

```
> fitMod <- lm(Y ~ Xc + Zc + Xc:Zc) #Model interacts IV & moderator
> summary(fitMod)
```

Call:

```
lm(formula = Y ~ Xc + Zc + Xc : Zc)
```

Residuals:

	Min	1Q	Median	3Q	Max
	-21.466	-8.972	-0.233	6.180	38.051

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	48.54443	1.17286	41.390	< 2e-16	***
Xc	5.20812	0.34870	14.936	< 2e-16	***
Zc	1.10443	0.15537	7.108	2.08e-10	***
Xc:Zc	0.23384	0.04134	5.656	1.59e-07	***

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

Residual standard error: 11.65 on 96 degrees of freedom

Multiple R-squared: 0.7661, Adjusted R-squared: 0.7587

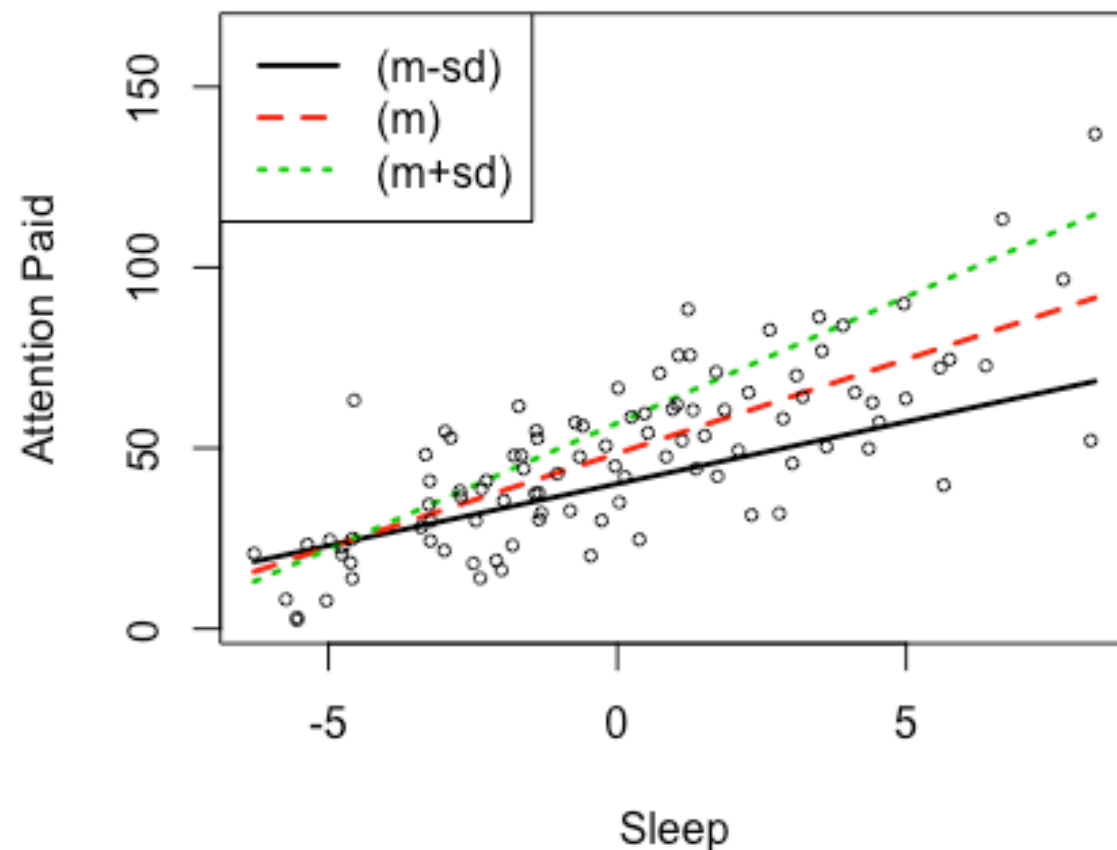
F-statistic: 104.8 on 3 and 96 DF, p-value: < 2.2e-16

We can use the `plotSlopes` function in the `rockchalk` package to plot the slopes (1 SD above and 1 SD below the mean) of the moderating effect.

The plot below shows that those who drank less coffee (the black line) paid more attention with the more sleep they got last night, but paid less attention overall than average (the red line).

Those who drank more coffee (the green line) paid more attention when they slept more as well and paid more attention than average.

The difference in the slopes for those who drank more or less coffee shows that coffee consumption moderates the relationship between hours of sleep and attention paid.



```
ps <- plotSlopes(fitMod, plotx = "Xc", modx = "Zc", xlab = "Sleep", ylab = "Attention Paid", modxVals = "std.dev")
```