

Thesis Survey Data analysis

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This data analysis is conducted using the R language and the data is stored in a .csv file.

Dataset

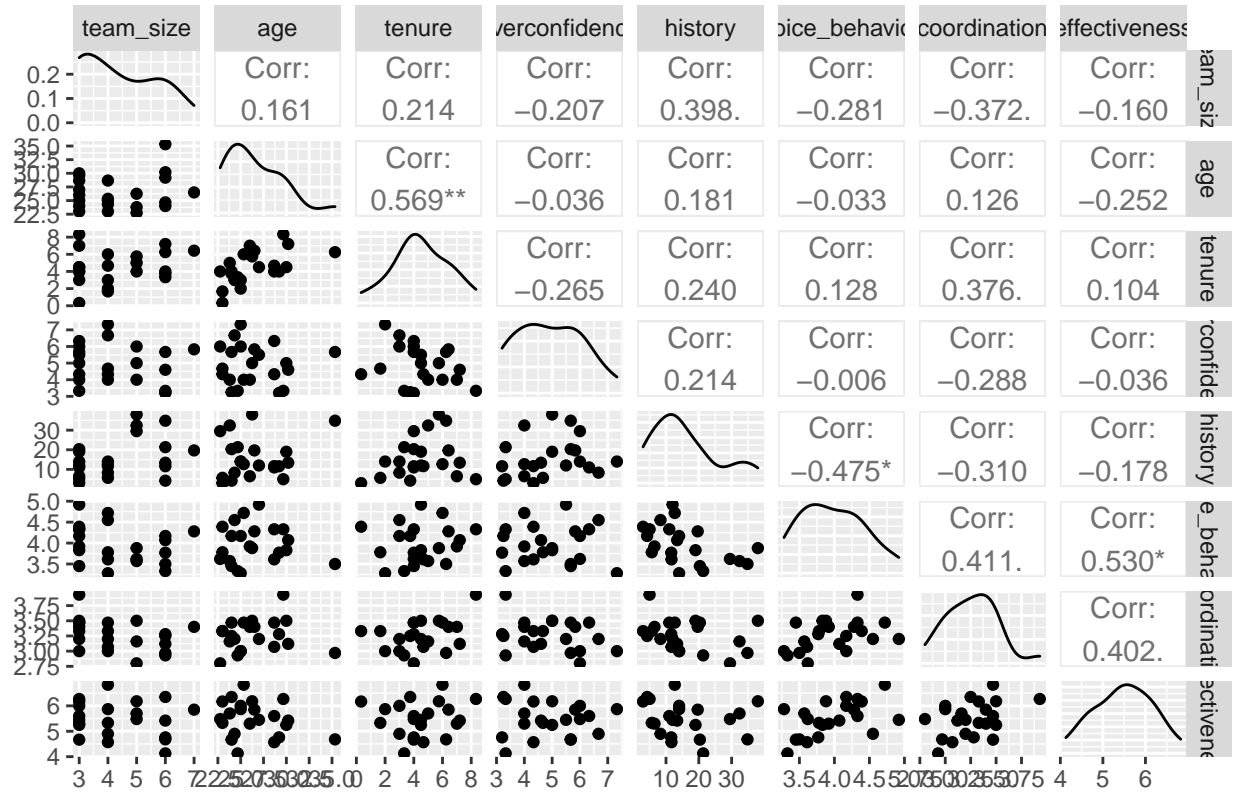
##	team	org	team_size	response_rate	response_count	age	tenure
## 1	VxWVZXy	qX0d3XD	3	0.67	2	26.00	7.00
## 2	0lvA1P1	m14MwXj	4	0.75	3	25.33	6.00
## 3	5x0nMXW	oXoqeP0	3	1.00	3	24.00	4.00
## 4	JlBq3PN	K13zeP6	4	0.75	3	25.00	2.00
## 5	rX1wnPb	ylrepPL	6	0.83	5	29.20	4.00
## 6	KPjegx7	VxWvAXy	4	0.75	3	24.33	3.00
## 7	WXz0pPm	0xAoG1Q	4	0.75	3	28.67	4.67
## 8	zP7KKP8	5x02qXW	6	0.67	4	24.00	3.75
## 9	5P88oP9	5x02qXW	7	0.86	6	26.50	6.42
## 10	4xdmYPE	5P8oox9	3	1.00	3	29.67	8.33
## 11	YXmyDXN	k71kqxD	3	0.67	2	25.00	3.00
## 12	DPpkGx8	k71kqxD	4	0.75	3	23.00	1.67
## 13	8xNAJXm	yEXnYlg	5	1.00	5	23.80	5.00
## 14	m14MwXj	GVX26X9	5	0.80	4	22.75	4.00
## 15	gxwyalv	M8xNJxm	3	1.00	3	28.67	4.00
## 16	ylrepPL	M8xNJxm	3	0.67	2	30.00	4.50
## 17	2PJKk10	M8xNJxm	3	1.00	3	23.00	0.33
## 18	VxWvAXy	M8xNJxm	6	0.83	5	30.20	7.20
## 19	0xAoG1Q	3B16N1b	3	0.67	2	27.00	4.50
## 20	rX1dn1b	3B16N1b	5	0.80	4	26.25	5.75
## 21	5x02qXW	3B16N1b	6	0.50	3	24.67	3.33
## 22	JlBJY1N	3B16N1b	6	1.00	6	35.33	6.25
##	overconfidence	history	voice_behavior	coordination	effectiveness		
## 1	4.00	6.50	3.92	3.40	5.30		
## 2	4.00	12.67	4.72	3.47	6.83		
## 3	5.67	20.33	3.45	3.47	4.67		
## 4	7.33	14.00	3.28	3.00	5.87		
## 5	3.20	11.60	3.77	3.28	4.76		
## 6	6.67	8.33	4.55	3.20	4.90		
## 7	4.33	11.67	3.61	3.07	4.57		
## 8	3.25	4.25	4.17	3.25	6.35		
## 9	5.83	19.67	4.28	3.40	5.85		
## 10	3.33	5.00	4.33	3.93	6.27		
## 11	6.00	14.00	4.17	3.00	6.00		
## 12	4.67	5.67	3.78	3.33	5.33		
## 13	4.00	32.40	3.57	3.16	5.70		
## 14	6.00	29.50	3.62	2.80	5.48		
## 15	6.33	11.00	4.33	3.47	5.60		

## 16	5.00	19.00	3.83	3.50	5.25
## 17	4.33	3.00	4.39	3.33	6.17
## 18	4.60	13.40	4.07	3.12	5.42
## 19	5.50	12.00	4.92	3.20	5.45
## 20	5.00	38.00	3.88	3.50	6.18
## 21	3.33	21.33	3.33	2.93	4.13
## 22	5.67	34.83	3.50	2.97	4.68

General Analysis

Correlogram of core variables

Pairwise Correlation Matrix



Multiple Linear Regression of all variables against team effectiveness

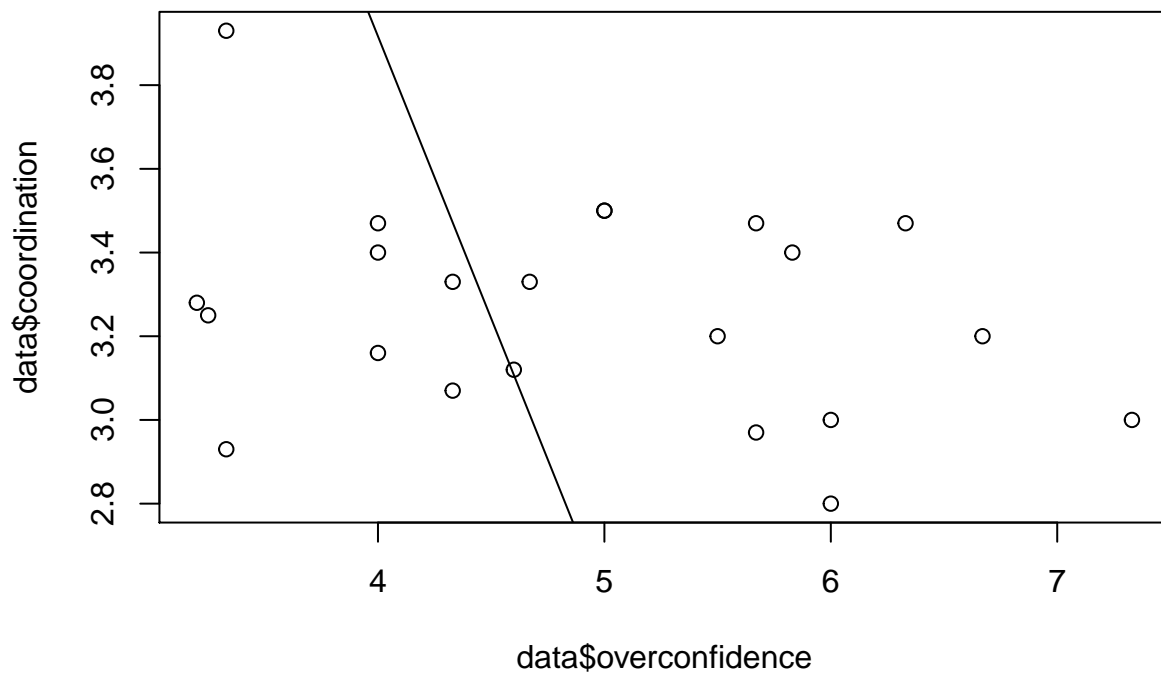
```
##
## Call:
## lm(formula = effectiveness ~ ., data = core_data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.03124 -0.25415  0.06252  0.29934  1.00788
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    1.54565    3.25897   0.474   0.6426
## team_size      0.04067    0.13321   0.305   0.7646
## age           -0.08096    0.05469  -1.480   0.1610
## tenure         0.03772    0.10823   0.349   0.7326
## overconfidence 0.03276    0.14083   0.233   0.8194
## history        0.00907    0.01878   0.483   0.6367
## voice_behavior 0.69866    0.38103   1.834   0.0881 .
## coordination   0.81453    0.74870   1.088   0.2950
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6257 on 14 degrees of freedom
## Multiple R-squared:  0.4352, Adjusted R-squared:  0.1529
## F-statistic: 1.541 on 7 and 14 DF,  p-value: 0.2322
```

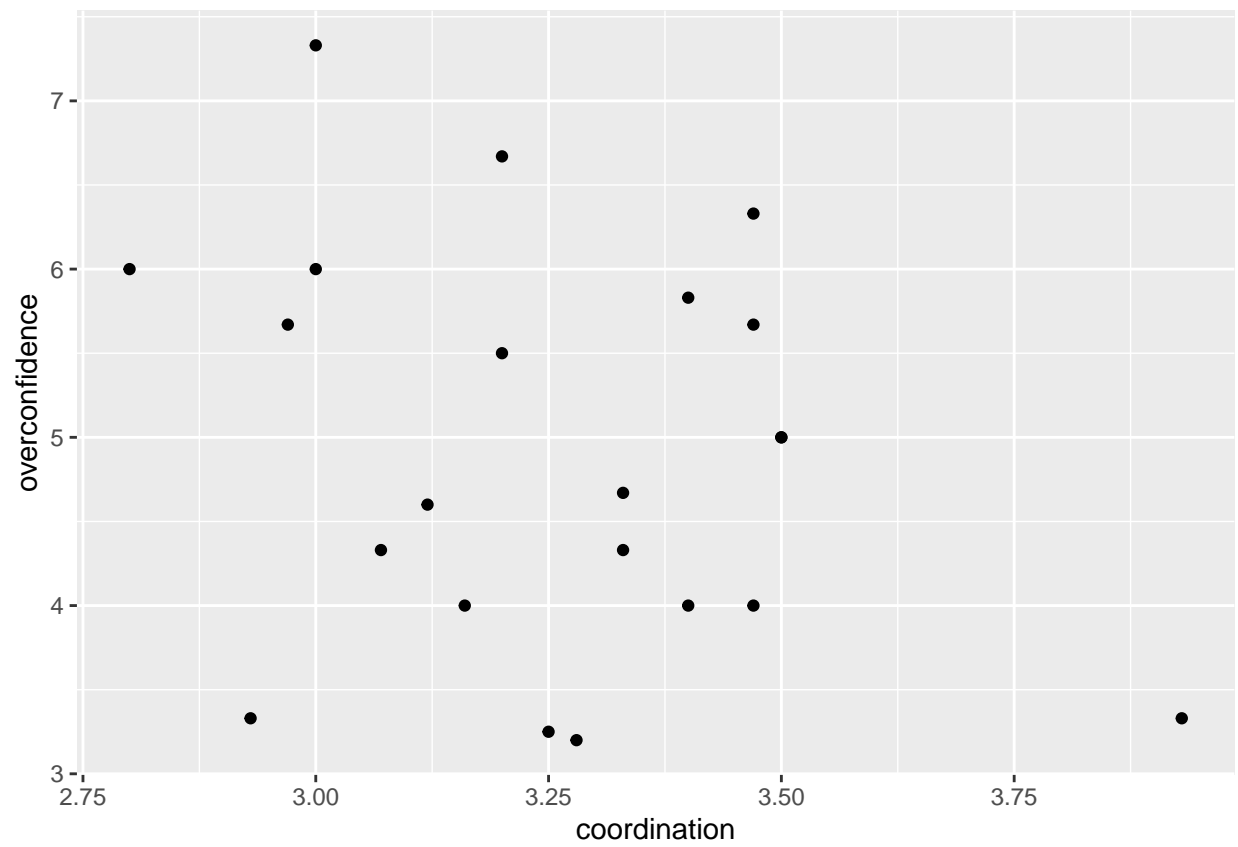
Hypothesis testing

Hypothesis No. 1

H1: Team Overconfidence has a negative effect on team coordination

```
##  
## Call:  
## lm(formula = overconfidence ~ coordination, data = data)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max   
## -2.0296 -0.7146  0.1071  0.6772  2.0648   
##  
## Coefficients:  
##              Estimate Std. Error t value Pr(>|t|)      
## (Intercept)    9.310      3.276   2.842  0.0101 *     
## coordination   -1.348      1.001  -1.347  0.1930      
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 1.167 on 20 degrees of freedom  
## Multiple R-squared:  0.08318,    Adjusted R-squared:  0.03734   
## F-statistic: 1.814 on 1 and 20 DF,  p-value: 0.193
```

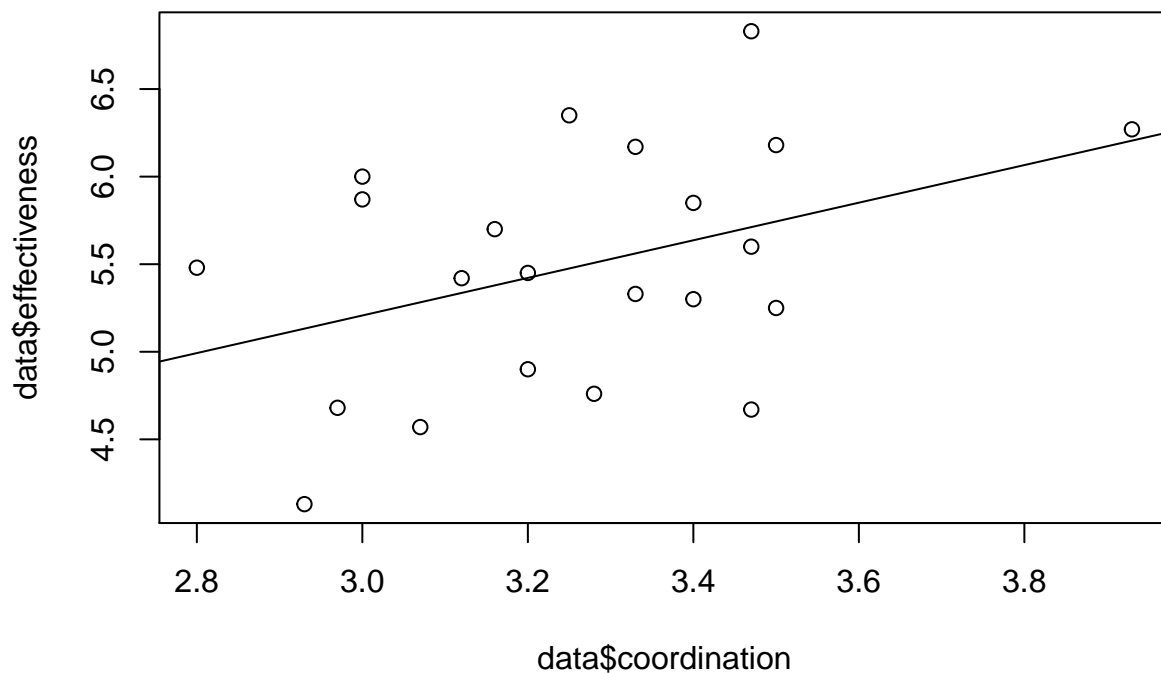


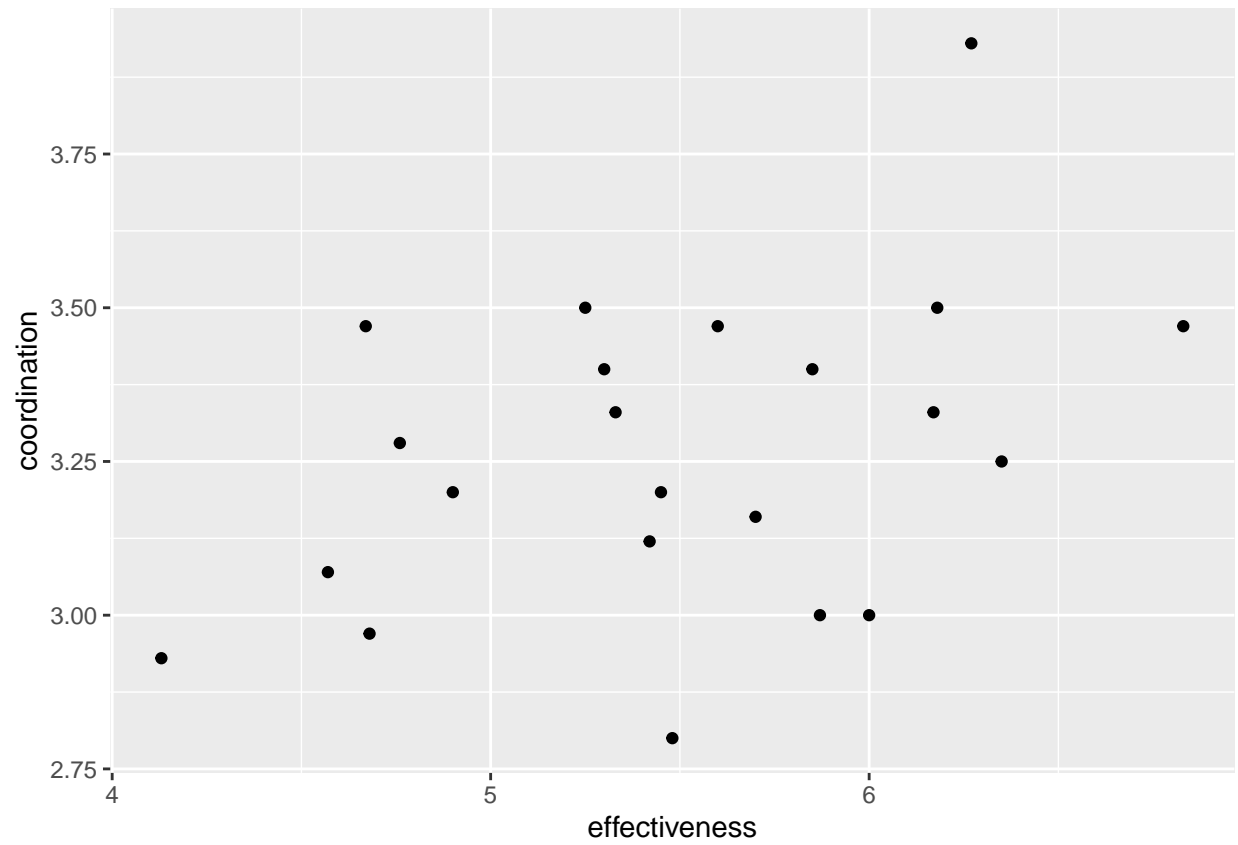


Hypothesis No. 2

H2: Team Overconfidence has a positive effect on team effectiveness

```
##  
## Call:  
## lm(formula = effectiveness ~ coordination, data = data)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max   
## -1.04159 -0.49459  0.04643  0.47478  1.11841   
##  
## Coefficients:  
##              Estimate Std. Error t value Pr(>|t|)      
## (Intercept)   1.9866     1.7909   1.109  0.2805      
## coordination   1.0735     0.5473   1.961  0.0639 .      
## ---  
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
##  
## Residual standard error: 0.6379 on 20 degrees of freedom  
## Multiple R-squared:  0.1613, Adjusted R-squared:  0.1194   
## F-statistic: 3.847 on 1 and 20 DF,  p-value: 0.06391
```

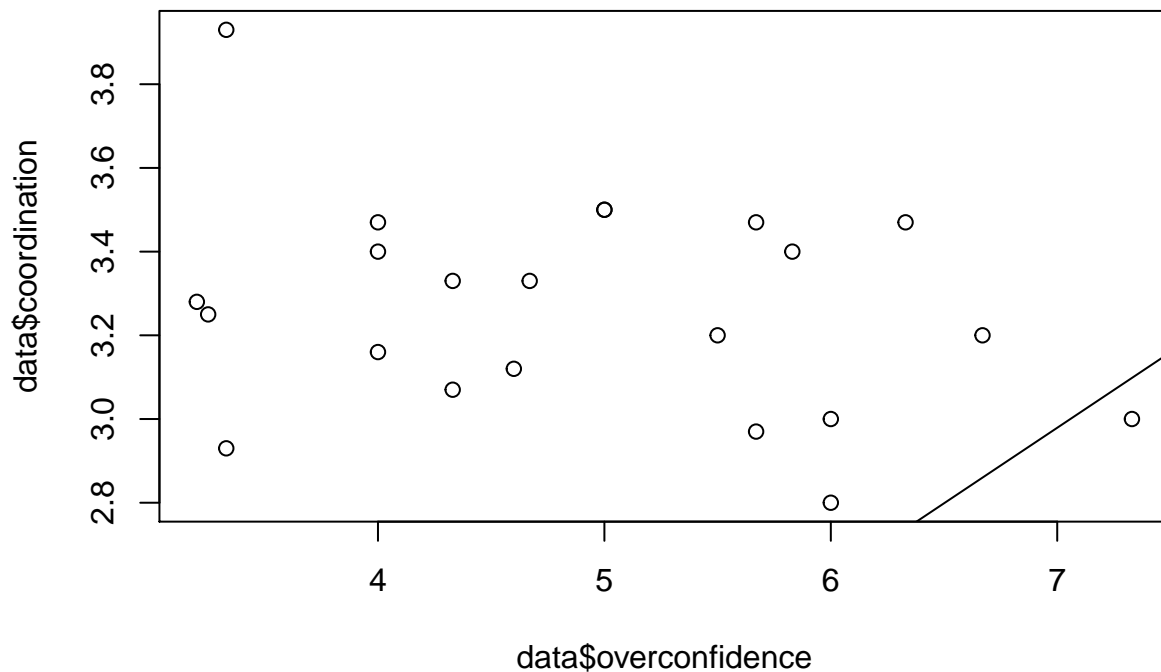


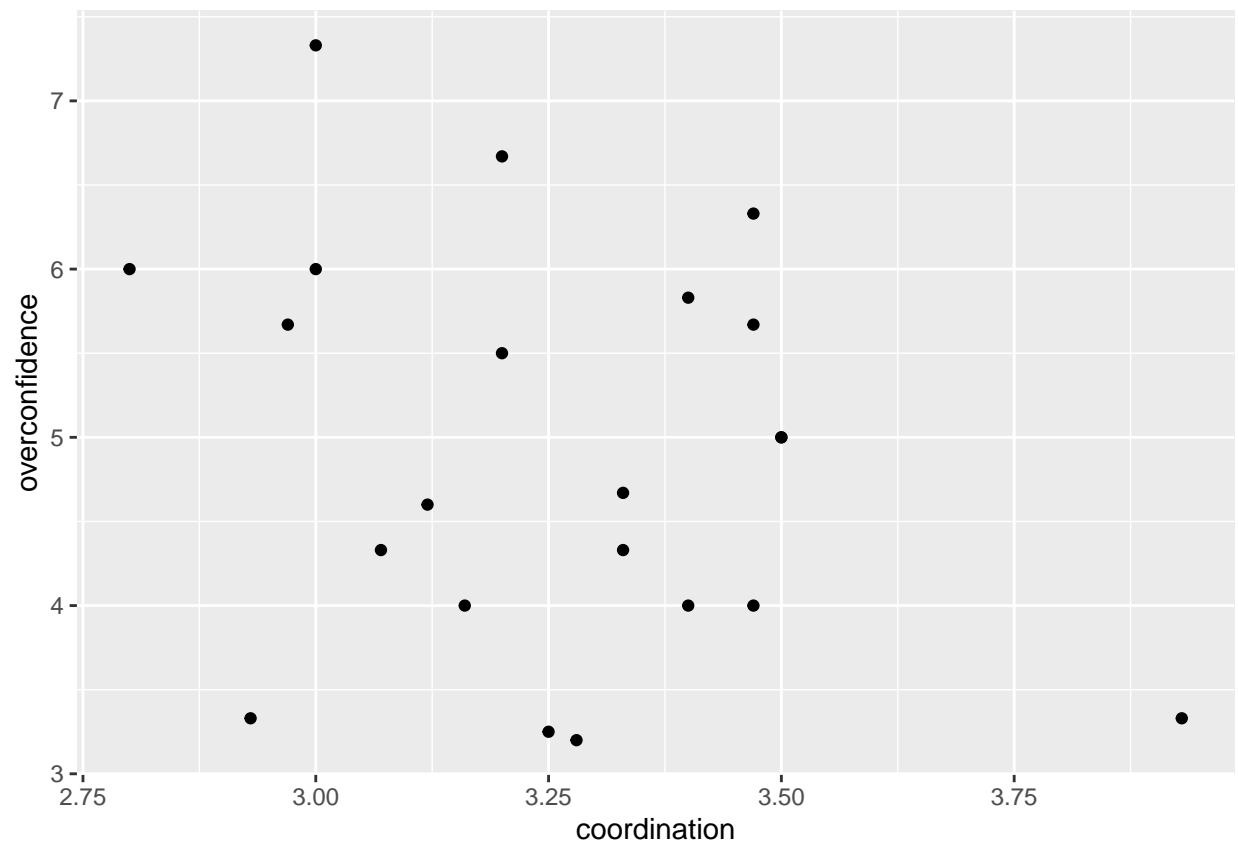


Hypothesis No. 3

H3: Team Overconfidence has a positive effect on team response rate

```
##
## Call:
## lm(formula = coordination ~ overconfidence + voice_behavior +
##     inter, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.33578 -0.16106 -0.05734  0.14110  0.40472
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.45259    1.85472   0.244   0.810
## overconfidence  0.36093    0.34614   1.043   0.311
## voice_behavior  0.79258    0.47149   1.681   0.110
## inter         -0.10827    0.08813  -1.228   0.235
##
## Residual standard error: 0.2285 on 18 degrees of freedom
## Multiple R-squared:  0.3084, Adjusted R-squared:  0.1931
## F-statistic: 2.675 on 3 and 18 DF,  p-value: 0.07818
##
## Warning in abline(lm_voice_coordination): only using the first two of 4
## regression coefficients
```



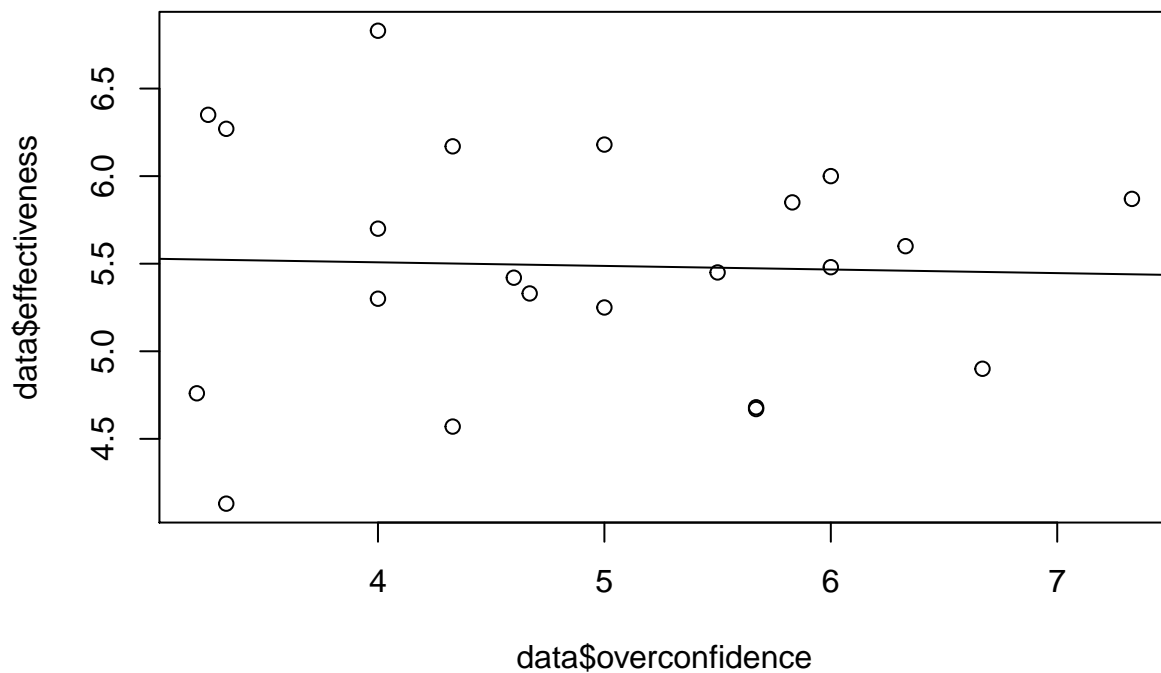


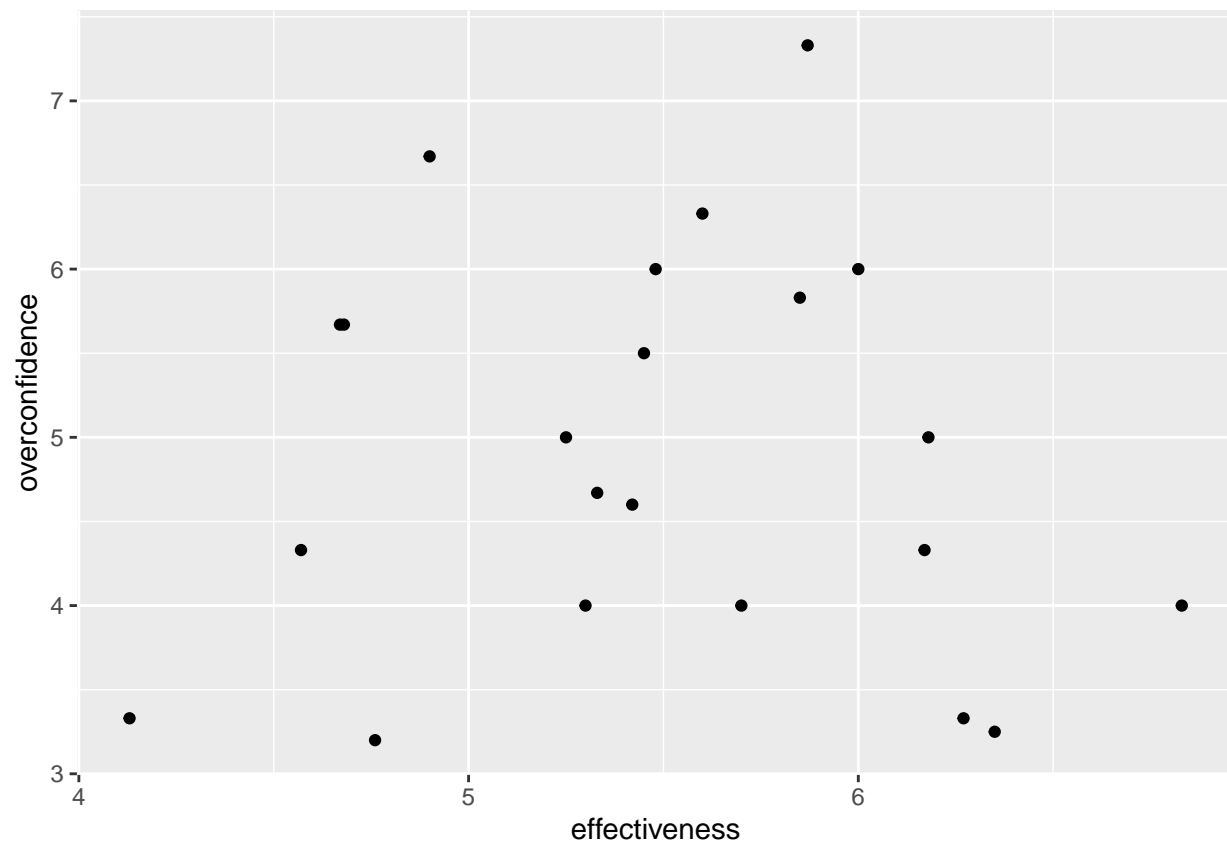
Extra Hypotheses

Hypothesis No. 1 - a

Hx1a: Team Overconfidence has a negative effect on team Effectiveness

```
##
## Call:
## lm(formula = effectiveness ~ overconfidence, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.39154 -0.47406 -0.00687  0.50759  1.32221
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    5.58988    0.64464   8.671 3.28e-08 ***
## overconfidence -0.02052    0.12774  -0.161   0.874
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6961 on 20 degrees of freedom
## Multiple R-squared:  0.001289,    Adjusted R-squared:  -0.04865
## F-statistic: 0.02582 on 1 and 20 DF,  p-value: 0.874
```





Hypothesis No. 1 - b

Hx1b: Team Overconfidence has a reverse effect on team Effectiveness mediated by team Coordination

```
##
## Call:
## lm(formula = effectiveness ~ overconfidence + coordination +
##     inter2, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.82638 -0.56431  0.06479  0.43270  1.07702
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   -9.9264     6.6484  -1.493   0.1527
## overconfidence  2.5229     1.3713   1.840   0.0824 .
## coordination   4.6957     2.0400   2.302   0.0335 *
## inter2        -0.7713     0.4261  -1.810   0.0870 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6159 on 18 degrees of freedom
## Multiple R-squared:  0.2964, Adjusted R-squared:  0.1791
## F-statistic: 2.527 on 3 and 18 DF,  p-value: 0.08991
##
## Warning in abline(lm_overconfidence_effectiveness_coordination): only using the
## first two of 4 regression coefficients
```

