Gus Lipkin

Assignment 9

1. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
age	189	23.2381	5.298678	14	45
wgt	189	129.8148	30.57938	80	250
ptl	189	0.1957672	0.4933419	0	3
ftv	189	0.7936508	1.059286	0	6
bwt	189	2944.656	729.0224	709	4990

low	Freq.	Percent	Cum.
0	130	68.78	68.78
1	59	31.22	100
Total	189	100	

UT	Freq.	Percent	Cum.
0	161	85.19	85.19
1	28	14.81	100
Total	189	100	

race	Freq.	Percent	Cum.
1	96	50.79	50.79
2	26	13.76	64.55
3	67	35.45	100
Total	189	100	

HT	Freq.	Percent	Cum.
0	177	93.65	93.65
1	12	6.35	100
Total	189	100	

smoke	Freq.	Percent	Cum.
0	115	60.85	60.85
1	74	39.15	100
Total	189	100	

2. Logistic Regression Outputs

logit low wgt i.race smoke ht						
Iteration	0:	log	likelihood	-117.3360		
Iteration	1:	log	likelihood	-104.4935		
Iteration	2:	log	likelihood	-104.1246		
Iteration	3:	log	likelihood	-104.1237		
Iteration	4:	log	likelihood	-104.1237		
Logistic regression	Number of obs	189				
	LR chi2(5)	26.42				

	Prob > chi2	0.0001				
Log likelihood = -104.12371	Pseudo R2	0.1126				
low	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
wgt	-0.0179	0.0068	-2.6300	0.0080	-0.0312	-0.0046
race						
2	1.2877	0.5217	2.4700	0.0140	0.2652	2.3101
3	0.9436	0.4234	2.2300	0.0260	0.1138	1.7735
smoke	1.0716	0.3875	2.7700	0.0060	0.3120	1.8311
ht	1.7492	0.6908	2.5300	0.0110	0.3952	3.1031
_cons	0.3520	0.9244	0.3800	0.7030	-1.4598	2.1639
low	Odds Ratio	Std. Err.	[95% Conf.	Interval]		
wgt	0.9823	0.0067	0.9693	0.9954		
race						
2	3.6243	1.8906	1.3038	10.0752		
3	2.5693	1.0878	1.1206	5.8912		
smoke	2.9200	1.1315	1.3662	6.2407		
ht	5.7498	3.9721	1.4846	22.2680		
_cons	1.4220	1.3145	0.2323	8.7052		

3. Interpretation of the coefficients

Babies are .98 times as likely to be underweight for each additional pound that the mother weighed. If the mother was black or another race, the baby was 3.62 and 2.57 times as likely to be underweight. If the mother smoked, the baby was 5.75 times as likely to be underweight. And if the mother had hypertension, the baby was 5.75 times as likely to be underweight.

4. Stata Code

```
capture log close
log using gus_lipkin_Assignment_9, replace
import excel "/Users/guslipkin/Documents/Fall2020/QMB 3200 ~ Advanced
Quantitative Methods/Assignments/Assignment 9/Assignment9Data.xlsx",
sheet("Sheet1") firstrow case(lower)
clear all
```

```
summ age wgt ptl ftv bwt
tabulate low
tabulate race
tabulate smoke
tabulate ut
tabulate ht

logit low age wgt i.race i.smoke ptl ht ut ftv
logit , or

logit low wgt i.race smoke ht
logit , or

log close
```