

Appendix C: Detailed Statistical Output

First Model:

```
Residuals:
    Min       1Q   Median       3Q      Max
-13884  -6994  -5092   7125  48627

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -6916.24    1757.48   -3.935 8.74e-05 ***
age           239.99     22.29   10.767 < 2e-16 ***
bmi           332.08     51.31    6.472 1.35e-10 ***
children      542.86     258.24    2.102  0.0357 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 11370 on 1334 degrees of freedom
Multiple R-squared:  0.1201,    Adjusted R-squared:  0.1181
F-statistic: 60.69 on 3 and 1334 DF,  p-value: < 2.2e-16
```

Second Model:

```
Residuals:
    Min       1Q   Median       3Q      Max
-11837.2  -2916.7  -994.2   1375.3  29565.5

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -12052.46    951.26  -12.670 < 2e-16 ***
age           257.73     11.90   21.651 < 2e-16 ***
bmi           322.36     27.42   11.757 < 2e-16 ***
children      474.41     137.86    3.441 0.000597 ***
is_male       -128.64     333.36   -0.386 0.699641
is_smoker     23823.39    412.52   57.750 < 2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 6070 on 1332 degrees of freedom
Multiple R-squared:  0.7497,    Adjusted R-squared:  0.7488
F-statistic: 798 on 5 and 1332 DF,  p-value: < 2.2e-16
```

VIF of Second Model

	age	bmi	children	is_male	is_smoker
	1.015129	1.014578	1.002242	1.008878	1.006457

ANOVA

Analysis of Variance Table

Model 1: charges ~ age + bmi + children

Model 2: charges ~ age + bmi + children + is_male + is_smoker

	Res.Df	RSS	Df	Sum of Sq	F	Pr(>F)
1	1334	1.7253e+11				
2	1332	4.9073e+10	2	1.2345e+11	1675.5	< 2.2e-16 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1