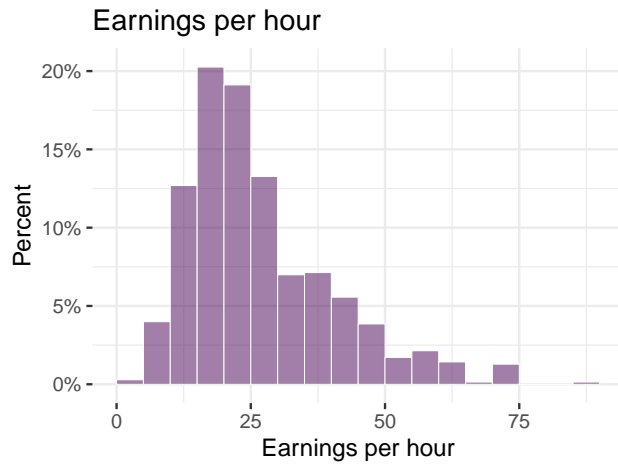
## Appendix

### Descriptive Data Summary

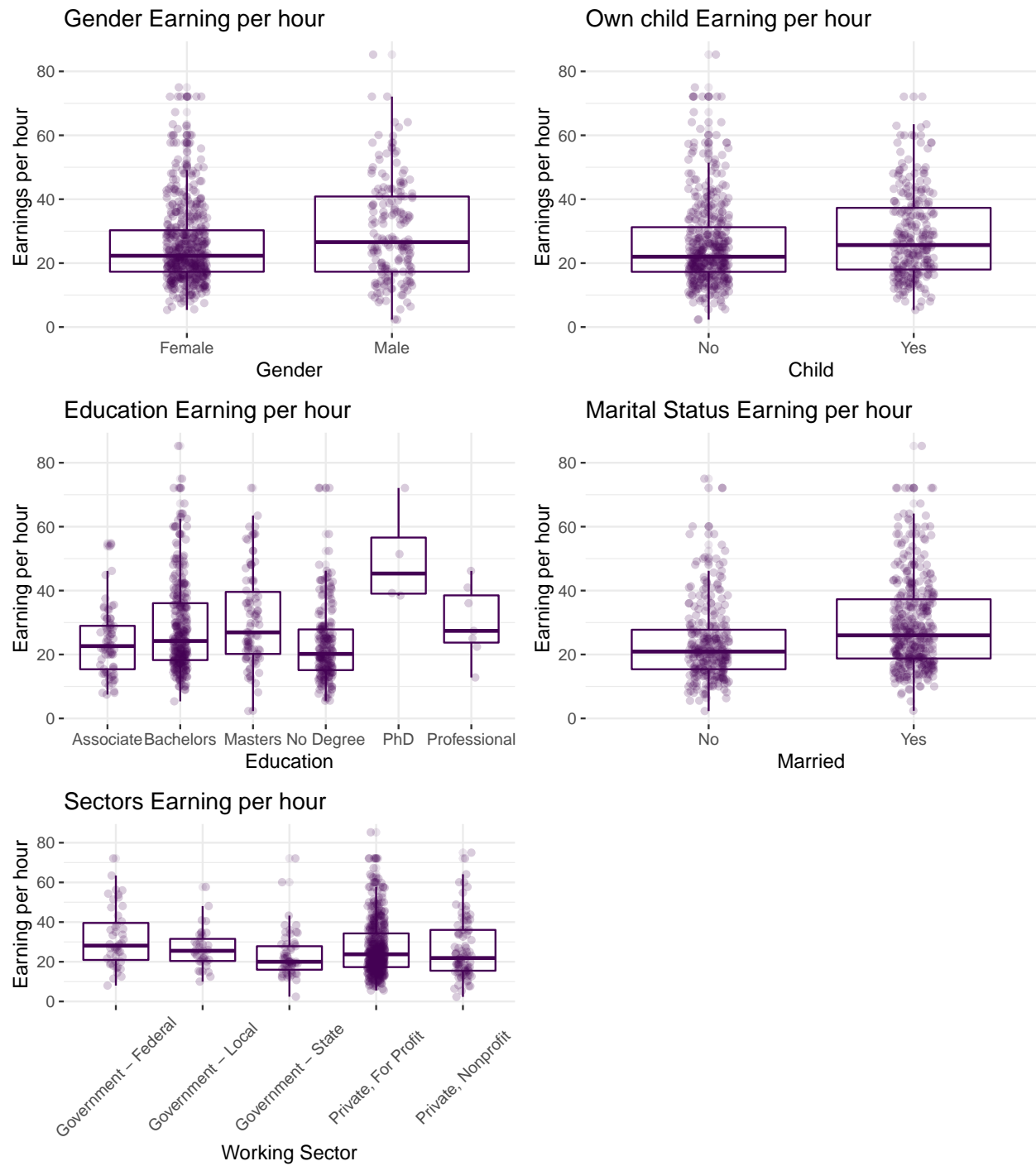
Table 1: Descriptive Summary Statistics

	Median	Mean	SD	Min	Max	P05	P95	N
Weekly earnings	961.53	1111.08	605.24	75.00	2884.61	400.00	2394.00	701
Weekly hours worked	40.00	40.88	7.44	6.00	65.00	28.00	55.00	701
Earning per hour	23.50	26.92	13.62	2.31	85.26	11.00	55.88	701
Female	1.00	0.74	0.44	0.00	1.00	0.00	1.00	701
BA Degree	0.00	0.44	0.50	0.00	1.00	0.00	1.00	701
MA Degree	0.00	0.13	0.34	0.00	1.00	0.00	1.00	701
Professional Degree	0.00	0.01	0.10	0.00	1.00	0.00	0.00	701
PhD	0.00	0.01	0.08	0.00	1.00	0.00	0.00	701
Age	40.00	40.83	11.91	19.00	64.00	23.00	61.00	701
Work in Private Sector	1.00	0.79	0.41	0.00	1.00	0.00	1.00	701
Has child	0.00	0.37	0.48	0.00	1.00	0.00	1.00	701

## Histograms

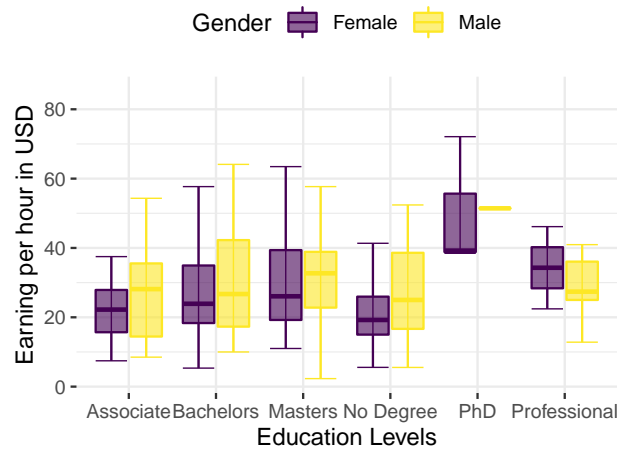


## One variable plots

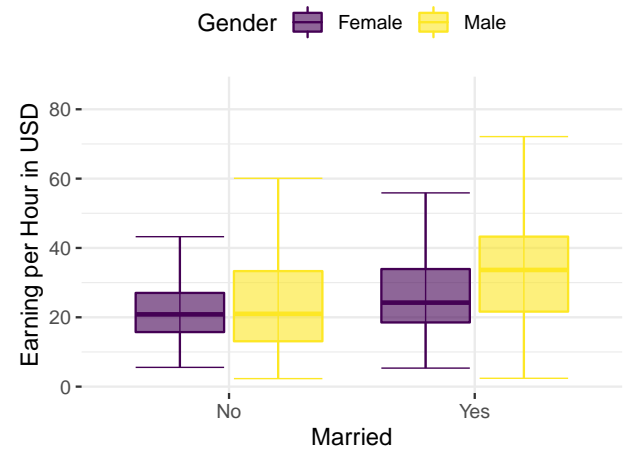


## Two Variable plots

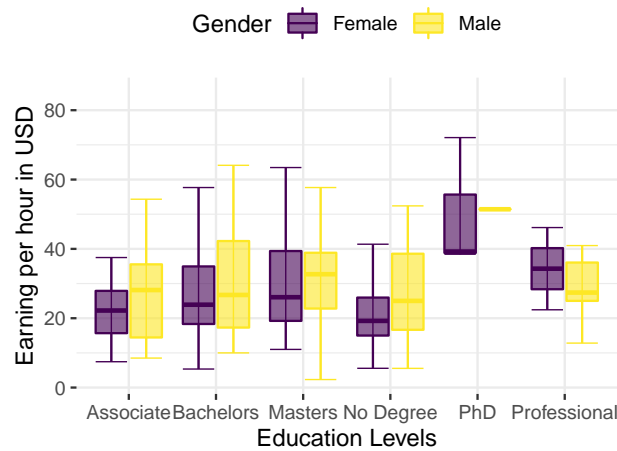
Gender and education levels Earning per ho



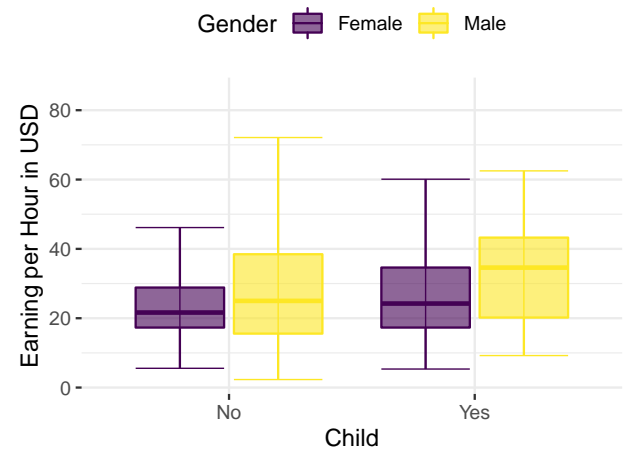
Gender and marital status Earning per hour



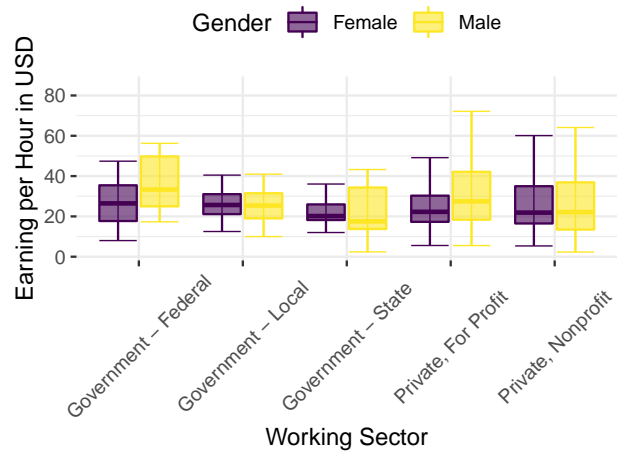
Marital status and education level Earning p



Gender and owning a child Earning per hour



Gender and sectors Earning per hour



## Loess

