Analysis of the Cereal Dataset

The nutritional content of 80 cereals samples of 77 different bands was obtained. We do a regression of calories against protein, fat, complex carbohydrates and sugars. We used simulated dataset.

We create the histogram for the estimated slope associated with grams of fat. The figure 1 is the histogram when we assume the normality is satisfied and Figure 2 is which when it is not. The reference line locate at the centre, so the estimator seems not biased. Figure 1 has larger variance of the estimated slope of fat.

The results of hypothesis test shown in the table below. The means of the slope of fat in both model are around 9. And the normality satisfied model has larger SE of the estimate. The P-value in both model are significant, so we concluded that there are NOT enough evidence to say that the estimated slope associated with grams of fat is NOT 9.

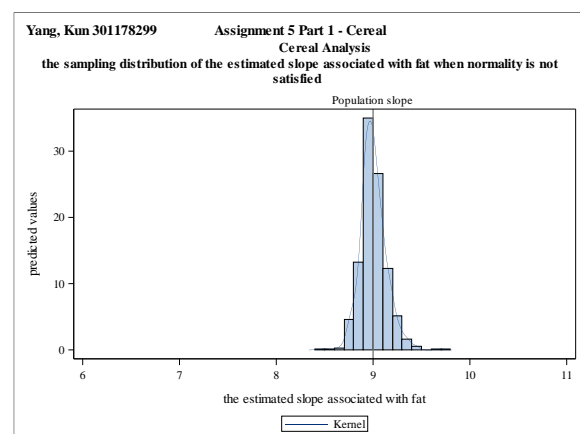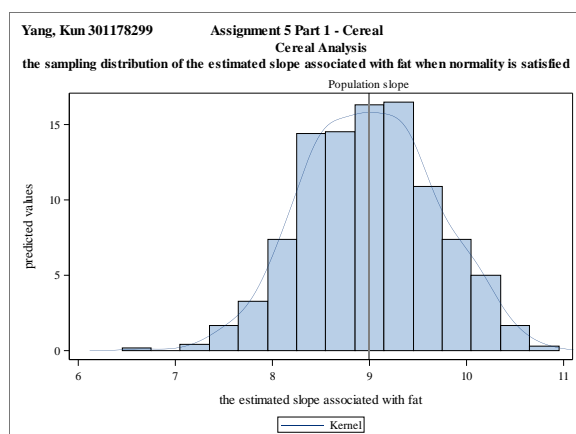| Normality	Mean of the slope	SE of the estimate	P-value (Tests for Mu0=9)
YES	8.999	0.674	Pr > 0.977
NO	9.003	0.135	Pr > 0.481

Figure1: *the histogram when the assumption of normality is satisfied*

Figure2: *the histogram when the assumption of normality is not satisfied*