Generating Dummy Variables

You can generate a new variable within a dataframe by using the following command:

```
x$newvar<-......
```

Here, 'x' is the dataframe in which a new variable will be created, and 'newvar' is the name of the new variable. The new variable will have the same length as 'x'. For example, the following command creates a new variable, the same length of x, containing only 3’s.

```
x$newvar<-3
```

Or, the new variable could be a transformation of an old variable, such as educ from the wage dataset.

```
x$newvar<-x$educ^2
```

Generating Dummy Variables

Here, we create a dichotomous variable called “smoke”, taking on a value of 1 if the mother smokes:

```
x$smoke<-ifelse(x$cigs>0,1,0)
```

'x$smoke' is the name of the new variable within the dataset x

'ifelse(x$cigs>0,1,0)' is a function. The first element is a condition that either is true or false. If true, ifelse() assigns whatever is in the second element (in this case a 1). If false, it assigns the third element (in this case a 0)

Generating Standardized Variables

A standardized variable is one that has a mean of zero and standard deviation of one. We accomplish this transformation by first subtracting the mean of a variable from each observation, and then dividing by the standard deviation over all observations. Suppose that the variable is called ‘z’ within the dataset ‘x’. To standardize ‘z’, run the following:

```
x$stdz<-(x$z-mean(x$z,na.rm=TRUE))/sqrt(var(x$z,na.rm=TRUE))
```

Here, the standardized variable is called ‘stdz’.