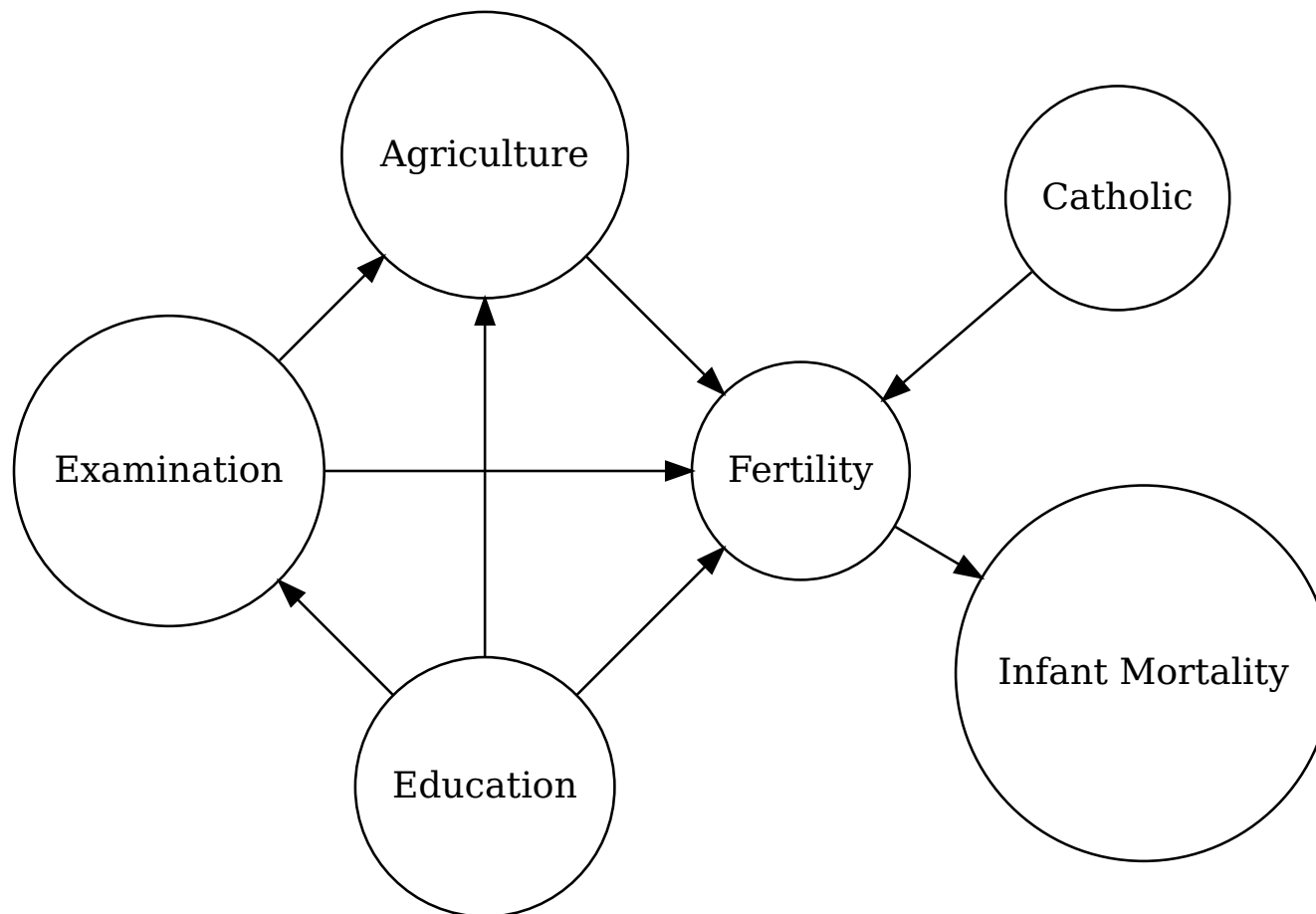


# Tutorial / Lösungshinweise (RStudio)

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## Aufgabe: SWISS

### Analysemodell

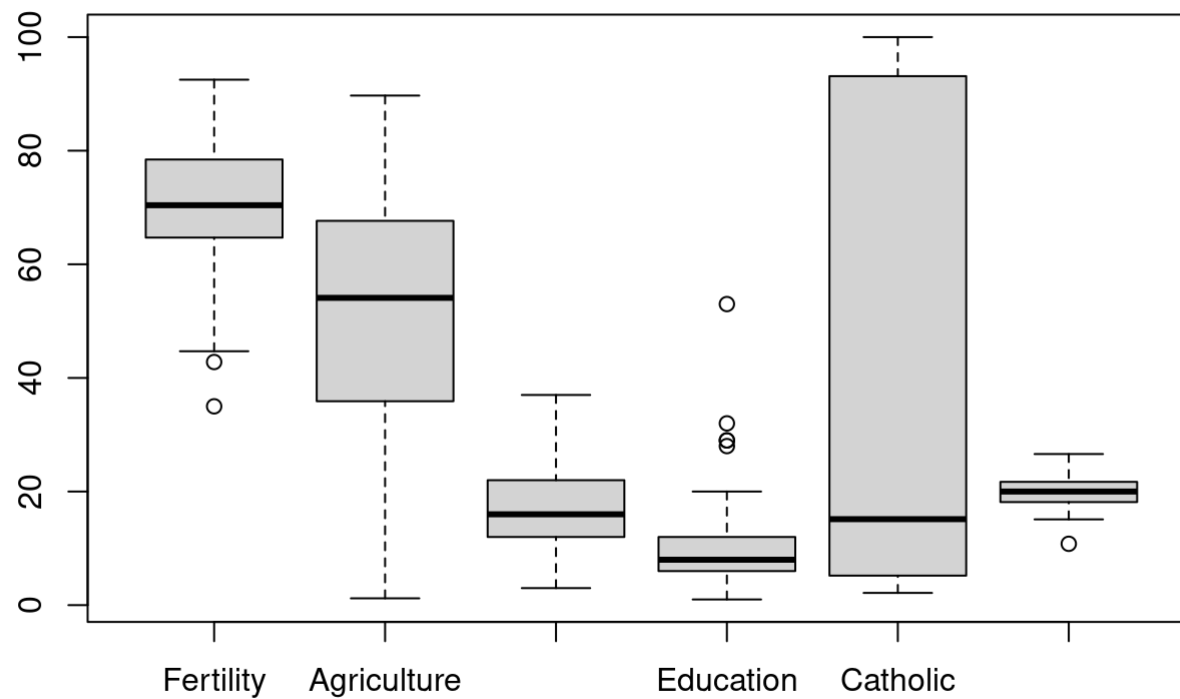


# Univariate Analyse

```
summary(swiss)
```

```
##      Fertility      Agriculture      Examination      Education
## Min.      :35.00    Min.       : 1.20    Min.       : 3.00    Min.       : 1.00
## 1st Qu.:64.70    1st Qu.:35.90    1st Qu.:12.00    1st Qu.: 6.00
## Median :70.40    Median :54.10    Median :16.00    Median : 8.00
## Mean   :70.14    Mean   :50.66    Mean   :16.49    Mean   :10.98
## 3rd Qu.:78.45    3rd Qu.:67.65    3rd Qu.:22.00    3rd Qu.:12.00
## Max.   :92.50    Max.   :89.70    Max.   :37.00    Max.   :53.00
##      Catholic      Infant.Mortality
## Min.      : 2.150    Min.      :10.80
## 1st Qu.: 5.195    1st Qu.:18.15
## Median :15.140    Median :20.00
## Mean   :41.144    Mean   :19.94
## 3rd Qu.:93.125    3rd Qu.:21.70
## Max.   :100.000    Max.     :26.60
```

```
boxplot(swiss)
```



## Bivariate Analyse

```
cor(swiss)
```

```
##          Fertility Agriculture Examination Education Catholic
## Fertility      1.0000000  0.35307918 -0.6458827 -0.66378886  0.4636847
## Agriculture    0.3530792  1.00000000 -0.6865422 -0.63952252  0.4010951
## Examination   -0.6458827 -0.68654221  1.0000000  0.69841530 -0.5727418
## Education     -0.6637889 -0.63952252  0.6984153  1.00000000 -0.1538589
## Catholic      0.4636847  0.40109505 -0.5727418 -0.15385892  1.0000000
## Infant.Mortality 0.4165560 -0.06085861 -0.1140216 -0.09932185  0.1754959
##          Infant.Mortality
## Fertility      0.41655603
## Agriculture    -0.06085861
## Examination    -0.11402160
## Education      -0.09932185
## Catholic       0.17549591
## Infant.Mortality 1.00000000
```

## Multivariate Analyse

```
summary(lm(Fertility~., data=swiss))
```

```
##
## Call:
## lm(formula = Fertility ~ ., data = swiss)
##
## Residuals:
```

	Min	1Q	Median	3Q	Max
	-15.2743	-5.2617	0.5032	4.1198	15.3213

```
##
## Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	66.91518	10.70604	6.250	1.91e-07	***
Agriculture	-0.17211	0.07030	-2.448	0.01873	*
Examination	-0.25801	0.25388	-1.016	0.31546	
Education	-0.87094	0.18303	-4.758	2.43e-05	***
Catholic	0.10412	0.03526	2.953	0.00519	**
Infant.Mortality	1.07705	0.38172	2.822	0.00734	**

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.165 on 41 degrees of freedom
## Multiple R-squared:  0.7067, Adjusted R-squared:  0.671
## F-statistic: 19.76 on 5 and 41 DF, p-value: 5.594e-10
```