

# Arbeidskrav-2

“[8]”

## Arbeidskrav 2

```
library(tidyverse)
```

```
-- Attaching packages ----- tidyverse 1.3.2 --
v ggplot2 3.4.0    v purrr   0.3.4
v tibble  3.1.8    v dplyr  1.0.9
v tidyr   1.2.0    v stringr 1.4.0
v readr   2.1.2    v forcats 0.5.1
-- Conflicts ----- tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
```

```
library(rvest)
```

Attaching package: 'rvest'

The following object is masked from 'package:readr':

guess\_encoding

```
library(janitor)
```

Attaching package: 'janitor'

The following objects are masked from 'package:stats':

```
chisq.test, fisher.test
```

```
library(lubridate)
```

```
Attaching package: 'lubridate'
```

```
The following objects are masked from 'package:base':
```

```
date, intersect, setdiff, union
```

```
library(quantmod)
```

```
Loading required package: xts
```

```
Loading required package: zoo
```

```
Attaching package: 'zoo'
```

```
The following objects are masked from 'package:base':
```

```
as.Date, as.Date.numeric
```

```
##### WARNING #####
# We noticed you have dplyr installed. The dplyr lag() function breaks how      #
# base R's lag() function is supposed to work, which breaks lag(my_xts).      #
#                                                                              #
# Calls to lag(my_xts) that you enter or source() into this session won't    #
# work correctly.                                                            #
#                                                                              #
# All package code is unaffected because it is protected by the R namespace  #
# mechanism.                                                                  #
#                                                                              #
# Set `options(xts.warn_dplyr_breaks_lag = FALSE)` to suppress this warning.  #
#                                                                              #
# You can use stats::lag() to make sure you're not using dplyr::lag(), or you  #
# can add conflictRules('dplyr', exclude = 'lag') to your .Rprofile to stop  #
# dplyr from breaking base R's lag() function.                              #
##### WARNING #####
```

Attaching package: 'xts'

The following objects are masked from 'package:dplyr':

first, last

Loading required package: TTR

Registered S3 method overwritten by 'quantmod':

```
method      from
as.zoo.data.frame zoo
```

```
url <- "https://www.motor.no/aktuelt/motors-store-vintertest-av-rekkevidde-pa-elbiler/2171
```

```
url <- url %>%
  read_html() %>%
  html_nodes("table") %>%
  html_table() %>% .[[1]] %>% head(34)
names(url) <- c("Modell (temp. varierte fra 0° til -10°)", "WLTP-tall", "STOPP", "Avvik")
```

```
table <- url %>%
  select(c("Modell (temp. varierte fra 0° til -10°)", "WLTP-tall", "STOPP"))
```

```
table$STOPP <- gsub("x", "", table$STOPP)
```

```
table$STOPP <- gsub("STOPP", "", table$STOPP)
table$`WLTP-tall` <- gsub("WLTP-tall", "", table$`WLTP-tall`)
```

```
table <- table %>%
  separate('WLTP-tall', into=c("WLTP-km", "WLTP-kwh"), sep="/") %>%
  separate("WLTP-km", into = "WLTP-km", sep=" ") %>%
  separate("STOPP", into=c("STOPP-km"), sep=" ")
```

Warning: Expected 2 pieces. Missing pieces filled with `NA` in 1 rows [1].

Warning: Expected 1 pieces. Additional pieces discarded in 33 rows [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, ...].

Warning: Expected 1 pieces. Additional pieces discarded in 31 rows [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, ...].

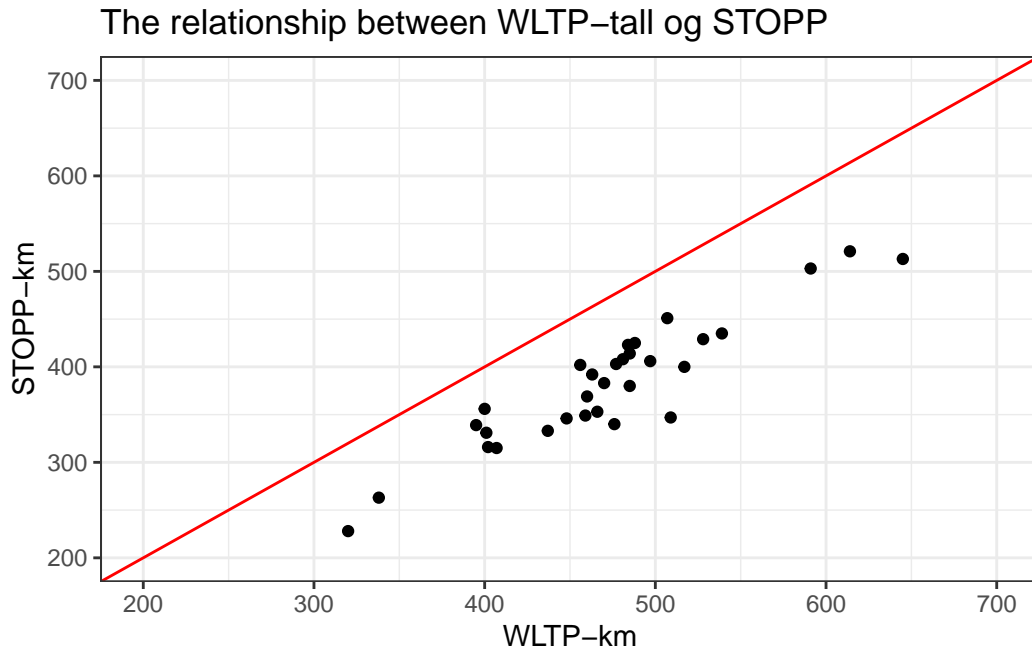
```

table$`STOPP-km` <- as.numeric(table$`STOPP-km`)
table$`WLTP-km` <- as.numeric(table$`WLTP-km`)

table %>%
  ggplot(aes(x=`WLTP-km`, y=`STOPP-km`))+
  geom_point() +
  geom_abline(slope=1, col="red")+
  scale_x_continuous(limits = c(200,700))+
  scale_y_continuous(limits = c(200,700))+
  ggtitle("The relationship between WLTP-tall og STOPP")+
  theme_bw()

```

Warning: Removed 3 rows containing missing values (`geom\_point()`).



#Kode hentet fra: <https://statisticsglobe.com/add-diagonal-line-plot-r>

By looking at the graph, we can see that there are big differences between how the cars were supposed to go, and how long the car actually ended up going. We can see that most of the cars stopped earlier than the expected length. We see this by looking at the red line (expected mileage).

```
lm(`STOPP-km` ~ `WLTP-km`, data = table)
```

Call:

```
lm(formula = `STOPP-km` ~ `WLTP-km`, data = table)
```

Coefficients:

(Intercept)	`WLTP-km`
-26.6450	0.8671

The numbers tell something about the deviations.

```
lm(`STOPP-km` ~ `WLTP-km`, data = table) + geom_smooth(method = lm)
```

NULL