Practical Week 6

Solutions

The regression model is:

$$Logdrink = \beta_1 + \beta_2 Sex + \beta_3 Age + \beta_{23} Sex * Age + \varepsilon$$

For men, this simplifies to:

$$Logdrink = (\beta_1 + \beta_2) + (\beta_3 + \beta_{23}) Age + \varepsilon$$

Slope= mean increase in log units per year

Intercept = mean log units consumed for man aged 0 years

For women:

$$Logdrink = \beta_1 + \beta_3 Age + \varepsilon$$

Regression results are as follows:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.363[a]	.132	.126	1.69256

a. Predictors: (Constant), SexAge, Age last birthday, Sex

R-squared is pretty low!

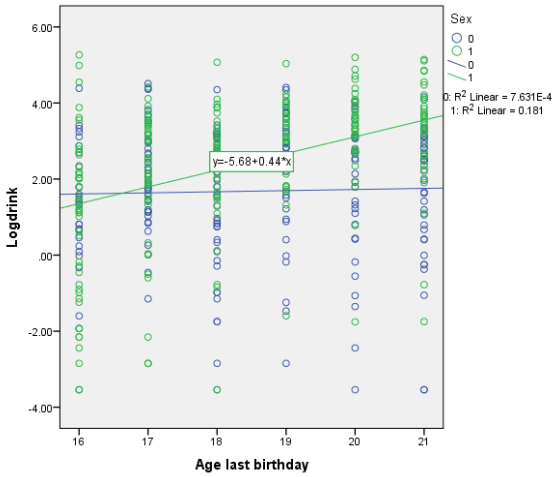
Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.136	1.327		.856	.392
Age last birthday	.029	.071	.028	.413	.679
Sex	-6.813	1.772	-1.882	-3.846	.000
SexAge	.410	.096	2.096	4.290	.000

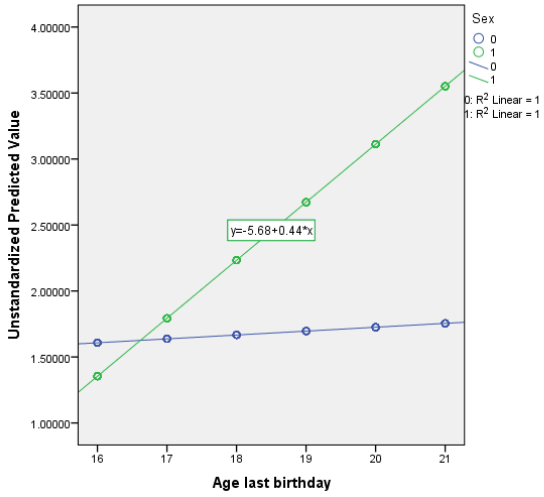
a. Dependent Variable: Logdrink

Age does not significantly affect log consumption (p-value=0.679)

Sex does have a statistically significant effect, as does the interaction.



Not very informative! A better option is to plot unstandardised predicted values on age.



Plotted regression lines are as follows: showing a major difference between age-related behaviour of men and women. Men's consumption increases substantially with age, whereas women's does not.