Example 8-1

September 11, 2020

[ ]:
```
# install the following packages and library
install.packages("pder")
install.packages("plm")

library("plm")
```

[3]:
```
##---------------------------------Block 1--------------------------------

#### Example 8-1 ####

## ------------------------------------------------------------------------
data("Dialysis", package = "pder")

# Swamy(1970) random coefficient model
rndcoef <- pvcm(log(diffusion / (1 - diffusion)) ~ trend + trend:regulation,
                Dialysis, model="random")
summary(rndcoef)
```

```
Oneway (individual) effect Random coefficients model

Call:
pvcm(formula = log(diffusion/(1 - diffusion)) ~ trend + trend:regulation,
    data = Dialysis, model = "random")

Balanced Panel: n = 50, T = 14, N = 700

Residuals:
    Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
-2.86593 -0.48471  0.09069  0.13235  0.72881  2.99245

Estimated mean of the coefficients:
                  Estimate Std. Error  z-value Pr(>|z|)
(Intercept)      -1.426565   0.128430 -11.1078  < 2e-16 ***
trend             0.341609   0.025977  13.1502  < 2e-16 ***
trend:regulation -0.058059   0.023738  -2.4459  0.01445 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Estimated variance of the coefficients:
                 (Intercept)     trend trend:regulation
(Intercept)         0.661726 -0.073584         0.039799
trend              -0.073584  0.028786        -0.020463
trend:regulation    0.039799 -0.020463         0.017941

Total Sum of Squares: 33945
Residual Sum of Squares: 641.79
Multiple R-Squared: 0.98109
Chisq: 327.301 on 2 DF, p-value: < 2.22e-16
```

[4]:
```
## ------------------------------------------------------------------------

# mean values of the 3 coefficients and their standard deviations
cbind(coef(rndcoef), stdev = sqrt(diag(rndcoef$Delta)))
```

		stdev
(Intercept)	-1.42656482	0.8134652
trend	0.34160876	0.1696650
trend:regulation	-0.05805934	0.1339429