Project

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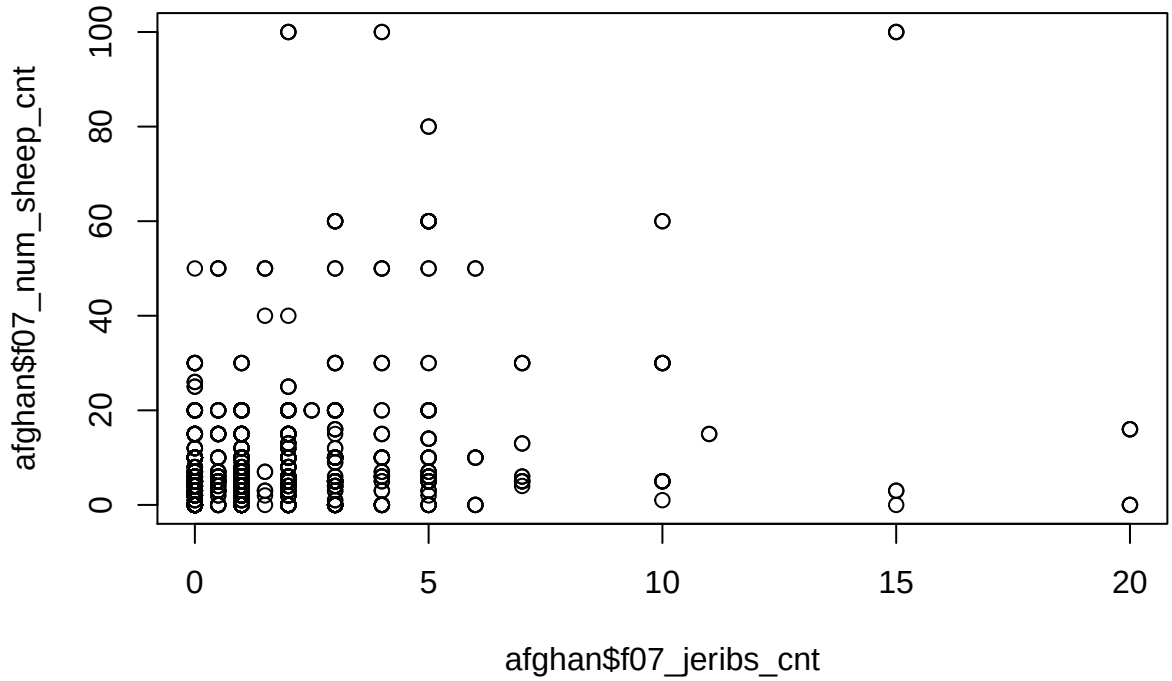
```
library(haven)
library(sandwich)
library(stargazer)
library(ggplot2)
library(car)
library(knitr)
afghan <- read_dta("~/Documents/Stats2/pivotproject/afghandata.dta")
```

```
kable(round(cor(afghan[, c("f07_formal_school", "f07_nearest_scl", "f07_heads_child_cnt",
    "f07_girl_cnt", "f07_age_cnt", "f07_age_head_cnt", "f07_yrs_ed_head_cnt",
    "f07_jeribs_cnt", "f07_num_sheep_cnt", "f07_duration_village_cnt", "f07_farsi_cnt",
    "f07_tajik_cnt", "f07_farmer_cnt", "f07_num_ppl_hh_cnt")]), digits = 2))
```

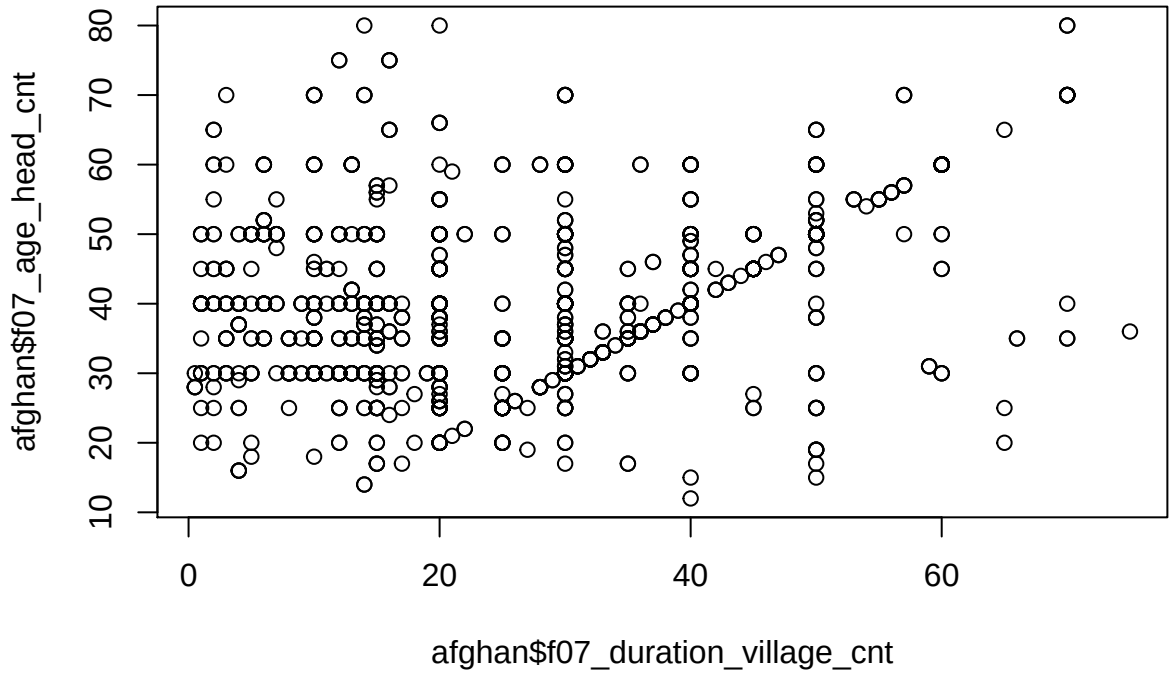
	f07_formal_school	f07_nearest_scl	f07_heads_child_cnt	f07_girl_cnt	f07_age_cnt
f07_formal_school	1.00	-0.12	0.00	-0.10	0.16
f07_nearest_scl	-0.12	1.00	0.04	-0.02	0.01
f07_heads_child_cnt	0.00	0.04	1.00	0.02	0.00
f07_girl_cnt	-0.10	-0.02	0.02	1.00	0.01
f07_age_cnt	0.16	0.01	0.00	0.01	1.00
f07_age_head_cnt	-0.03	0.03	0.12	-0.01	0.07
f07_yrs_ed_head_cnt	0.05	-0.01	0.01	0.00	0.01
f07_jeribs_cnt	0.00	0.01	0.00	0.03	0.00
f07_num_sheep_cnt	0.13	-0.03	-0.05	0.03	0.02
f07_duration_village_cnt	0.02	-0.06	-0.04	0.01	0.02
f07_farsi_cnt	-0.02	0.02	0.02	0.03	-0.01
f07_tajik_cnt	0.03	0.06	-0.02	0.00	-0.01
f07_farmer_cnt	-0.07	0.08	-0.01	-0.01	-0.03
f07_num_ppl_hh_cnt	0.06	-0.08	-0.20	0.05	0.01

none are more than 0.35. above magnitude 0.25 are: yrs head of household education and farmer -0.28, farsi and tajik -0.27, duration in village and age of household head 0.3, sheep and jerobs 0.32.

```
plot(afghan$f07_jeribs_cnt, afghan$f07_num_sheep_cnt)
```




```
plot(afghan$f07_duration_village_cnt, afghan$f07_age_head_cnt)
```



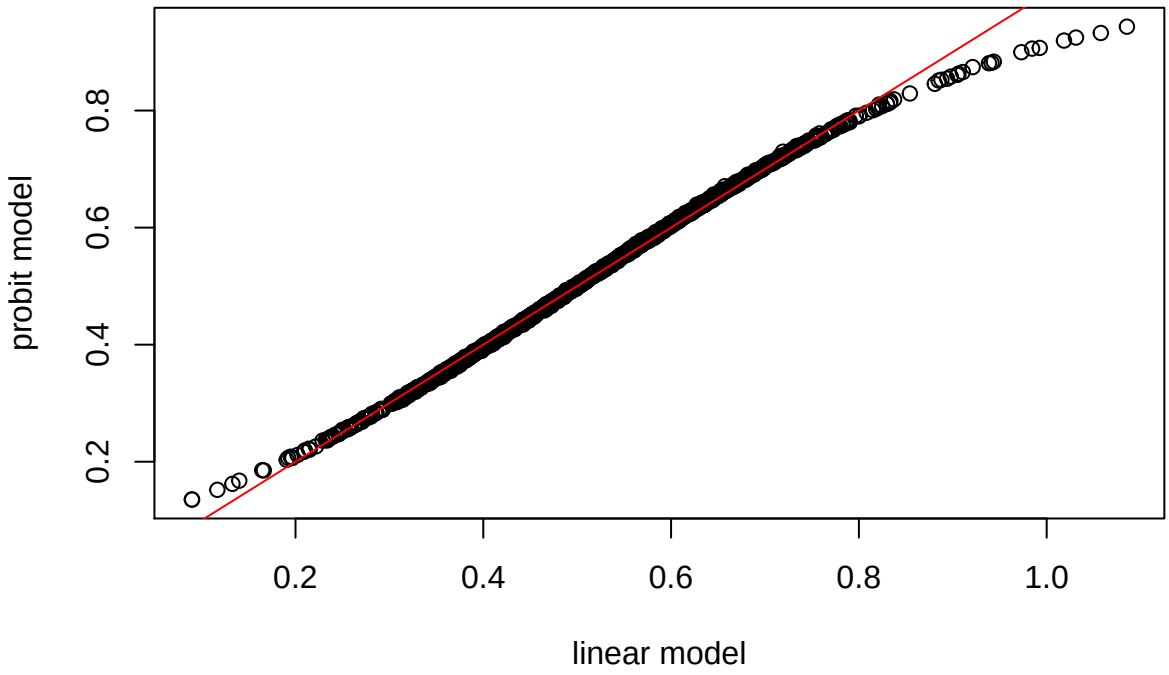
WHY CHOOSE PROBIT?

f07_nearest_scl, f07_girl_cnt, f07_age_cnt, f07_age_head_cnt, f07_num_sheep_cnt all significant

```
plot(predict(r2, type = "response"), predict(p2, type = "response"), xlab = "linear model",
    ylab = "probit model")
abline(a = 0, b = 1, col = "red")
```

Table 2:

	Dependent variable:			
	f07_formal_school			
	OLS		*probit*	
	(1)	(2)	(3)	(4)
Constant	0.671***	0.239**	0.440***	−0.685***
	(0.036)	(0.097)	(0.092)	(0.258)
f07_nearest_scl	−0.053***	−0.051***	−0.136***	−0.139***
	(0.011)	(0.011)	(0.029)	(0.029)
f07_girl_cnt		−0.114***		−0.303***
		(0.025)		(0.065)
f07_age_cnt		0.051***		0.134***
		(0.007)		(0.020)
f07_age_head_cnt		−0.003**		−0.008**
		(0.001)		(0.003)
f07_num_sheep_cnt		0.005***		0.015***
		(0.001)		(0.003)
f07_jeribs_cnt		−0.009		−0.024
		(0.006)		(0.016)
f07_yrs_ed_head_cnt		0.003		0.009
		(0.003)		(0.009)
f07_heads_child_cnt		0.062		0.170
		(0.046)		(0.124)
f07_duration_village_cnt		0.001		0.002
		(0.001)		(0.002)
f07_num_ppl_hh_cnt		0.006		0.017
		(0.004)		(0.011)
f07_tajik_cnt		0.042		0.112
		(0.031)		(0.082)
f07_farsi_cnt		−0.014		−0.034
		(0.032)		(0.084)
Observations	1,560	1,560	1,560	1,560
R^2	0.014	0.077		
Adjusted R^2	0.014	0.070		
Note:			*p<0.1; **p<0.05; ***p<0.01	



we can see the difference in the tails

```
linearHypothesis(p2, c("f07_tajik_cnt = 0", "f07_farsi_cnt = 0"), test = "F")
```

```
## Linear hypothesis test
##
## Hypothesis:
## f07_tajik_cnt = 0
## f07_farsi_cnt = 0
##
## Model 1: restricted model
## Model 2: f07_formal_school ~ f07_nearest_scl + f07_girl_cnt + f07_age_cnt +
##     f07_age_head_cnt + f07_num_sheep_cnt + f07_jeribs_cnt + f07_yrs_ed_head_cnt +
##     f07_heads_child_cnt + f07_duration_village_cnt + f07_num_ppl_hh_cnt +
##     f07_tajik_cnt + f07_farsi_cnt
##
##   Res.Df Df      F Pr(>F)
## 1   1549
## 2   1547  2 1.2658 0.2823
```

```
linearHypothesis(p2, c("f07_num_sheep_cnt = 0", "f07_jeribs_cnt = 0"), test = "F")
```

```
## Linear hypothesis test
##
## Hypothesis:
## f07_num_sheep_cnt = 0
## f07_jeribs_cnt = 0
##
## Model 1: restricted model
## Model 2: f07_formal_school ~ f07_nearest_scl + f07_girl_cnt + f07_age_cnt +
##     f07_age_head_cnt + f07_num_sheep_cnt + f07_jeribs_cnt + f07_yrs_ed_head_cnt +
##     f07_heads_child_cnt + f07_duration_village_cnt + f07_num_ppl_hh_cnt +
##     f07_tajik_cnt + f07_farsi_cnt
##
```

```
##   Res.Df Df      F    Pr(>F)
## 1   1549
## 2   1547  2 10.771 2.262e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

jeribs and sheep jointly significant farsi and tajik not.
