HomeOffice\_Main\_Analysis

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# Install packages

library(tidyverse)

# Source R scripts

r\_scripts <- list.files("R/", full.names = TRUE)  
walk(r\_scripts, source)

# Importing data

processed <- read\_tsv("Data/Main/Processed/HomeOffice\_Main\_Processed\_data.tsv")

# Descriptives

## Number of respondents

There are 704 individual responses used for the analysis.

## Median time of responding to the survey

processed %>%   
 mutate(duration\_in\_seconds = as.integer(duration\_in\_seconds)) %>%   
 summarise(median\_resp = median(duration\_in\_seconds) / 60)

## # A tibble: 1 x 1  
## median\_resp  
## <dbl>  
## 1 5.09

# Background information

## Data preprocessing

Variables that we will use to create the subgroups for the background information.

subvars <- c("position", "area\_of\_research", "wokrplace\_type", "data\_coll\_remote", "gender", "age", "edu\_duties", "team\_work", "partner\_work", "living\_sit", "homeschool", "childcare\_help", "work\_home\_dist", "office\_setup", "number\_of\_children")

We transform all the background information questions to character and replace NAs with “not applicable”. We will use these as subgroup labels only in the following.

processed <-  
 processed %>%   
 mutate\_at(all\_of(subvars),  
 as.character) %>%   
 mutate\_at(all\_of(subvars),  
 replace\_na, "not applicable")

Calculating the counts and proportions of each subgroup. *note: There is a position NA subgroup which was not an answer option in the survey but based on one respondents comment we dropped his answer to this question.*

background\_inf <-  
 tibble(subvars = subvars) %>%   
 mutate(subgroup\_desc = purrr::map(subvars, subgroup\_count)) %>%   
 select(subvars, subgroup\_desc) %>%   
 unnest(subgroup\_desc) %>%   
 select(-N) %>%   
 mutate(subvars = case\_when(subvars == "position" ~ "Academic position",  
 subvars == "area\_of\_research" ~ "Area of research",  
 subvars == "wokrplace\_type" ~ "Workplace type",  
 subvars == "data\_coll\_remote" ~ "Data collection remotely",  
 subvars == "gender" ~ "Gender",  
 subvars == "age" ~ "Age",  
 subvars == "edu\_duties" ~ "Educational duties",  
 subvars == "team\_work" ~ "Team work",  
 subvars == "partner\_work" ~ "Partner working",  
 subvars == "living\_sit" ~ "Living situation",  
 subvars == "homeschool" ~ "Homeschooling",  
 subvars == "childcare\_help" ~ "Help with childcare",  
 subvars == "work\_home\_dist" ~ "Work-home distance",  
 subvars == "office\_setup" ~ "Home office setup",  
 subvars == "number\_of\_children" ~ "Number of children")) %>%   
 rename(`Background information question` = subvars,  
 Subgroups = levels,  
 `Number of responses` = n,  
 `Proportion of the subgroup` = prop)

papaja::apa\_table(  
 background\_inf,  
 caption = "A Full Summary of All Background Information",  
 escape = TRUE  
)

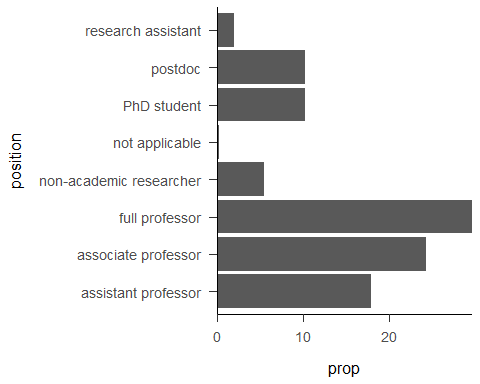
(#tab:unnamed-chunk-8)

*A Full Summary of All Background Information*

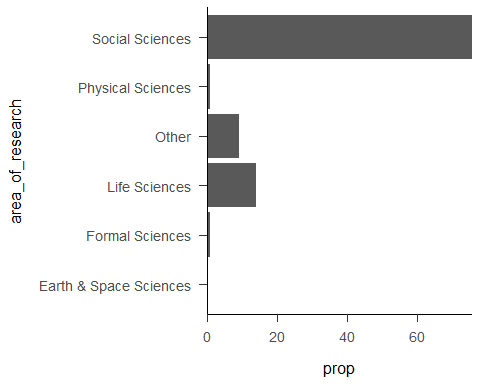
|  |  |  |  |
| --- | --- | --- | --- |
| Background information question | Subgroups | Number of responses | Proportion of the subgroup |
| Academic position | full professor | 209 | 29.69 |
| Academic position | associate professor | 172 | 24.43 |
| Academic position | assistant professor | 126 | 17.90 |
| Academic position | PhD student | 72 | 10.23 |
| Academic position | postdoc | 72 | 10.23 |
| Academic position | non-academic researcher | 38 | 5.40 |
| Academic position | research assistant | 14 | 1.99 |
| Academic position | not applicable | 1 | 0.14 |
| Area of research | Social Sciences | 531 | 75.43 |
| Area of research | Life Sciences | 98 | 13.92 |
| Area of research | Other | 63 | 8.95 |
| Area of research | Formal Sciences | 5 | 0.71 |
| Area of research | Physical Sciences | 5 | 0.71 |
| Area of research | Earth & Space Sciences | 2 | 0.28 |
| Workplace type | Research and educational institute | 612 | 86.93 |
| Workplace type | Purely research institute | 57 | 8.10 |
| Workplace type | None of them | 21 | 2.98 |
| Workplace type | Purely educational institute | 14 | 1.99 |
| Data collection remotely | Yes (including if someone else does it for me) | 513 | 72.87 |
| Data collection remotely | No | 170 | 24.15 |
| Data collection remotely | not applicable | 21 | 2.98 |
| Gender | Female | 356 | 50.57 |
| Gender | Male | 338 | 48.01 |
| Gender | Prefer not to say | 9 | 1.28 |
| Gender | Other | 1 | 0.14 |
| Age | 35 - 44 | 231 | 32.81 |
| Age | 45 - 54 | 169 | 24.01 |
| Age | 25 - 34 | 150 | 21.31 |
| Age | 55 - 64 | 93 | 13.21 |
| Age | 65 - 74 | 48 | 6.82 |
| Age | Under 24 | 7 | 0.99 |
| Age | 75 - 84 | 6 | 0.85 |
| Educational duties | Yes | 566 | 80.40 |
| Educational duties | No | 138 | 19.60 |
| Team work | Yes | 373 | 52.98 |
| Team work | No | 331 | 47.02 |
| Partner working | Yes | 446 | 63.35 |
| Partner working | not applicable | 137 | 19.46 |
| Partner working | No | 121 | 17.19 |
| Living situation | Living with partner and non-adult child(ren) | 281 | 39.91 |
| Living situation | Living only with partner | 242 | 34.38 |
| Living situation | Living alone | 92 | 13.07 |
| Living situation | Other | 33 | 4.69 |
| Living situation | Living with parents or other adult family members | 25 | 3.55 |
| Living situation | Single-parent with non-adult child(ren) | 23 | 3.27 |
| Living situation | Living with non-family others | 8 | 1.14 |
| Homeschooling | No | 465 | 66.05 |
| Homeschooling | Yes | 239 | 33.95 |
| Help with childcare | not applicable | 353 | 50.14 |
| Help with childcare | No | 227 | 32.24 |
| Help with childcare | Yes | 124 | 17.61 |
| Work-home distance | <30 min | 419 | 59.52 |
| Work-home distance | 30-60 min | 196 | 27.84 |
| Work-home distance | >60 min | 89 | 12.64 |
| Home office setup | Fully equipped | 444 | 63.07 |
| Home office setup | Underequipped | 260 | 36.93 |
| Number of children | 0 | 358 | 50.85 |
| Number of children | 2 | 163 | 23.15 |
| Number of children | 1 | 128 | 18.18 |
| Number of children | 3 | 41 | 5.82 |
| Number of children | 4 | 7 | 0.99 |
| Number of children | 5 | 3 | 0.43 |
| Number of children | 12 | 1 | 0.14 |
| Number of children | 22 | 1 | 0.14 |
| Number of children | 7 | 1 | 0.14 |
| Number of children | 8 | 1 | 0.14 |

map(subvars, ~ apa\_barplot(processed, .x))

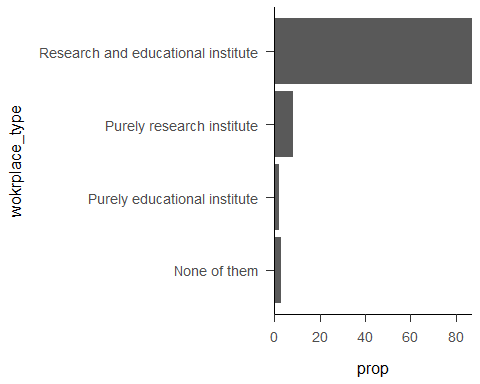
## [[1]]



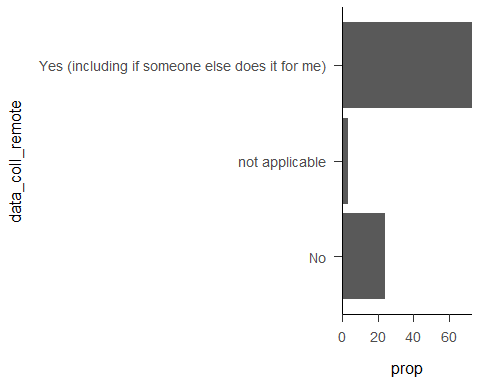
##   
## [[2]]



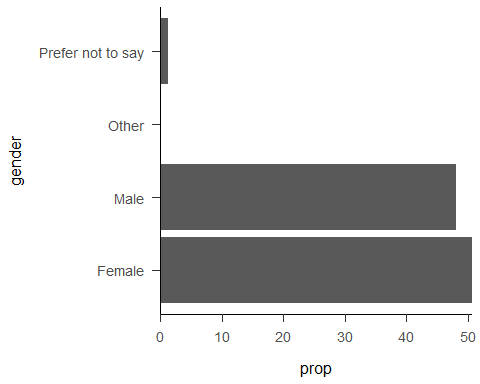
##   
## [[3]]



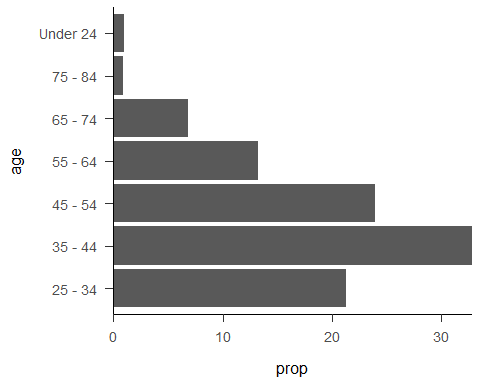
##   
## [[4]]



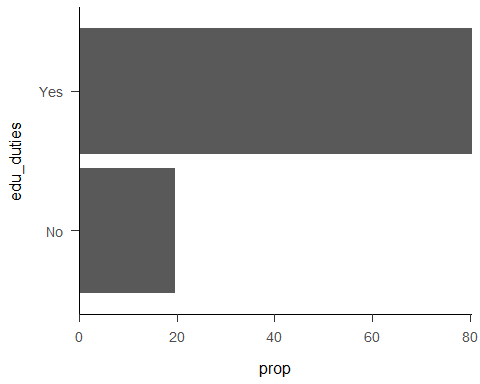
##   
## [[5]]



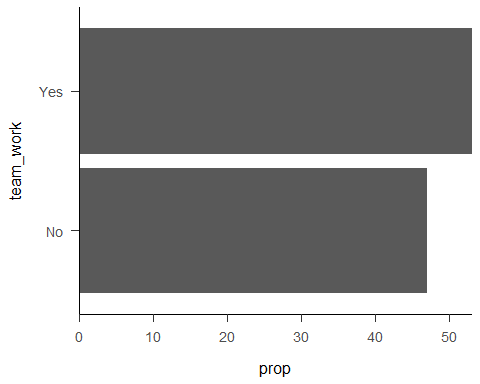
##   
## [[6]]



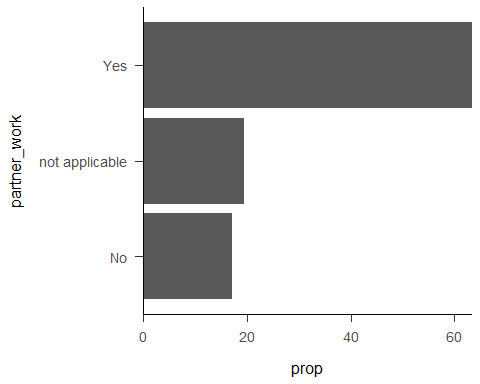
##   
## [[7]]



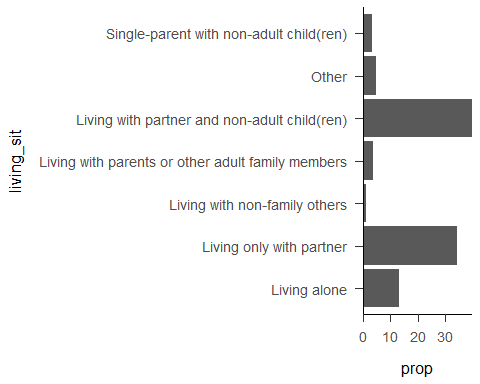
##   
## [[8]]



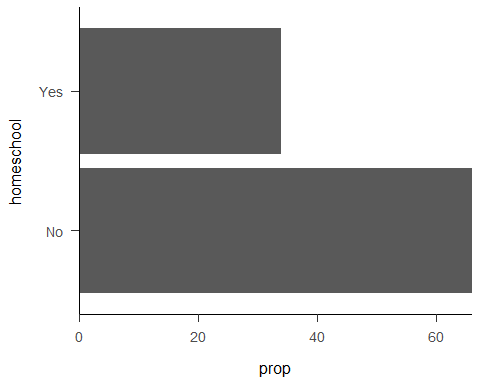
##   
## [[9]]



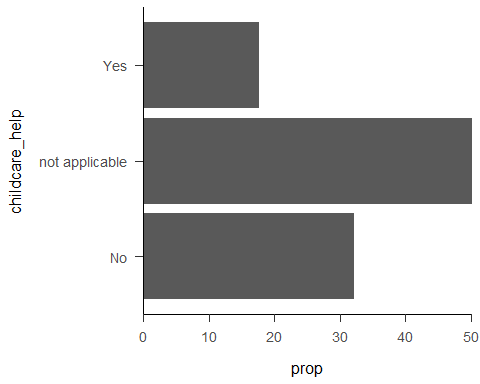
##   
## [[10]]



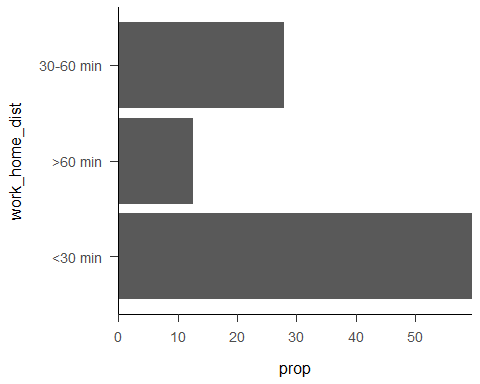
##   
## [[11]]



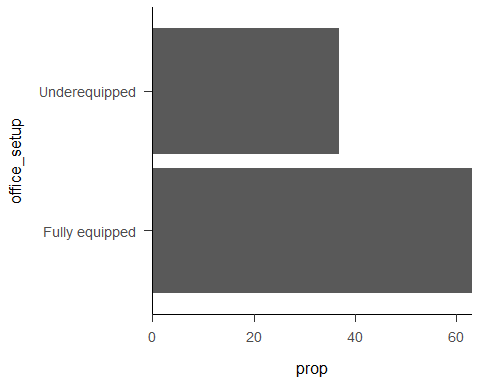
##   
## [[12]]



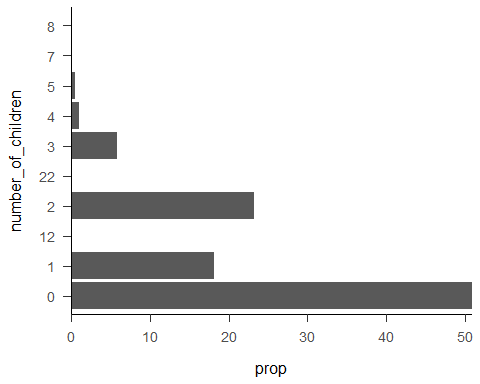
##   
## [[13]]



##   
## [[14]]



##   
## [[15]]



# Percentage of working more from home during the pandemic

percent\_by\_group(processed, working\_home\_time)

## # A tibble: 2 x 4  
## working\_home\_time n N prop  
## <chr> <int> <int> <dbl>  
## 1 No 42 704 5.97  
## 2 Yes 662 704 94.0

662 researchers worked more from home during the pandemic lockdown.

# Efficiency of remote working

## During the lockdown

processed %>%   
 distinct(now\_before\_eff)

## # A tibble: 4 x 1  
## now\_before\_eff   
## <chr>   
## 1 less efficient   
## 2 more efficient   
## 3 similarly efficient  
## 4 <NA>

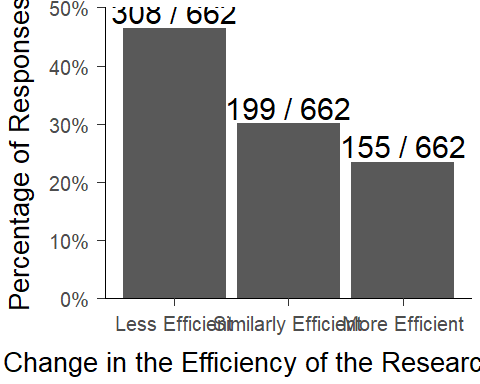
now\_before\_eff\_data <-  
 processed %>%   
 filter(working\_home\_time == "Yes")  
  
now\_before\_eff\_desc <-  
 now\_before\_eff\_data %>%   
 percent\_by\_group(now\_before\_eff)  
  
now\_before\_eff\_desc

## # A tibble: 3 x 4  
## now\_before\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 308 662 46.5  
## 2 similarly efficient 199 662 30.1  
## 3 more efficient 155 662 23.4

The number of trials where the efficiency rating is missing is 42. It is because this question was not shown to those who said that they are not working more from home.

46.53% of the surveyed scientists who worked more from home during the coronavirus lockdown found that due to working more from home their research became, in general, less efficient, 23.41% found it more efficient, and 30.06% found no difference compared to working before the lockdown. (only from those working from home).

y\_max\_during <- round\_any(max(now\_before\_eff\_desc$prop), 10, f = ceiling)  
  
now\_before\_eff\_plot <-   
 now\_before\_eff\_desc %>%   
 mutate(label = glue::glue("{n} / {N}"),  
 now\_before\_eff = stringr::str\_to\_title(now\_before\_eff),  
 now\_before\_eff = forcats::fct\_relevel(now\_before\_eff, c("Less Efficient", "Similarly Efficient", "More Efficient"))) %>%   
 ggplot() +  
 aes(x = now\_before\_eff,  
 y = prop) +  
 geom\_bar(stat = "identity") +  
 geom\_text(aes(label = label), vjust = -0.2, size = 8) +  
 scale\_y\_continuous(expand = c(0, 0),  
 limits = c(0, y\_max\_during),  
 label = scales::label\_percent(scale = 1)) +  
 labs(x = "Change in the Efficiency of the Research Work",  
 y = "Percentage of Responses") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15))  
  
now\_before\_eff\_plot



## After the lockdown

processed %>%   
 distinct(now\_later\_eff)

## # A tibble: 4 x 1  
## now\_later\_eff   
## <chr>   
## 1 similarly efficient  
## 2 more efficient   
## 3 less efficient   
## 4 <NA>

now\_later\_eff\_data <-  
 processed %>%   
 filter(prior\_home\_prop\_1 != 100)  
  
now\_later\_eff\_desc <-  
 now\_later\_eff\_data %>%  
 percent\_by\_group(now\_later\_eff)  
  
now\_later\_eff\_desc

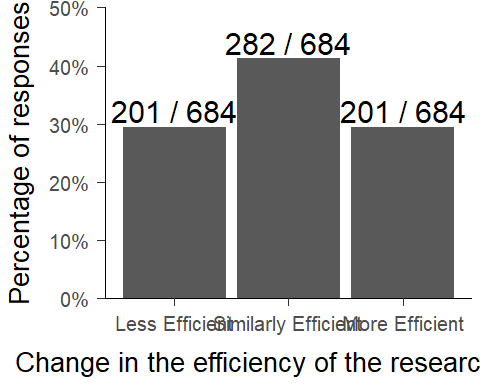
## # A tibble: 3 x 4  
## now\_later\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 201 684 29.4  
## 2 similarly efficient 282 684 41.2  
## 3 more efficient 201 684 29.4

The number of trials where the efficiency rating is missing is 1. It is because the respondent did not understand the question as she stated in the comments. However, she said that she used to work 100% before the lockdown from home, therefore her rating will not be included in the analysis anyway.

The number of respondents whose response was excluded because they used to work 100% from home before the lockdown: 20

29.39% of the surveyed scientists assume that working more from home after the coronavirus lockdown could make their research, in general, less efficient, 29.39% found it more efficient, and 41.23% found no difference compared to the time before the lockdown. (excluding 100% home workers).

y\_max\_after <- round\_any(max(now\_later\_eff\_desc$prop), 10, f = ceiling)  
  
now\_later\_eff\_plot <-   
 now\_later\_eff\_desc %>%  
 mutate(label = glue::glue("{n} / {N}"),  
 now\_later\_eff = stringr::str\_to\_title(now\_later\_eff),  
 now\_later\_eff = forcats::fct\_relevel(now\_later\_eff, c("Less Efficient", "Similarly Efficient", "More Efficient"))) %>%   
 ggplot() +  
 aes(x = now\_later\_eff,  
 y = prop) +  
 geom\_bar(stat = "identity") +  
 geom\_text(aes(label = label), vjust = -0.2, size = 8) +  
 scale\_y\_continuous(expand = c(0, 0),  
 limits = c(0, y\_max\_after),  
 label = scales::label\_percent(scale = 1)) +  
 labs(x = "Change in the efficiency of the research work",  
 y = "Percentage of responses") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15))  
  
# Save for the paper  
ggsave("Figures/Fig1.tiff", device = "tiff", plot = now\_later\_eff\_plot, dpi = 300, width = 208, height = 118, units = "mm")  
  
# Save for the manuscript  
ggsave("Figures/Fig1.png", device = "png", plot = now\_later\_eff\_plot, dpi = 300, width = 208, height = 118, units = "mm")  
  
now\_later\_eff\_plot



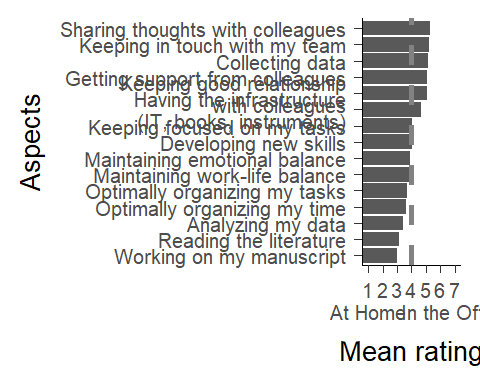
## Investigating aspects of research

We calculate the means and SDs of each aspects ratings. Aspects with higher rating than 4 indicates that it is better to do the task from the lab. Ratings with lower mean rating than 4 means that it is better to do the given action from home.

*note: Based on one comment we dropped the aspect ratings of one respondent during data processing.*

aspects <-   
 processed %>%  
 filter\_at(  
 vars(contains("home\_office\_aspect")),  
 all\_vars(!is.na(.))) %>%   
 select(participant\_id, contains("home\_office\_aspect")) %>%  
 gather(key = "aspect", value = "rating", -participant\_id) %>%   
 mutate(aspect = case\_when(aspect == "home\_office\_aspect\_1" ~ "Optimally organizing my time",  
 aspect == "home\_office\_aspect\_2" ~ "Optimally organizing my tasks",  
 aspect == "home\_office\_aspect\_3" ~ "Keeping focused on my tasks",  
 aspect == "home\_office\_aspect\_4" ~ "Keeping in touch with my team",  
 aspect == "home\_office\_aspect\_5" ~ "Sharing thoughts with colleagues",  
 aspect == "home\_office\_aspect\_6" ~ "Getting support from colleagues",  
 aspect == "home\_office\_aspect\_7" ~ "Working on my manuscript",  
 aspect == "home\_office\_aspect\_8" ~ "Analyzing my data",  
 aspect == "home\_office\_aspect\_9" ~ "Reading the literature",  
 aspect == "home\_office\_aspect\_10" ~ "Collecting data",  
 aspect == "home\_office\_aspect\_11" ~ "Having the infrastructure\n(IT, books, instruments)",  
 aspect == "home\_office\_aspect\_12" ~ "Maintaining emotional balance",  
 aspect == "home\_office\_aspect\_13" ~ "Maintaining work-life balance",  
 aspect == "home\_office\_aspect\_14" ~ "Keeping good relationship\nwith colleagues",  
 aspect == "home\_office\_aspect\_15" ~ "Developing new skills")) %>%   
 group\_by(aspect) %>%   
 summarise(mean = round(mean(rating, na.rm = TRUE), 2),  
 sd = round(sd(rating, na.rm = TRUE), 2)) %>%   
 mutate(better\_home = case\_when(mean > 4 ~ 0L,  
 mean < 4 ~ 1L,  
 mean == 4 ~ NA\_integer\_)) %>%   
 arrange(better\_home, mean)

aspects\_plot <-   
 aspects %>%  
 ggplot() +  
 aes(x = fct\_reorder(aspect, mean),  
 y = mean) +  
 geom\_bar(stat = "identity") +  
 scale\_y\_continuous(  
 expand = c(0, 0.4),  
 breaks = c(1, 2, 3, 4, 5, 6, 7),  
 labels = c("1\nAt Home", "2", "3", "4", "5", "6", "7\nIn the Office")) +  
 coord\_flip(ylim = c(1, 7)) +  
 geom\_hline(yintercept = 4, linetype = "dashed", color = "#828282", size = 2) +  
 # geom\_text(aes(label = as.character(mean)), size = 8, hjust = - 0.3) +  
 labs(x = "Aspects",  
 y = "Mean rating") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15),  
 plot.margin = unit(c(.5, .5, .5, .5), "cm"))  
  
# Save for the paper  
ggsave("Figures/Fig2.tiff", device = "tiff", plot = aspects\_plot, dpi = 300, width = 308, height = 208, units = "mm")  
  
# Save for the manuscript  
ggsave("Figures/Fig2.png", device = "png", plot = aspects\_plot, dpi = 300, width = 308, height = 208, units = "mm")  
  
aspects\_plot



### Main advantages of working from home

The three lowest-rated advantages of working from home

aspects %>%   
 filter(better\_home == 1L) %>%   
 slice\_min(mean, n = 3)

## # A tibble: 3 x 4  
## aspect mean sd better\_home  
## <chr> <dbl> <dbl> <int>  
## 1 Working on my manuscript 3 1.89 1  
## 2 Reading the literature 3.15 1.85 1  
## 3 Analyzing my data 3.42 1.94 1

### Main advantages of working in the lab

The three highest-rated advantages of working from the lab

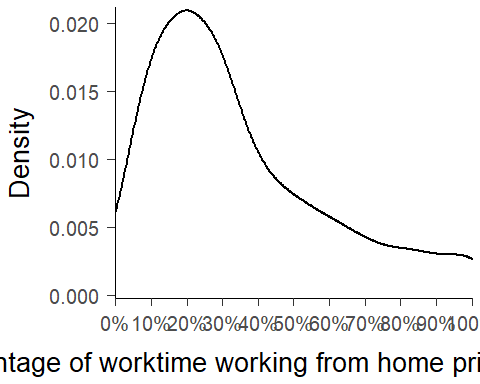
aspects %>%   
 filter(better\_home == 0L) %>%   
 slice\_max(mean, n = 3)

## # A tibble: 3 x 4  
## aspect mean sd better\_home  
## <chr> <dbl> <dbl> <int>  
## 1 Sharing thoughts with colleagues 5.28 1.44 0  
## 2 Keeping in touch with my team 5.21 1.42 0  
## 3 Collecting data 5.16 1.69 0

## How much did researchers work from home before the pandemic?

The distribution of percentages of working from your home time before the pandemic.

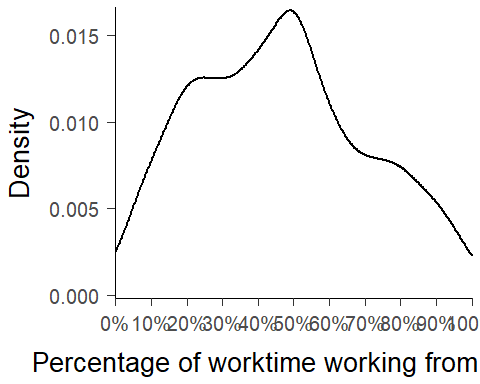
percentage\_plot\_data <-  
 processed %>%  
 select(participant\_id,  
 prior\_home\_prop\_1,  
 future\_home\_prop\_1) %>%  
 gather(key = "time", value = "percent", -participant\_id) %>%  
 mutate(time = case\_when(time == "prior\_home\_prop\_1" ~ "Prior to pandemic",  
 time == "future\_home\_prop\_1" ~ "Ideal"),  
 time = factor(time, c("Prior to pandemic", "Ideal")))  
  
percentage\_plot\_data %>%  
 filter(time == "Prior to pandemic") %>%   
 ggplot() +  
 aes(x = percent) +  
 geom\_density(alpha = 0.6, size = 0.8) +  
 scale\_y\_continuous(expand = c(0.01, 0),  
 breaks = scales::pretty\_breaks()) +  
 scale\_x\_continuous(expand = c(0, 0),  
 breaks = seq(0, 100, 10),  
 labels = scales::label\_percent(scale = 1)) +  
 labs(x = "Percentage of worktime working from home prior to pandemic",  
 y = "Density") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15))



## How much would researchers work from home after the pandemic?

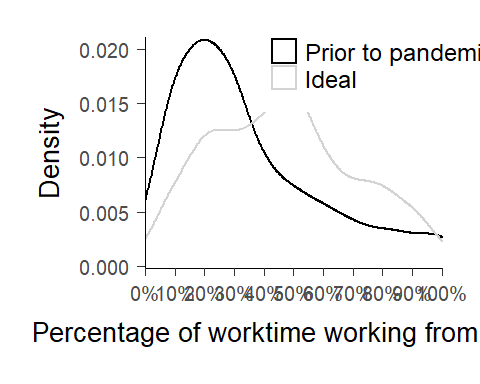
The distribution of percentages of ideal working from home time after the pandemic.

percentage\_plot\_data %>%  
 filter(time == "Ideal") %>%   
 ggplot() +  
 aes(x = percent) +  
 geom\_density(alpha = 0.6, size = 0.8) +  
 scale\_y\_continuous(expand = c(0.01, 0),  
 breaks = scales::pretty\_breaks()) +  
 scale\_x\_continuous(expand = c(0, 0),  
 breaks = seq(0, 100, 10),  
 labels = scales::label\_percent(scale = 1)) +  
 labs(x = "Percentage of worktime working from home",  
 y = "Density") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15))



Prior and ideal percentages of working from home on the same figure.

percentage\_plot <-  
 percentage\_plot\_data %>%  
 ggplot() +  
 aes(x = percent,  
 color = time) +  
 geom\_density(alpha = 0.6, size = 0.8) +  
 scale\_y\_continuous(expand = c(0.01, 0),  
 breaks = scales::pretty\_breaks()) +  
 scale\_x\_continuous(expand = c(0, 0),  
 breaks = seq(0, 100, 10),  
 labels = scales::label\_percent(scale = 1)) +  
 scale\_fill\_manual(values = c('#000000', '#D3D3D3')) +  
 scale\_color\_manual(values=c('#000000', '#D3D3D3'))+  
 labs(x = "Percentage of worktime working from home",  
 y = "Density",  
 color = "Time") +  
 papaja::theme\_apa() +  
 theme(axis.title = element\_text(size = 20),  
 axis.text = element\_text(size = 15),  
 legend.position = c(.8, .9),  
 legend.title = element\_blank(),   
 legend.text = element\_text(size = 18),  
 plot.margin = unit(c(1, 1, 1, 1), "cm"))  
  
# Save for the paper  
ggsave("Figures/Fig3.tiff", device = "tiff", plot = percentage\_plot, dpi = 300, width = 308, height = 208, units = "mm")  
  
# Save for the manuscript  
ggsave("Figures/Fig3.png", device = "png", plot = percentage\_plot, dpi = 300, width = 308, height = 208, units = "mm")  
  
percentage\_plot



## Would it be possible to work more from home in the future?

See the distinct values of the difference between the ideal percentage of working more from the future and the prior percentage. If the difference is negative the respondent wants to work less from home in the future, if it is positive the respondents wants to work more from home in the future.

processed %>%   
 distinct(future\_prior\_diff) %>%   
 arrange(future\_prior\_diff) %>%   
 knitr::kable()

Showing a descriptive comparison.

processed %>%   
 mutate(more\_from\_home = case\_when(future\_prior\_diff > 0 ~ "Respondent wants to work more from home",  
 future\_prior\_diff < 0 ~ "Respondent wants to work less from home",  
 future\_prior\_diff == 0 ~ "Respondent working the ideal amount of time from home")) %>%   
 count(more\_from\_home) %>%  
 mutate(N = sum(n),  
 prop = n / N \* 100) %>%   
 arrange(n)

## # A tibble: 3 x 4  
## more\_from\_home n N prop  
## <chr> <int> <int> <dbl>  
## 1 Respondent wants to work less from home 114 704 16.2  
## 2 Respondent working the ideal amount of time from home 129 704 18.3  
## 3 Respondent wants to work more from home 461 704 65.5

Number of respondents who worked 100% from home before the pandemic.

processed %>%   
 filter(prior\_home\_prop\_1 == 100) %>%   
 count()

## # A tibble: 1 x 1  
## n  
## <int>  
## 1 20

Taken all their other duties (education, administration, etc.) and provided circumstances at home (infrastructure, level of disturbance) of researchers think that it would be possible to work more from home in the future. (excluding 100% home workers, including only wishing to work more from home)

This sentence was preregistered: *OF those who find working from home more efficient*, but we left this filter out from the analysis.

processed %>%   
 filter(prior\_home\_prop\_1 != 100,  
 future\_prior\_diff > 0  
 # now\_later\_eff == "more efficient"  
 ) %>%   
 count(feasible) %>%   
 mutate(N = sum(n),  
 prop = n / N \* 100)

## # A tibble: 2 x 4  
## feasible n N prop  
## <chr> <int> <int> <dbl>  
## 1 No 64 461 13.9  
## 2 Yes 397 461 86.1

## Additional analyses

Additional descriptive results will be provided for the interested subgroups.

### Are people living with children more or less efficient when working from home?

processed %>% distinct(living\_sit)

## # A tibble: 7 x 1  
## living\_sit   
## <chr>   
## 1 Living only with partner   
## 2 Living with partner and non-adult child(ren)   
## 3 Living alone   
## 4 Other   
## 5 Living with parents or other adult family members  
## 6 Single-parent with non-adult child(ren)   
## 7 Living with non-family others

living\_sit\_include <- c("Living with partner and non-adult child(ren)", "Single-parent with non-adult child(ren)")

Number of kids in this subsample.

now\_before\_eff\_data %>%   
 filter(living\_sit %in% living\_sit\_include) %>%   
 count(number\_of\_children)

## # A tibble: 7 x 2  
## number\_of\_children n  
## <chr> <int>  
## 1 0 1  
## 2 1 106  
## 3 12 1  
## 4 2 138  
## 5 3 37  
## 6 4 5  
## 7 5 2

Efficiency ratings during the pandemic.

now\_before\_eff\_data %>%   
 filter(living\_sit %in% living\_sit\_include) %>%   
 percent\_by\_group(now\_before\_eff)

## # A tibble: 3 x 4  
## now\_before\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 168 290 57.9  
## 2 similarly efficient 65 290 22.4  
## 3 more efficient 57 290 19.7

Efficiency ratings after the pandemic.

now\_later\_eff\_data %>%   
 filter(living\_sit %in% living\_sit\_include) %>%   
 percent\_by\_group(now\_later\_eff)

## # A tibble: 3 x 4  
## now\_later\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 95 295 32.2  
## 2 similarly efficient 113 295 38.3  
## 3 more efficient 87 295 29.5

### What circumstances make a researcher with children more or less efficient in working from home AFTER the lockdown?

#### With partner

now\_later\_eff\_data %>%   
 filter(living\_sit == "Living with partner and non-adult child(ren)") %>%   
 percent\_by\_group(now\_later\_eff)

## # A tibble: 3 x 4  
## now\_later\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 82 272 30.2  
## 2 similarly efficient 105 272 38.6  
## 3 more efficient 85 272 31.2

#### Single

now\_later\_eff\_data %>%   
 filter(living\_sit == "Single-parent with non-adult child(ren)") %>%   
 percent\_by\_group(now\_later\_eff)

## # A tibble: 3 x 4  
## now\_later\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 13 23 56.5  
## 2 similarly efficient 8 23 34.8  
## 3 more efficient 2 23 8.7

### What circumstances make a researcher with children more or less efficient in working from home DURING the lockdown?

#### With partner

now\_before\_eff\_data %>%   
 filter(living\_sit == "Living with partner and non-adult child(ren)") %>%   
 percent\_by\_group(now\_before\_eff)

## # A tibble: 3 x 4  
## now\_before\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 153 269 56.9  
## 2 similarly efficient 61 269 22.7  
## 3 more efficient 55 269 20.4

#### Single

now\_before\_eff\_data %>%   
 filter(living\_sit == "Single-parent with non-adult child(ren)") %>%   
 percent\_by\_group(now\_before\_eff)

## # A tibble: 3 x 4  
## now\_before\_eff n N prop  
## <chr> <int> <int> <dbl>  
## 1 less efficient 15 21 71.4   
## 2 similarly efficient 4 21 19.0   
## 3 more efficient 2 21 9.52

### Which subgroup would benefit the most/less from working more from home?

#### During

Using only the filtered dataset for the efficiency rating calculations.

subgroup\_eff\_during <-  
 tibble(subvars = subvars) %>%   
 mutate(levels = purrr::map(subvars,  
 ~ get\_levels(  
 df = now\_before\_eff\_data,  
 var = .x)),  
 levels\_eff = purrr::map2(subvars, levels,  
 ~ efficiency\_subgroups\_levels(  
 df = now\_before\_eff\_data,  
 subvar\_name = .x,  
 subgroup\_name = .y,  
 efficiency\_var = now\_before\_eff)),  
 levels\_eff = set\_names(levels\_eff, map(subvars, ~rlang::as\_name(.x)))) %>%  
 select(subvars, levels\_eff) %>%   
 unnest\_longer(levels\_eff) %>%   
 unnest(levels\_eff) %>%   
 mutate(subvars = case\_when(subvars == "position" ~ "Academic position",  
 subvars == "area\_of\_research" ~ "Area of research",  
 subvars == "wokrplace\_type" ~ "Workplace type",  
 subvars == "data\_coll\_remote" ~ "Data collection remotely",  
 subvars == "gender" ~ "Gender",  
 subvars == "age" ~ "Age",  
 subvars == "edu\_duties" ~ "Educational duties",  
 subvars == "team\_work" ~ "Team work",  
 subvars == "partner\_work" ~ "Partner working",  
 subvars == "living\_sit" ~ "Living situation",  
 subvars == "homeschool" ~ "Homeschooling",  
 subvars == "childcare\_help" ~ "Help with childcare",  
 subvars == "work\_home\_dist" ~ "Work-home distance",  
 subvars == "office\_setup" ~ "Home office setup",  
 subvars == "number\_of\_children" ~ "Number of children")) %>%   
 select(subvars, levels\_eff\_id, now\_before\_eff, n, N, prop) %>%  
 rename(`Background information question` = subvars,  
 Subgroups = levels\_eff\_id,  
 `Efficiency ratings` = now\_before\_eff,  
 `Number of responses to the efficiency ratings` = n,  
 `Number of respondents in the subgroup` = N,  
 `Proportion of the subgroup` = prop)

papaja::apa\_table(  
 subgroup\_eff\_during,  
 caption = "Efficiency Ratings by Each Subgroup Comparing Efficiency Before and During the Lockdown",  
 escape = TRUE  
)

(#tab:unnamed-chunk-35)

*Efficiency Ratings by Each Subgroup Comparing Efficiency Before and During the Lockdown*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Background information question | Subgroups | Efficiency ratings | Number of responses to the efficiency ratings | Number of respondents in the subgroup | Proportion of the subgroup |
| Academic position | postdoc | less efficient | 31 | 72 | 43.06 |
| Academic position | postdoc | similarly efficient | 28 | 72 | 38.89 |
| Academic position | postdoc | more efficient | 13 | 72 | 18.06 |
| Academic position | associate professor | less efficient | 87 | 165 | 52.73 |
| Academic position | associate professor | similarly efficient | 34 | 165 | 20.61 |
| Academic position | associate professor | more efficient | 44 | 165 | 26.67 |
| Academic position | assistant professor | less efficient | 71 | 117 | 60.68 |
| Academic position | assistant professor | similarly efficient | 23 | 117 | 19.66 |
| Academic position | assistant professor | more efficient | 23 | 117 | 19.66 |
| Academic position | full professor | less efficient | 79 | 195 | 40.51 |
| Academic position | full professor | similarly efficient | 79 | 195 | 40.51 |
| Academic position | full professor | more efficient | 37 | 195 | 18.97 |
| Academic position | non-academic researcher | less efficient | 11 | 33 | 33.33 |
| Academic position | non-academic researcher | similarly efficient | 8 | 33 | 24.24 |
| Academic position | non-academic researcher | more efficient | 14 | 33 | 42.42 |
| Academic position | not applicable | similarly efficient | 1 | 1 | 100.00 |
| Academic position | PhD student | less efficient | 25 | 67 | 37.31 |
| Academic position | PhD student | similarly efficient | 25 | 67 | 37.31 |
| Academic position | PhD student | more efficient | 17 | 67 | 25.37 |
| Academic position | research assistant | less efficient | 4 | 12 | 33.33 |
| Academic position | research assistant | similarly efficient | 1 | 12 | 8.33 |
| Academic position | research assistant | more efficient | 7 | 12 | 58.33 |
| Area of research | Social Sciences | less efficient | 231 | 502 | 46.02 |
| Area of research | Social Sciences | similarly efficient | 147 | 502 | 29.28 |
| Area of research | Social Sciences | more efficient | 124 | 502 | 24.70 |
| Area of research | Earth & Space Sciences | more efficient | 2 | 2 | 100.00 |
| Area of research | Life Sciences | less efficient | 45 | 89 | 50.56 |
| Area of research | Life Sciences | similarly efficient | 28 | 89 | 31.46 |
| Area of research | Life Sciences | more efficient | 16 | 89 | 17.98 |
| Area of research | Other | less efficient | 28 | 59 | 47.46 |
| Area of research | Other | similarly efficient | 21 | 59 | 35.59 |
| Area of research | Other | more efficient | 10 | 59 | 16.95 |
| Area of research | Physical Sciences | less efficient | 3 | 5 | 60.00 |
| Area of research | Physical Sciences | similarly efficient | 2 | 5 | 40.00 |
| Area of research | Formal Sciences | less efficient | 1 | 5 | 20.00 |
| Area of research | Formal Sciences | similarly efficient | 1 | 5 | 20.00 |
| Area of research | Formal Sciences | more efficient | 3 | 5 | 60.00 |
| Workplace type | Research and educational institute | less efficient | 268 | 574 | 46.69 |
| Workplace type | Research and educational institute | similarly efficient | 178 | 574 | 31.01 |
| Workplace type | Research and educational institute | more efficient | 128 | 574 | 22.30 |
| Workplace type | Purely research institute | less efficient | 27 | 55 | 49.09 |
| Workplace type | Purely research institute | similarly efficient | 13 | 55 | 23.64 |
| Workplace type | Purely research institute | more efficient | 15 | 55 | 27.27 |
| Workplace type | None of them | less efficient | 4 | 19 | 21.05 |
| Workplace type | None of them | similarly efficient | 5 | 19 | 26.32 |
| Workplace type | None of them | more efficient | 10 | 19 | 52.63 |
| Workplace type | Purely educational institute | less efficient | 9 | 14 | 64.29 |
| Workplace type | Purely educational institute | similarly efficient | 3 | 14 | 21.43 |
| Workplace type | Purely educational institute | more efficient | 2 | 14 | 14.29 |
| Data collection remotely | No | less efficient | 86 | 158 | 54.43 |
| Data collection remotely | No | similarly efficient | 46 | 158 | 29.11 |
| Data collection remotely | No | more efficient | 26 | 158 | 16.46 |
| Data collection remotely | Yes (including if someone else does it for me) | less efficient | 218 | 485 | 44.95 |
| Data collection remotely | Yes (including if someone else does it for me) | similarly efficient | 144 | 485 | 29.69 |
| Data collection remotely | Yes (including if someone else does it for me) | more efficient | 123 | 485 | 25.36 |
| Data collection remotely | not applicable | less efficient | 4 | 19 | 21.05 |
| Data collection remotely | not applicable | similarly efficient | 9 | 19 | 47.37 |
| Data collection remotely | not applicable | more efficient | 6 | 19 | 31.58 |
| Gender | Male | less efficient | 153 | 317 | 48.26 |
| Gender | Male | similarly efficient | 97 | 317 | 30.60 |
| Gender | Male | more efficient | 67 | 317 | 21.14 |
| Gender | Female | less efficient | 150 | 337 | 44.51 |
| Gender | Female | similarly efficient | 101 | 337 | 29.97 |
| Gender | Female | more efficient | 86 | 337 | 25.52 |
| Gender | Prefer not to say | less efficient | 5 | 7 | 71.43 |
| Gender | Prefer not to say | similarly efficient | 1 | 7 | 14.29 |
| Gender | Prefer not to say | more efficient | 1 | 7 | 14.29 |
| Gender | Other | more efficient | 1 | 1 | 100.00 |
| Age | 25 - 34 | less efficient | 58 | 144 | 40.28 |
| Age | 25 - 34 | similarly efficient | 44 | 144 | 30.56 |
| Age | 25 - 34 | more efficient | 42 | 144 | 29.17 |
| Age | Under 24 | less efficient | 2 | 7 | 28.57 |
| Age | Under 24 | similarly efficient | 3 | 7 | 42.86 |
| Age | Under 24 | more efficient | 2 | 7 | 28.57 |
| Age | 35 - 44 | less efficient | 118 | 216 | 54.63 |
| Age | 35 - 44 | similarly efficient | 56 | 216 | 25.93 |
| Age | 35 - 44 | more efficient | 42 | 216 | 19.44 |
| Age | 55 - 64 | less efficient | 42 | 90 | 46.67 |
| Age | 55 - 64 | similarly efficient | 31 | 90 | 34.44 |
| Age | 55 - 64 | more efficient | 17 | 90 | 18.89 |
| Age | 45 - 54 | less efficient | 77 | 162 | 47.53 |
| Age | 45 - 54 | similarly efficient | 45 | 162 | 27.78 |
| Age | 45 - 54 | more efficient | 40 | 162 | 24.69 |
| Age | 65 - 74 | less efficient | 10 | 38 | 26.32 |
| Age | 65 - 74 | similarly efficient | 19 | 38 | 50.00 |
| Age | 65 - 74 | more efficient | 9 | 38 | 23.68 |
| Age | 75 - 84 | less efficient | 1 | 5 | 20.00 |
| Age | 75 - 84 | similarly efficient | 1 | 5 | 20.00 |
| Age | 75 - 84 | more efficient | 3 | 5 | 60.00 |
| Educational duties | No | less efficient | 44 | 121 | 36.36 |
| Educational duties | No | similarly efficient | 40 | 121 | 33.06 |
| Educational duties | No | more efficient | 37 | 121 | 30.58 |
| Educational duties | Yes | less efficient | 264 | 541 | 48.80 |
| Educational duties | Yes | similarly efficient | 159 | 541 | 29.39 |
| Educational duties | Yes | more efficient | 118 | 541 | 21.81 |
| Team work | Yes | less efficient | 157 | 355 | 44.23 |
| Team work | Yes | similarly efficient | 111 | 355 | 31.27 |
| Team work | Yes | more efficient | 87 | 355 | 24.51 |
| Team work | No | less efficient | 151 | 307 | 49.19 |
| Team work | No | similarly efficient | 88 | 307 | 28.66 |
| Team work | No | more efficient | 68 | 307 | 22.15 |
| Partner working | Yes | less efficient | 188 | 418 | 44.98 |
| Partner working | Yes | similarly efficient | 128 | 418 | 30.62 |
| Partner working | Yes | more efficient | 102 | 418 | 24.40 |
| Partner working | No | less efficient | 56 | 114 | 49.12 |
| Partner working | No | similarly efficient | 31 | 114 | 27.19 |
| Partner working | No | more efficient | 27 | 114 | 23.68 |
| Partner working | not applicable | less efficient | 64 | 130 | 49.23 |
| Partner working | not applicable | similarly efficient | 40 | 130 | 30.77 |
| Partner working | not applicable | more efficient | 26 | 130 | 20.00 |
| Living situation | Living only with partner | less efficient | 82 | 223 | 36.77 |
| Living situation | Living only with partner | similarly efficient | 85 | 223 | 38.12 |
| Living situation | Living only with partner | more efficient | 56 | 223 | 25.11 |
| Living situation | Living with partner and non-adult child(ren) | less efficient | 153 | 269 | 56.88 |
| Living situation | Living with partner and non-adult child(ren) | similarly efficient | 61 | 269 | 22.68 |
| Living situation | Living with partner and non-adult child(ren) | more efficient | 55 | 269 | 20.45 |
| Living situation | Living alone | less efficient | 33 | 87 | 37.93 |
| Living situation | Living alone | similarly efficient | 28 | 87 | 32.18 |
| Living situation | Living alone | more efficient | 26 | 87 | 29.89 |
| Living situation | Other | less efficient | 12 | 30 | 40.00 |
| Living situation | Other | similarly efficient | 11 | 30 | 36.67 |
| Living situation | Other | more efficient | 7 | 30 | 23.33 |
| Living situation | Living with parents or other adult family members | less efficient | 10 | 25 | 40.00 |
| Living situation | Living with parents or other adult family members | similarly efficient | 8 | 25 | 32.00 |
| Living situation | Living with parents or other adult family members | more efficient | 7 | 25 | 28.00 |
| Living situation | Single-parent with non-adult child(ren) | less efficient | 15 | 21 | 71.43 |
| Living situation | Single-parent with non-adult child(ren) | similarly efficient | 4 | 21 | 19.05 |
| Living situation | Single-parent with non-adult child(ren) | more efficient | 2 | 21 | 9.52 |
| Living situation | Living with non-family others | less efficient | 3 | 7 | 42.86 |
| Living situation | Living with non-family others | similarly efficient | 2 | 7 | 28.57 |
| Living situation | Living with non-family others | more efficient | 2 | 7 | 28.57 |
| Homeschooling | No | less efficient | 173 | 436 | 39.68 |
| Homeschooling | No | similarly efficient | 147 | 436 | 33.72 |
| Homeschooling | No | more efficient | 116 | 436 | 26.61 |
| Homeschooling | Yes | less efficient | 135 | 226 | 59.73 |
| Homeschooling | Yes | similarly efficient | 52 | 226 | 23.01 |
| Homeschooling | Yes | more efficient | 39 | 226 | 17.26 |
| Help with childcare | not applicable | less efficient | 123 | 329 | 37.39 |
| Help with childcare | not applicable | similarly efficient | 114 | 329 | 34.65 |
| Help with childcare | not applicable | more efficient | 92 | 329 | 27.96 |
| Help with childcare | No | less efficient | 120 | 214 | 56.07 |
| Help with childcare | No | similarly efficient | 57 | 214 | 26.64 |
| Help with childcare | No | more efficient | 37 | 214 | 17.29 |
| Help with childcare | Yes | less efficient | 65 | 119 | 54.62 |
| Help with childcare | Yes | similarly efficient | 28 | 119 | 23.53 |
| Help with childcare | Yes | more efficient | 26 | 119 | 21.85 |
| Work-home distance | 30-60 min | less efficient | 75 | 187 | 40.11 |
| Work-home distance | 30-60 min | similarly efficient | 58 | 187 | 31.02 |
| Work-home distance | 30-60 min | more efficient | 54 | 187 | 28.88 |
| Work-home distance | >60 min | less efficient | 26 | 80 | 32.50 |
| Work-home distance | >60 min | similarly efficient | 29 | 80 | 36.25 |
| Work-home distance | >60 min | more efficient | 25 | 80 | 31.25 |
| Work-home distance | <30 min | less efficient | 207 | 395 | 52.41 |
| Work-home distance | <30 min | similarly efficient | 112 | 395 | 28.35 |
| Work-home distance | <30 min | more efficient | 76 | 395 | 19.24 |
| Home office setup | Fully equipped | less efficient | 175 | 417 | 41.97 |
| Home office setup | Fully equipped | similarly efficient | 130 | 417 | 31.18 |
| Home office setup | Fully equipped | more efficient | 112 | 417 | 26.86 |
| Home office setup | Underequipped | less efficient | 133 | 245 | 54.29 |
| Home office setup | Underequipped | similarly efficient | 69 | 245 | 28.16 |
| Home office setup | Underequipped | more efficient | 43 | 245 | 17.55 |
| Number of children | 0 | less efficient | 122 | 331 | 36.86 |
| Number of children | 0 | similarly efficient | 120 | 331 | 36.25 |
| Number of children | 0 | more efficient | 89 | 331 | 26.89 |
| Number of children | 7 | more efficient | 1 | 1 | 100.00 |
| Number of children | 2 | less efficient | 91 | 152 | 59.87 |
| Number of children | 2 | similarly efficient | 34 | 152 | 22.37 |
| Number of children | 2 | more efficient | 27 | 152 | 17.76 |
| Number of children | 1 | less efficient | 63 | 126 | 50.00 |
| Number of children | 1 | similarly efficient | 38 | 126 | 30.16 |
| Number of children | 1 | more efficient | 25 | 126 | 19.84 |
| Number of children | 4 | less efficient | 5 | 7 | 71.43 |
| Number of children | 4 | more efficient | 2 | 7 | 28.57 |
| Number of children | 3 | less efficient | 23 | 40 | 57.50 |
| Number of children | 3 | similarly efficient | 7 | 40 | 17.50 |
| Number of children | 3 | more efficient | 10 | 40 | 25.00 |
| Number of children | 12 | more efficient | 1 | 1 | 100.00 |
| Number of children | 22 | less efficient | 1 | 1 | 100.00 |
| Number of children | 8 | less efficient | 1 | 1 | 100.00 |
| Number of children | 5 | less efficient | 2 | 2 | 100.00 |

#### After

subgroup\_eff\_later <-  
 tibble(subvars = subvars) %>%   
 mutate(levels = purrr::map(subvars,  
 ~ get\_levels(  
 df = now\_later\_eff\_data,  
 var = .x)),  
 levels\_eff = purrr::map2(subvars, levels,  
 ~ efficiency\_subgroups\_levels(  
 df = now\_later\_eff\_data,  
 subvar\_name = .x,  
 subgroup\_name = .y,  
 efficiency\_var = now\_later\_eff)),  
 levels\_eff = set\_names(levels\_eff, map(subvars, ~rlang::as\_name(.x)))) %>%  
 select(subvars, levels\_eff) %>%   
 unnest\_longer(levels\_eff) %>%   
 unnest(levels\_eff) %>%   
 mutate(subvars = case\_when(subvars == "position" ~ "Academic position",  
 subvars == "area\_of\_research" ~ "Area of research",  
 subvars == "wokrplace\_type" ~ "Workplace type",  
 subvars == "data\_coll\_remote" ~ "Data collection remotely",  
 subvars == "gender" ~ "Gender",  
 subvars == "age" ~ "Age",  
 subvars == "edu\_duties" ~ "Educational duties",  
 subvars == "team\_work" ~ "Team work",  
 subvars == "partner\_work" ~ "Partner working",  
 subvars == "living\_sit" ~ "Living situation",  
 subvars == "homeschool" ~ "Homeschooling",  
 subvars == "childcare\_help" ~ "Help with childcare",  
 subvars == "work\_home\_dist" ~ "Work-home distance",  
 subvars == "office\_setup" ~ "Home office setup",  
 subvars == "number\_of\_children" ~ "Number of children")) %>%   
 select(subvars, levels\_eff\_id, now\_later\_eff, n, N, prop) %>%  
 rename(`Background information question` = subvars,  
 Subgroups = levels\_eff\_id,  
 `Efficiency ratings` = now\_later\_eff,  
 `Number of responses to the efficiency ratings` = n,  
 `Number of respondents in the subgroup` = N,  
 `Proportion of the subgroup` = prop)

papaja::apa\_table(  
 subgroup\_eff\_later,  
 caption = "Efficiency Ratings by Each Subgroup Comparing Efficiency During and After the Lockdown",  
 escape = TRUE  
)

(#tab:unnamed-chunk-37)

*Efficiency Ratings by Each Subgroup Comparing Efficiency During and After the Lockdown*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Background information question | Subgroups | Efficiency ratings | Number of responses to the efficiency ratings | Number of respondents in the subgroup | Proportion of the subgroup |
| Academic position | postdoc | less efficient | 23 | 72 | 31.94 |
| Academic position | postdoc | similarly efficient | 27 | 72 | 37.50 |
| Academic position | postdoc | more efficient | 22 | 72 | 30.56 |
| Academic position | associate professor | less efficient | 52 | 168 | 30.95 |
| Academic position | associate professor | similarly efficient | 64 | 168 | 38.10 |
| Academic position | associate professor | more efficient | 52 | 168 | 30.95 |
| Academic position | assistant professor | less efficient | 40 | 124 | 32.26 |
| Academic position | assistant professor | similarly efficient | 48 | 124 | 38.71 |
| Academic position | assistant professor | more efficient | 36 | 124 | 29.03 |
| Academic position | full professor | less efficient | 60 | 202 | 29.70 |
| Academic position | full professor | similarly efficient | 97 | 202 | 48.02 |
| Academic position | full professor | more efficient | 45 | 202 | 22.28 |
| Academic position | non-academic researcher | less efficient | 5 | 34 | 14.71 |
| Academic position | non-academic researcher | similarly efficient | 12 | 34 | 35.29 |
| Academic position | non-academic researcher | more efficient | 17 | 34 | 50.00 |
| Academic position | not applicable | more efficient | 1 | 1 | 100.00 |
| Academic position | PhD student | less efficient | 18 | 69 | 26.09 |
| Academic position | PhD student | similarly efficient | 31 | 69 | 44.93 |
| Academic position | PhD student | more efficient | 20 | 69 | 28.99 |
| Academic position | research assistant | less efficient | 3 | 14 | 21.43 |
| Academic position | research assistant | similarly efficient | 3 | 14 | 21.43 |
| Academic position | research assistant | more efficient | 8 | 14 | 57.14 |
| Area of research | Social Sciences | less efficient | 149 | 514 | 28.99 |
| Area of research | Social Sciences | similarly efficient | 212 | 514 | 41.25 |
| Area of research | Social Sciences | more efficient | 153 | 514 | 29.77 |
| Area of research | Earth & Space Sciences | similarly efficient | 1 | 2 | 50.00 |
| Area of research | Earth & Space Sciences | more efficient | 1 | 2 | 50.00 |
| Area of research | Life Sciences | less efficient | 29 | 96 | 30.21 |
| Area of research | Life Sciences | similarly efficient | 41 | 96 | 42.71 |
| Area of research | Life Sciences | more efficient | 26 | 96 | 27.08 |
| Area of research | Other | less efficient | 20 | 62 | 32.26 |
| Area of research | Other | similarly efficient | 25 | 62 | 40.32 |
| Area of research | Other | more efficient | 17 | 62 | 27.42 |
| Area of research | Physical Sciences | less efficient | 2 | 5 | 40.00 |
| Area of research | Physical Sciences | similarly efficient | 2 | 5 | 40.00 |
| Area of research | Physical Sciences | more efficient | 1 | 5 | 20.00 |
| Area of research | Formal Sciences | less efficient | 1 | 5 | 20.00 |
| Area of research | Formal Sciences | similarly efficient | 1 | 5 | 20.00 |
| Area of research | Formal Sciences | more efficient | 3 | 5 | 60.00 |
| Workplace type | Research and educational institute | less efficient | 182 | 594 | 30.64 |
| Workplace type | Research and educational institute | similarly efficient | 247 | 594 | 41.58 |
| Workplace type | Research and educational institute | more efficient | 165 | 594 | 27.78 |
| Workplace type | Purely research institute | less efficient | 14 | 56 | 25.00 |
| Workplace type | Purely research institute | similarly efficient | 24 | 56 | 42.86 |
| Workplace type | Purely research institute | more efficient | 18 | 56 | 32.14 |
| Workplace type | None of them | less efficient | 2 | 20 | 10.00 |
| Workplace type | None of them | similarly efficient | 5 | 20 | 25.00 |
| Workplace type | None of them | more efficient | 13 | 20 | 65.00 |
| Workplace type | Purely educational institute | less efficient | 3 | 14 | 21.43 |
| Workplace type | Purely educational institute | similarly efficient | 6 | 14 | 42.86 |
| Workplace type | Purely educational institute | more efficient | 5 | 14 | 35.71 |
| Data collection remotely | No | less efficient | 62 | 168 | 36.90 |
| Data collection remotely | No | similarly efficient | 72 | 168 | 42.86 |
| Data collection remotely | No | more efficient | 34 | 168 | 20.24 |
| Data collection remotely | Yes (including if someone else does it for me) | less efficient | 136 | 495 | 27.47 |
| Data collection remotely | Yes (including if someone else does it for me) | similarly efficient | 200 | 495 | 40.40 |
| Data collection remotely | Yes (including if someone else does it for me) | more efficient | 159 | 495 | 32.12 |
| Data collection remotely | not applicable | less efficient | 3 | 21 | 14.29 |
| Data collection remotely | not applicable | similarly efficient | 10 | 21 | 47.62 |
| Data collection remotely | not applicable | more efficient | 8 | 21 | 38.10 |
| Gender | Male | less efficient | 106 | 331 | 32.02 |
| Gender | Male | similarly efficient | 137 | 331 | 41.39 |
| Gender | Male | more efficient | 88 | 331 | 26.59 |
| Gender | Female | less efficient | 90 | 344 | 26.16 |
| Gender | Female | similarly efficient | 142 | 344 | 41.28 |
| Gender | Female | more efficient | 112 | 344 | 32.56 |
| Gender | Prefer not to say | less efficient | 5 | 8 | 62.50 |
| Gender | Prefer not to say | similarly efficient | 3 | 8 | 37.50 |
| Gender | Other | more efficient | 1 | 1 | 100.00 |
| Age | 25 - 34 | less efficient | 43 | 149 | 28.86 |
| Age | 25 - 34 | similarly efficient | 54 | 149 | 36.24 |
| Age | 25 - 34 | more efficient | 52 | 149 | 34.90 |
| Age | Under 24 | less efficient | 1 | 7 | 14.29 |
| Age | Under 24 | similarly efficient | 3 | 7 | 42.86 |
| Age | Under 24 | more efficient | 3 | 7 | 42.86 |
| Age | 35 - 44 | less efficient | 71 | 226 | 31.42 |
| Age | 35 - 44 | similarly efficient | 99 | 226 | 43.81 |
| Age | 35 - 44 | more efficient | 56 | 226 | 24.78 |
| Age | 55 - 64 | less efficient | 25 | 90 | 27.78 |
| Age | 55 - 64 | similarly efficient | 42 | 90 | 46.67 |
| Age | 55 - 64 | more efficient | 23 | 90 | 25.56 |
| Age | 45 - 54 | less efficient | 49 | 163 | 30.06 |
| Age | 45 - 54 | similarly efficient | 60 | 163 | 36.81 |
| Age | 45 - 54 | more efficient | 54 | 163 | 33.13 |
| Age | 65 - 74 | less efficient | 10 | 44 | 22.73 |
| Age | 65 - 74 | similarly efficient | 23 | 44 | 52.27 |
| Age | 65 - 74 | more efficient | 11 | 44 | 25.00 |
| Age | 75 - 84 | less efficient | 2 | 5 | 40.00 |
| Age | 75 - 84 | similarly efficient | 1 | 5 | 20.00 |
| Age | 75 - 84 | more efficient | 2 | 5 | 40.00 |
| Educational duties | No | less efficient | 33 | 132 | 25.00 |
| Educational duties | No | similarly efficient | 51 | 132 | 38.64 |
| Educational duties | No | more efficient | 48 | 132 | 36.36 |
| Educational duties | Yes | less efficient | 168 | 552 | 30.43 |
| Educational duties | Yes | similarly efficient | 231 | 552 | 41.85 |
| Educational duties | Yes | more efficient | 153 | 552 | 27.72 |
| Team work | Yes | less efficient | 107 | 362 | 29.56 |
| Team work | Yes | similarly efficient | 151 | 362 | 41.71 |
| Team work | Yes | more efficient | 104 | 362 | 28.73 |
| Team work | No | less efficient | 94 | 322 | 29.19 |
| Team work | No | similarly efficient | 131 | 322 | 40.68 |
| Team work | No | more efficient | 97 | 322 | 30.12 |
| Partner working | Yes | less efficient | 111 | 431 | 25.75 |
| Partner working | Yes | similarly efficient | 184 | 431 | 42.69 |
| Partner working | Yes | more efficient | 136 | 431 | 31.55 |
| Partner working | No | less efficient | 38 | 116 | 32.76 |
| Partner working | No | similarly efficient | 47 | 116 | 40.52 |
| Partner working | No | more efficient | 31 | 116 | 26.72 |
| Partner working | not applicable | less efficient | 52 | 137 | 37.96 |
| Partner working | not applicable | similarly efficient | 51 | 137 | 37.23 |
| Partner working | not applicable | more efficient | 34 | 137 | 24.82 |
| Living situation | Living only with partner | less efficient | 52 | 231 | 22.51 |
| Living situation | Living only with partner | similarly efficient | 111 | 231 | 48.05 |
| Living situation | Living only with partner | more efficient | 68 | 231 | 29.44 |
| Living situation | Living with partner and non-adult child(ren) | less efficient | 82 | 272 | 30.15 |
| Living situation | Living with partner and non-adult child(ren) | similarly efficient | 105 | 272 | 38.60 |
| Living situation | Living with partner and non-adult child(ren) | more efficient | 85 | 272 | 31.25 |
| Living situation | Living alone | less efficient | 29 | 92 | 31.52 |
| Living situation | Living alone | similarly efficient | 36 | 92 | 39.13 |
| Living situation | Living alone | more efficient | 27 | 92 | 29.35 |
| Living situation | Other | less efficient | 11 | 33 | 33.33 |
| Living situation | Other | similarly efficient | 13 | 33 | 39.39 |
| Living situation | Other | more efficient | 9 | 33 | 27.27 |
| Living situation | Living with parents or other adult family members | less efficient | 10 | 25 | 40.00 |
| Living situation | Living with parents or other adult family members | similarly efficient | 7 | 25 | 28.00 |
| Living situation | Living with parents or other adult family members | more efficient | 8 | 25 | 32.00 |
| Living situation | Single-parent with non-adult child(ren) | less efficient | 13 | 23 | 56.52 |
| Living situation | Single-parent with non-adult child(ren) | similarly efficient | 8 | 23 | 34.78 |
| Living situation | Single-parent with non-adult child(ren) | more efficient | 2 | 23 | 8.70 |
| Living situation | Living with non-family others | less efficient | 4 | 8 | 50.00 |
| Living situation | Living with non-family others | similarly efficient | 2 | 8 | 25.00 |
| Living situation | Living with non-family others | more efficient | 2 | 8 | 25.00 |
| Homeschooling | No | less efficient | 128 | 454 | 28.19 |
| Homeschooling | No | similarly efficient | 187 | 454 | 41.19 |
| Homeschooling | No | more efficient | 139 | 454 | 30.62 |
| Homeschooling | Yes | less efficient | 73 | 230 | 31.74 |
| Homeschooling | Yes | similarly efficient | 95 | 230 | 41.30 |
| Homeschooling | Yes | more efficient | 62 | 230 | 26.96 |
| Help with childcare | not applicable | less efficient | 91 | 344 | 26.45 |
| Help with childcare | not applicable | similarly efficient | 151 | 344 | 43.90 |
| Help with childcare | not applicable | more efficient | 102 | 344 | 29.65 |
| Help with childcare | No | less efficient | 72 | 217 | 33.18 |
| Help with childcare | No | similarly efficient | 84 | 217 | 38.71 |
| Help with childcare | No | more efficient | 61 | 217 | 28.11 |
| Help with childcare | Yes | less efficient | 38 | 123 | 30.89 |
| Help with childcare | Yes | similarly efficient | 47 | 123 | 38.21 |
| Help with childcare | Yes | more efficient | 38 | 123 | 30.89 |
| Work-home distance | 30-60 min | less efficient | 38 | 189 | 20.11 |
| Work-home distance | 30-60 min | similarly efficient | 83 | 189 | 43.92 |
| Work-home distance | 30-60 min | more efficient | 68 | 189 | 35.98 |
| Work-home distance | >60 min | less efficient | 15 | 85 | 17.65 |
| Work-home distance | >60 min | similarly efficient | 39 | 85 | 45.88 |
| Work-home distance | >60 min | more efficient | 31 | 85 | 36.47 |
| Work-home distance | <30 min | less efficient | 148 | 410 | 36.10 |
| Work-home distance | <30 min | similarly efficient | 160 | 410 | 39.02 |
| Work-home distance | <30 min | more efficient | 102 | 410 | 24.88 |
| Home office setup | Fully equipped | less efficient | 100 | 432 | 23.15 |
| Home office setup | Fully equipped | similarly efficient | 185 | 432 | 42.82 |
| Home office setup | Fully equipped | more efficient | 147 | 432 | 34.03 |
| Home office setup | Underequipped | less efficient | 101 | 252 | 40.08 |
| Home office setup | Underequipped | similarly efficient | 97 | 252 | 38.49 |
| Home office setup | Underequipped | more efficient | 54 | 252 | 21.43 |
| Number of children | 0 | less efficient | 91 | 347 | 26.22 |
| Number of children | 0 | similarly efficient | 154 | 347 | 44.38 |
| Number of children | 0 | more efficient | 102 | 347 | 29.39 |
| Number of children | 7 | more efficient | 1 | 1 | 100.00 |
| Number of children | 3 | less efficient | 11 | 37 | 29.73 |
| Number of children | 3 | similarly efficient | 16 | 37 | 43.24 |
| Number of children | 3 | more efficient | 10 | 37 | 27.03 |
| Number of children | 1 | less efficient | 43 | 127 | 33.86 |
| Number of children | 1 | similarly efficient | 49 | 127 | 38.58 |
| Number of children | 1 | more efficient | 35 | 127 | 27.56 |
| Number of children | 2 | less efficient | 53 | 160 | 33.12 |
| Number of children | 2 | similarly efficient | 58 | 160 | 36.25 |
| Number of children | 2 | more efficient | 49 | 160 | 30.63 |
| Number of children | 4 | similarly efficient | 3 | 6 | 50.00 |
| Number of children | 4 | more efficient | 3 | 6 | 50.00 |
| Number of children | 12 | more efficient | 1 | 1 | 100.00 |
| Number of children | 22 | similarly efficient | 1 | 1 | 100.00 |
| Number of children | 5 | less efficient | 2 | 3 | 66.67 |
| Number of children | 5 | similarly efficient | 1 | 3 | 33.33 |
| Number of children | 8 | less efficient | 1 | 1 | 100.00 |

### Would it be ideal and possible for those with teaching duties to work proportionally more from home in the future than before the pandemic?

Even among those who have teaching duties at work, xx% think that more working from home would be ideal, and possible and their work would be more efficient.

processed %>%   
 filter(prior\_home\_prop\_1 != 100,  
 future\_prior\_diff > 0,  
 # now\_later\_eff == "more efficient",  
 edu\_duties == "Yes") %>%   
 count(feasible) %>%   
 mutate(N = sum(n),  
 prop = n / N \* 100)

## # A tibble: 2 x 4  
## feasible n N prop  
## <chr> <int> <int> <dbl>  
## 1 No 60 376 16.0  
## 2 Yes 316 376 84.0