

Quantile regression

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```
# Fit conditional quantile regression
rq_model <- rq(hwactual ~ sex, data = eulfs_small, tau = 0.8)
residuals <- residuals(rq_model)
summary(rq_model)

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

##
## 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

# Export des résultats vers LaTeX
latex_table <- stargazer(rq_model, title = "Régression Quantile Conditionnelle",
                        align = TRUE, type = "latex", header = FALSE)

##
## \begin{table}[!htbp] \centering
##   \caption{Régression Quantile Conditionnelle}
##   \label{}
##   \begin{tabular}{@{\extracolsep{5pt}}lD{.}{.}{-3} }
##     \ll[-1.8ex]\hline
##     \hline \ll[-1.8ex]
##     & \multicolumn{1}{c}{\textit{Dependent variable:}} \ll
##     \cline{2-2}
##     \ll[-1.8ex] & \multicolumn{1}{c}{hwactual} \ll
##     \hline \ll[-1.8ex]
##     sex & -8.000 \ll
##     & (3,479,738,639,867,523,257,490,997,248,000.000) \ll
##     & \ll
##     Constant & 56.000 \ll
##     & (3,479,738,639,867,523,257,490,997,248,000.000) \ll
##     & \ll
##     \hline \ll[-1.8ex]
##     Observations & \multicolumn{1}{c}{109,479} \ll
##     \hline
##     \hline \ll[-1.8ex]
##     \textit{Note:} & \multicolumn{1}{r}{\textit{\$^{*}}$p$<$0.1; \$^{**}$p$<$0.05; \$^{***}$p$<$0.01} \ll
##     \end{tabular}
```

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## \end{table}
cat(latex_table, file = "regression_table.tex")

#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)
# 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# Define a sequence of tau v
# 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