Quantile regression

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```
# Fit conditional quantile regression
fit_conditional <- rq(hwactual ~ sex, data = eulfs_small, tau = 0.8) #add robustness ?
#I took the variable sex as an exemple, just to see
# Values seem all meaningless for tau = 0.9 ...

# Summary of the model with additional information
summary_conditional <- summary.rq(fit_conditional)
```

```
## Warning in summary.rq(fit_conditional): 50593 non-positive fis
```

```
# Print summary including confidence intervals and p-values
print(summary_conditional, digits = 4)
```

```
##
## Call: rq(formula = hwactual ~ sex, tau = 0.8, data = eulfs_small)
##
## tau: [1] 0.8
##
## Coefficients:
##             Value         Std. Error    t value       Pr(>|t|)
## (Intercept)  5.600000e+01  3.479739e+30  0.000000e+00  1.000000e+00
## sex         -8.000000e+00  3.479739e+30  0.000000e+00  1.000000e+00
```

```
# no IC, F stat, R-squared ... don't know yet how to make them appear
```

```
# Fit conditional quantile regression
fit_conditional <- rq(hwactual ~ sex, data = eulfs_small, tau = 0.2) #add robustness ?
#I took the variable sex as an exemple, just to see
# Values seem all meaningless for tau = 0.9 ...

# Summary of the model with additional information
summary_conditional <- summary.rq(fit_conditional)

# Print summary including confidence intervals and p-values
print(summary_conditional, digits = 4)
```

```
##
## Call: rq(formula = hwactual ~ sex, tau = 0.2, data = eulfs_small)
##
## tau: [1] 0.2
##
## Coefficients:
##             Value    Std. Error t value  Pr(>|t|)
## (Intercept)  46.0000   0.4058   113.3619   0.0000
## sex         -14.0000   0.3280   -42.6821   0.0000
```

```r
# no IC, F stat, R-squared ... don't know yet how to make them appear
```

```
## [1] "\ndata_filtered <- eulfs_small[!is.na(eulfs_small$hwactual), ]\n\n\n# Define a sequence of tau v
```

```r
# For a single value for tau
tau <- 0.3

# List to store the models
reg_models <- list()

# Loop to fit the models for each year
for (year in c(1998, 2013)) {
  # Filter data for the specific year
  data_year <- subset(eulfs_small, year == year)

  # Fit the models
  reg_model <- rq(hwactual ~ sex, data = data_year, tau = tau)

  # Store the model in the list
  reg_models[[as.character(year)]] <- reg_model
}

# Print the results for each year
print(reg_models, digits = 4)
```

```
## $`1998`
## Call:
## rq(formula = hwactual ~ sex, tau = tau, data = data_year)
##
## Coefficients:
## (Intercept)         sex
##          51         -13
##
## Degrees of freedom: 109479 total; 109477 residual
##
## $`2013`
## Call:
## rq(formula = hwactual ~ sex, tau = tau, data = data_year)
##
## Coefficients:
## (Intercept)         sex
##          51         -13
##
## Degrees of freedom: 109479 total; 109477 residual
```