Core Questions

```
count(Core_Questions$Break)
```

```
##                 x freq
## 1 Every 1-2 hours  101
## 2 Every 3-4 hours   79
## 3      Every hour   22
## 4           Other    9
```

```
for(i in 1:nrow(Core_Questions)){

  #######---------Salary depends of external grants------------#################
  if (Core_Questions$S_D_E[i]=="Three months"){
    Core_Questions$S_D_E[i]="Three months"
  }else if (Core_Questions$S_D_E[i]=="2 months" || Core_Questions$S_D_E[i]==2){
    Core_Questions$S_D_E[i]="Two months"
  }else{
    Core_Questions$S_D_E[i]="Other"
  }


  if (Core_Questions$RO_F_EG[i]=="Not funded"){
    Core_Questions$RO_F_EG[i]="Not funded"
  } else if (Core_Questions$RO_F_EG[i]=="25-1%"){
    Core_Questions$RO_F_EG[i]="1-25%"
  } else if (Core_Questions$RO_F_EG[i]=="50-25%"){
    Core_Questions$RO_F_EG[i]="25-50%"
  } else if (Core_Questions$RO_F_EG[i]=="75-50%"){
    Core_Questions$RO_F_EG[i]="50-75%"
  } else if (Core_Questions$RO_F_EG[i]=="100-75%"){
    Core_Questions$RO_F_EG[i]="75-100%"
  } else{
    Core_Questions$RO_F_EG[i]="Fully funded"
  }


  if (Core_Questions$Workplace[i]=="Home"){
    Core_Questions$Workplace[i]="Home"
  } else if (Core_Questions$Workplace[i]=="Office"){
    Core_Questions$Workplace[i]="Office"
  } else {
    Core_Questions$Workplace[i]="Other"
  }

  if (Core_Questions$Email[i]=="Answer email in batches once  or twice per day"){
    Core_Questions$Email[i]="Reply Once/Twice"
  }else {
    Core_Questions$Email[i]="Reply instantly"
  }
```

```
  if (Core_Questions$Break[i]=="Every 1-2 hours"){
    Core_Questions$Break[i]="Every 1-2 hours"
  } else if (Core_Questions$Break[i]=="Every 3-4 hours"){
    Core_Questions$Break[i]="Every 3-4 hours"
  } else if (Core_Questions$Break[i]=="Every hour"){
    Core_Questions$Break[i]="Every hour"
  } else{
    Core_Questions$Break[i]="Other"
  }



  if (Core_Questions$Submit_P[i]=="Minutes before deadline"){
    Core_Questions$Submit_P[i]="Minutes before"
  } else if (Core_Questions$Submit_P[i]=="1-3 hours before deadline"){
    Core_Questions$Submit_P[i]="1-3 hours before"
  } else if (Core_Questions$Submit_P[i]=="3-6 hours before deadline"){
    Core_Questions$Submit_P[i]="3-6 hours before"
  }  else if (Core_Questions$Submit_P[i]=="1 day before deadline"){
    Core_Questions$Submit_P[i]="1 day before"
  } else if (Core_Questions$Submit_P[i]==""){
    Core_Questions$Submit_P[i]=NA
  } else {
    Core_Questions$Submit_P[i]="2 or more days before"
  }

    if (Core_Questions$you_typically_subm[i]=="Minutes before deadline"){
    Core_Questions$you_typically_subm[i]="Minutes before"
  } else if (Core_Questions$you_typically_subm[i]=="1-3 hours before deadline"){
    Core_Questions$you_typically_subm[i]="1-3 hours before"
  } else if (Core_Questions$you_typically_subm[i]=="3-6 hours before deadline"){
    Core_Questions$you_typically_subm[i]="3-6 hours before"
  }  else if (Core_Questions$you_typically_subm[i]=="1 day before deadline"){
    Core_Questions$you_typically_subm[i]="1 day before"
  } else if (Core_Questions$you_typically_subm[i]==""){
    Core_Questions$you_typically_subm[i]=NA
  } else {
    Core_Questions$you_typically_subm[i]="2 or more days before"
  }

}
  levels(factor(Core_Questions$Break))
```

```
## [1] "Every 1-2 hours" "Every 3-4 hours" "Every hour"      "Other"
```

```
  count(Core_Questions$S_D_E)
```

```
##              x freq
## 1        Other   29
## 2 Three months  174
## 3   Two months    8
```

```r
  levels(factor(Core_Questions$State))
```

```
##  [1] "Alabama"      "Arizona"      "California"   "Florida"
##  [5] "Georgia"      "Illinois"     "Maryland"     "Michigan"
##  [9] "Minnesota"    "New Mexico"   "Ohio"         "Pennsylvania"
## [13] "Tennessee"    "Texas"        "Virginia"     "Wisconsin"
```

```r
  levels(factor(Core_Questions$S_D_E))
```

```
## [1] "Other"        "Three months" "Two months"
```

```r
  levels(factor(Core_Questions$RO_F_EG))
```

```
## [1] "1-25%"        "25-50%"       "50-75%"       "75-100%"
## [5] "Fully funded" "Not funded"
```

```r
  levels(factor(Core_Questions$Deadline_today))
```

```
## [1] ""    "No"  "Yes"
```

```r
  levels(factor(Core_Questions$Workload_today))
```

```
## [1] ""         "Heavy"    "Light"    "Standard"
```

```r
  levels(factor(Core_Questions$Workplace))
```

```
## [1] "Home"   "Office" "Other"
```

```r
  levels(factor(Core_Questions$R_Style))
```

```
## [1] "Hands-off" "Hands-on"
```

```r
  levels(factor(Core_Questions$TW_W_H))
```

```
## [1] "< 30"  "> 50"  "30-40" "40-50"
```

```r
  levels(factor(Core_Questions$Break))
```

```
## [1] "Every 1-2 hours" "Every 3-4 hours" "Every hour"      "Other"
```

```r
  levels(factor(Core_Questions$Email))
```

```
## [1] "Reply instantly"  "Reply Once/Twice"
```

```r
  levels(factor(Core_Questions$funding_proposal))
```

```
## [1] "No"  "Yes"
```

```r
  levels(factor(Core_Questions$A_N_Pro))
```

```
## [1] ""     ">=10" "1-2"  "3-4"  "5-6"  "7-9"
```

```r
  levels(factor(Core_Questions$funding_agency))
```

```
##  [1] ""
##  [2] "DOD"
##  [3] "DOE"
##  [4] "Equally distributed across NSF, NASA, DOD, DHS"
##  [5] "NASA"
##  [6] "NIH"
##  [7] "NIJ"
##  [8] "NRC"
##  [9] "NSF"
## [10] "Oil industry"
## [11] "Philanthropic foundations"
## [12] "Private Foundation"
## [13] "State of California"
## [14] "Texas Department of Transportaton"
## [15] "TRB"
## [16] "TxDOT, NCHRP"
## [17] "USDA"
```

```r
  levels(factor(Core_Questions$Success))
```

```
## [1] ""       "< 10%"  "> 90%"  "10-20%" "20-30%" "30-50%" "50-75%" "75-90%"
```

```r
  levels(factor(Core_Questions$Com_Proposal))
```

```
## [1] ""           "< 1 week"   "> 2 months" "1-2 months" "1-2 weeks"
## [6] "2-4 weeks"
```

```r
  levels(factor(Core_Questions$L_Of_SR))
```

```
## [1] ""            "< 1 month"   "> 12 months" "1-3 months"  "3-6 months"
## [6] "6-12 months"
```

```r
  levels(factor(Core_Questions$W_WB_PD))
```

```
## [1] ""                   "About the same"     "Less"
## [4] "More"               "Significantly less" "Significantly more"
```

```r
levels(factor(Core_Questions$Submit_P))
```

```
## [1] "1-3 hours before"      "1 day before"          "2 or more days before"
## [4] "3-6 hours before"      "Minutes before"
```

```r
levels(factor(Core_Questions$Stress_PD))
```

```
## [1] ""                    "Extremely  more"     "Extremely less"
## [4] "Same"                "Significantly  more" "Significantly less"
```

```r
levels(factor(Core_Questions$refereed_conference))
```

```
## [1] "No"  "Yes"
```

```r
levels(factor(Core_Questions$A_N_Conf_Pap))
```

```
## [1] ""      ">= 10" "1-2"   "3-4"   "5-6"   "7-9"
```

```r
levels(factor(Core_Questions$core_rank))
```

```
## [1] ""   "A"  "A*" "B"  "C"
```

```r
levels(factor(Core_Questions$if_you_submit_manuscripts))
```

```
## [1] ""       "< 10%"  "> 90%"  "10-20%" "20-30%" "30-50%" "50-75%" "75-90%"
```

```r
levels(factor(Core_Questions$far_in_advance_do_you))
```

```
## [1] ""           "< 1 week"   "> 2 months" "1-2 months" "1-2 weeks"
## [6] "2-4 weeks"
```

```r
levels(factor(Core_Questions$length_of_supp))
```

```
## [1] ""            "< 1 month"   "> 12 months" "1-3 months"  "3-6 months"
## [6] "6-12 months"
```

```r
levels(factor(Core_Questions$in_the_week_leading_to_a_c))
```

```
## [1] ""                   "About the same"     "Less"
## [4] "More"               "Significantly less" "Significantly more"
```

```r
levels(factor(Core_Questions$you_typically_subm))
```

```
## [1] "1-3 hours before"      "1 day before"          "2 or more days before"
## [4] "3-6 hours before"      "Minutes before"
```

```r
  levels(factor(Core_Questions$ss_level_in_a_fundi))
```

```
## [1] ""                     "Extremely  more"     "Extremely less"
## [4] "Same"                 "Significantly  more"
```

```r
  count(Core_Questions$funding_agency)
```

```
##                                                x freq
## 1                                                 11
## 2                                               DOD   10
## 3                                               DOE   11
## 4  Equally distributed across NSF, NASA, DOD, DHS    1
## 5                                              NASA    6
## 6                                               NIH   35
## 7                                               NIJ    1
## 8                                               NRC    1
## 9                                               NSF  126
## 10                                  Oil industry    1
## 11                      Philanthropic foundations    1
## 12                             Private Foundation    2
## 13                           State of California    1
## 14              Texas Department of Transportaton    1
## 15                                              TRB    1
## 16                                   TxDOT, NCHRP    1
## 17                                           USDA    1
```

```r
# ######Test a single core questions
#   temp <- count(Core_Questions$Workload_today)
#   colnames(temp) <- c("item", "count")
#   temp <- temp[!(temp$item == ""),]
#
#  bar_plot <- ggplot(data = temp, aes(x = item, y = count)) +
#     geom_bar(stat = "identity",
#              width = 0.5,
#              fill = "steelblue") +
#     theme_minimal() +
#     scale_y_continuous(breaks = seq(0, ylimit, by = 5),
#                        limits = c(0, ylimit)) +
#     labs(x = "", y = "Participant count", title = title_list[i - 1]) +
#     theme(
#       panel.grid.major = element_blank(),
#       panel.grid.minor = element_blank(),
#       plot.title = element_text(hjust = 0.5),
#       axis.text.x = element_text(
#         face = "bold",
#         size = 10 ,
#         angle = 30,
#         hjust = 1
#       ),
#       axis.text.y = element_text(face = "bold", size = 10)
#     )+
#    scale_x_discrete( limits=list[[1]])
```

```
#
#  bar_plot
```

```
## [1] "state_do_you_reside"
```

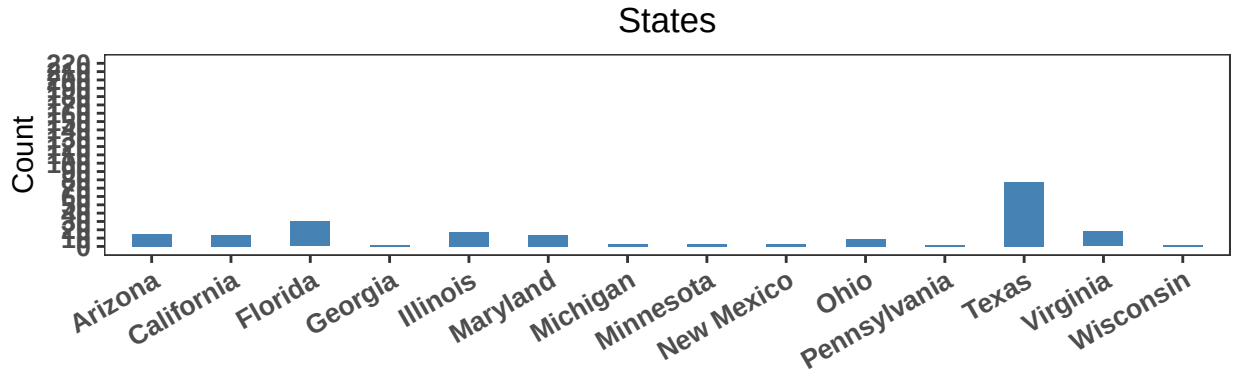
```
## Warning: Removed 2 rows containing missing values (position_stack).
```

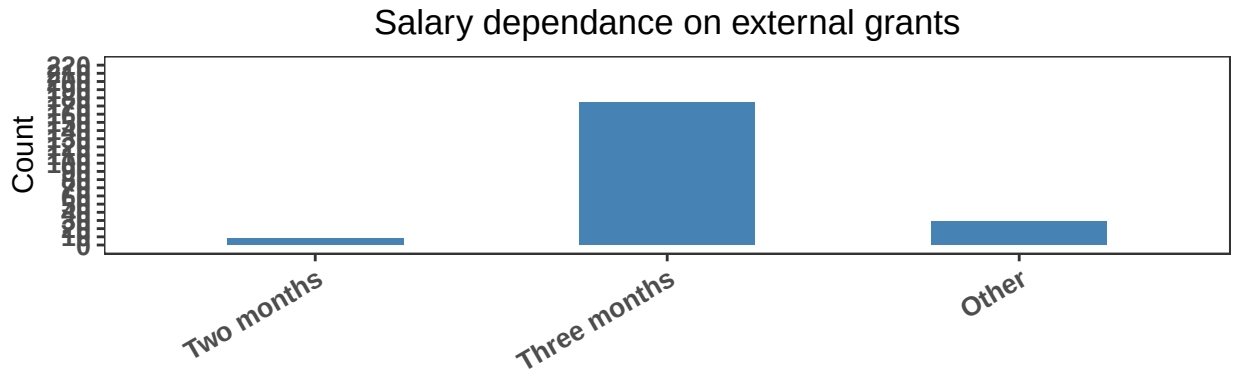
```
## Warning: Removed 6 rows containing missing values (position_stack).
```

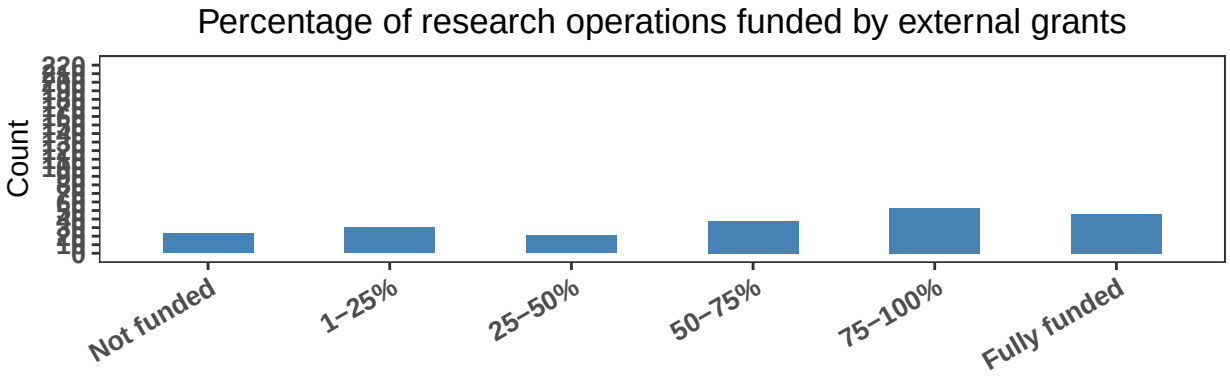
```
## Warning: Removed 1 rows containing missing values (position_stack).
```

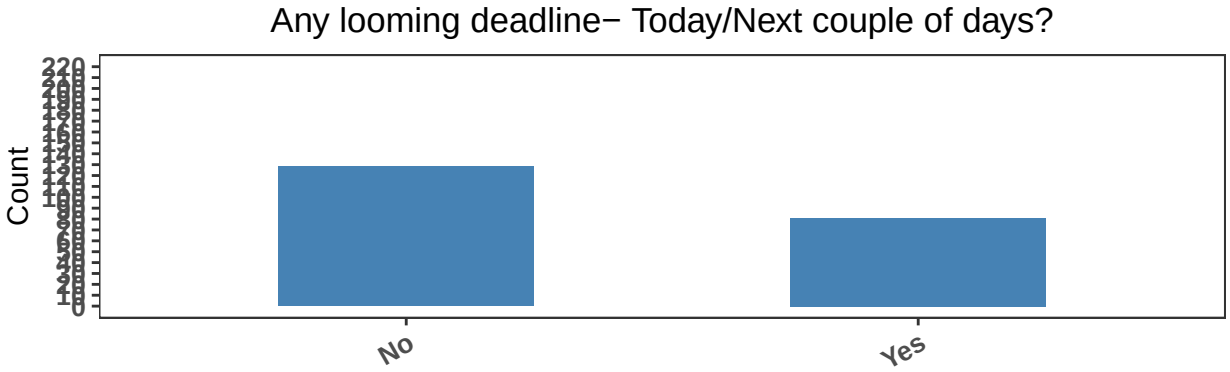
```
## Warning: Removed 1 rows containing missing values (position_stack).
```

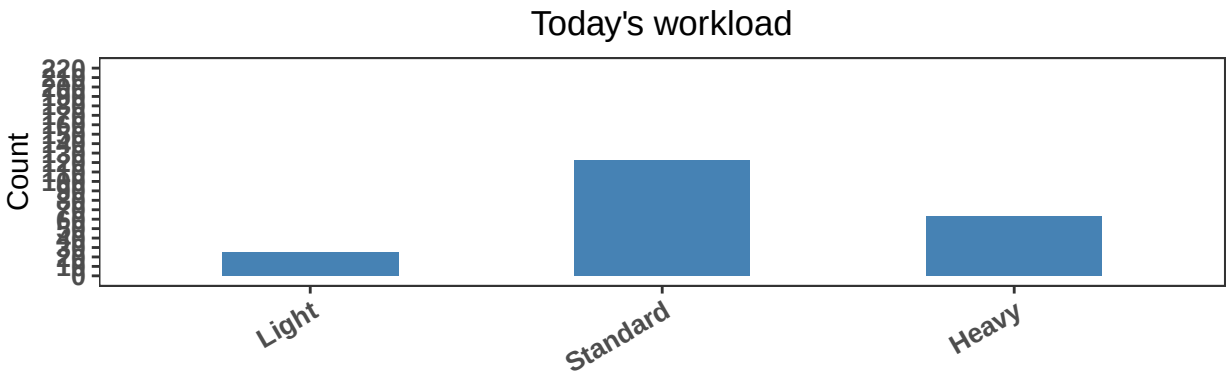
```
## Warning: Removed 1 rows containing missing values (position_stack).
```

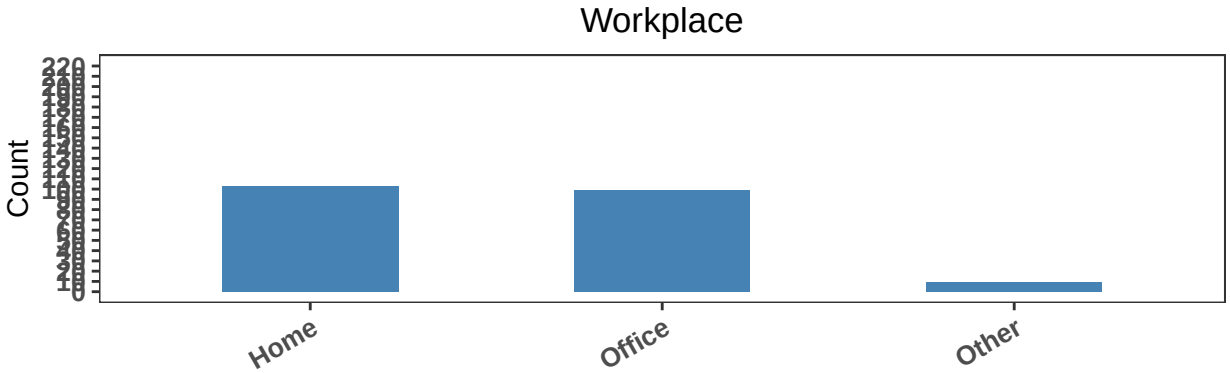


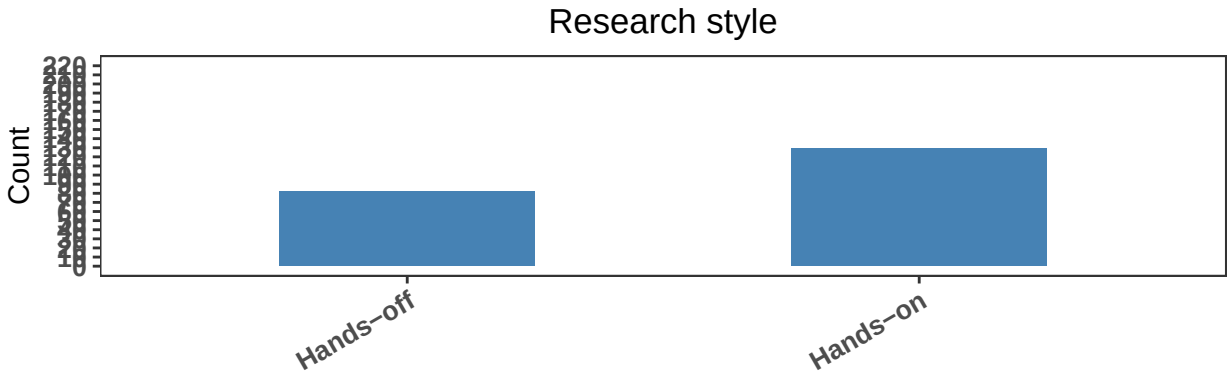


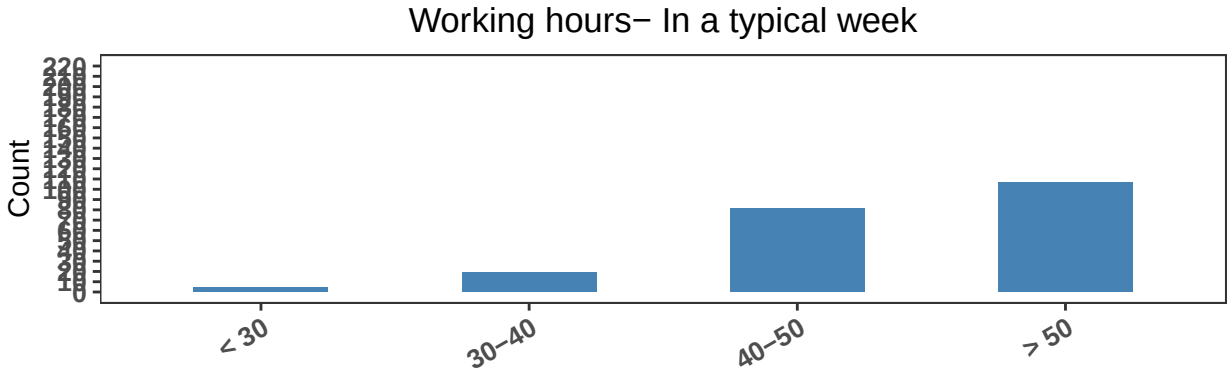

Percentage of research operations funded by external grants
Count
Not funded
1−25%
25−50%
50−75%
75−100%
Fully funded

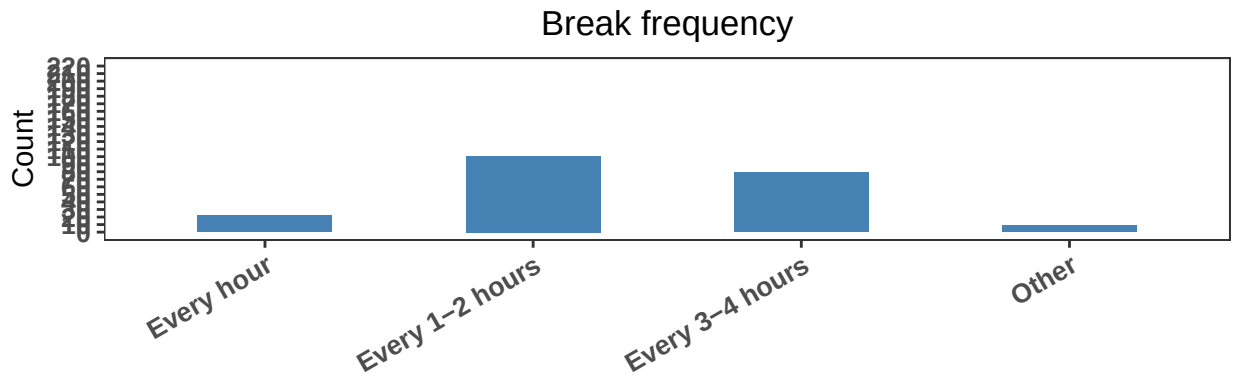

Any looming deadline− Today/Next couple of days?
Count
No
Yes

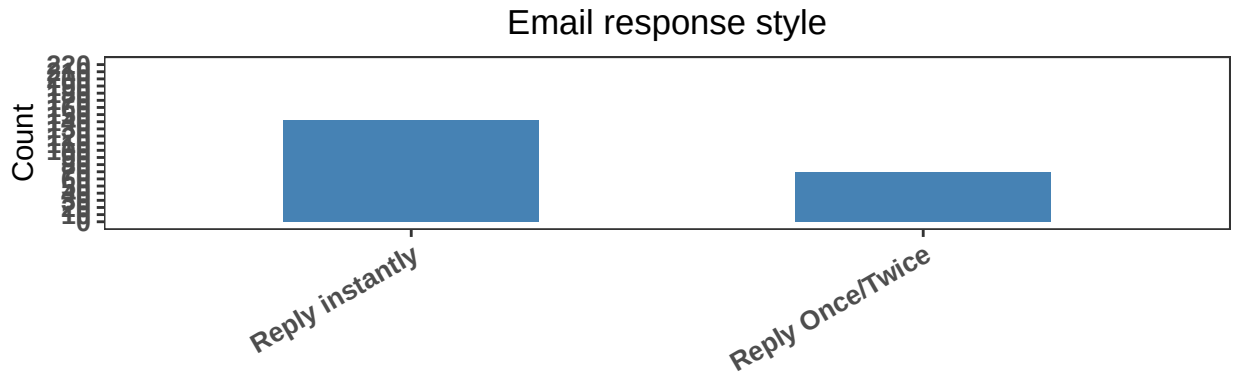

Today's workload
Count
Light
Standard
Heavy

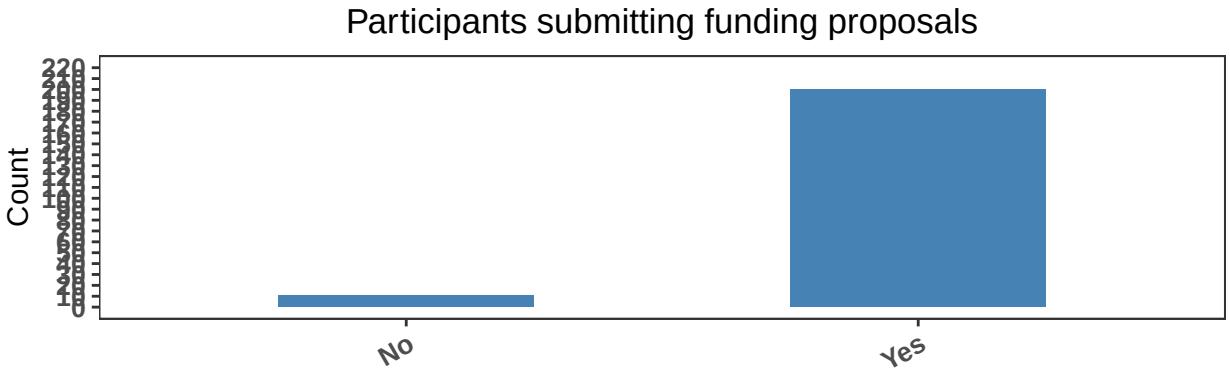

Workplace
Count
Home
Office
Other

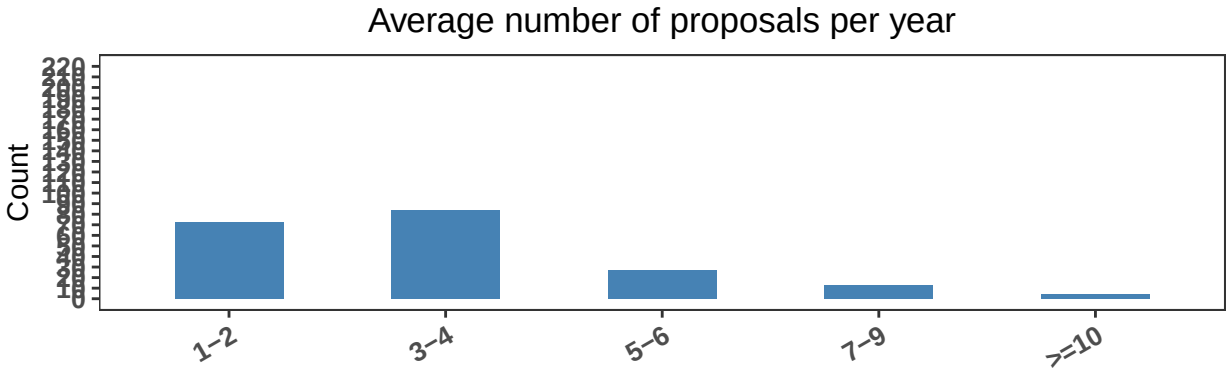

Research style
Count
Hands−off
Hands−on

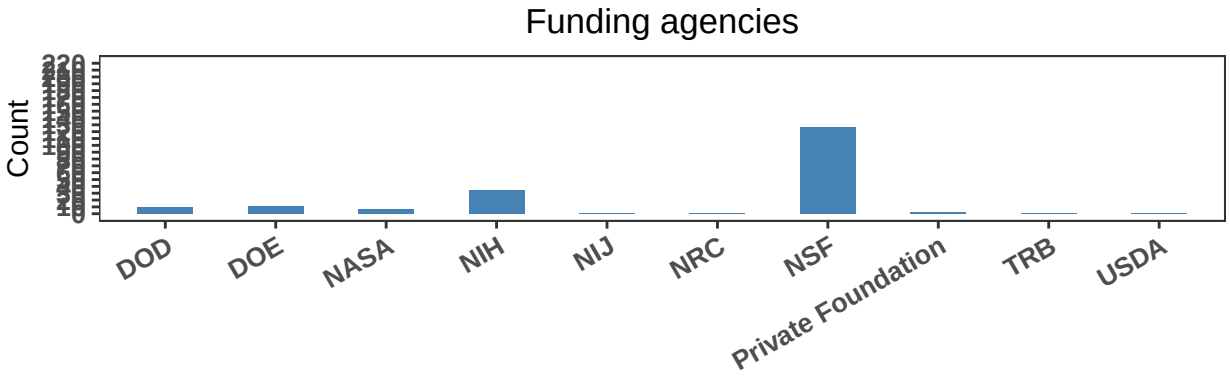

Working hours− In a typical week
Count
< 30
30−40
40−50
> 50

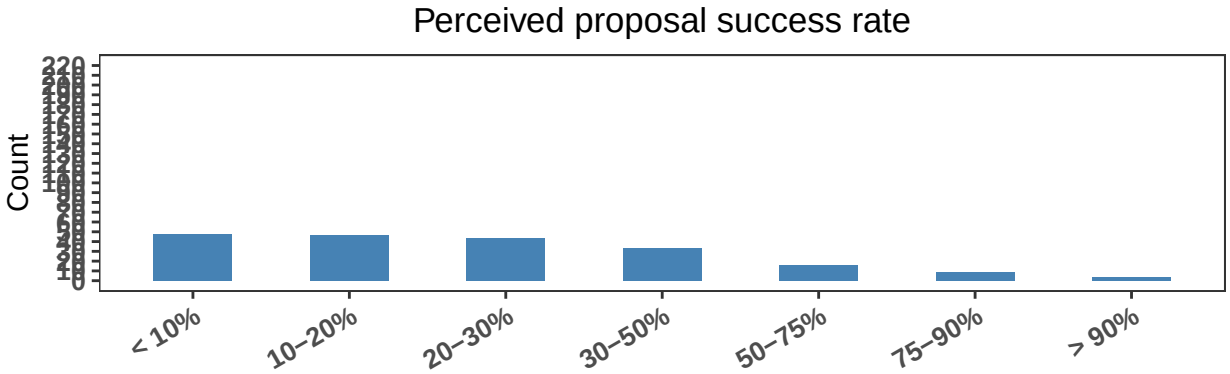

Break frequency
Count
Every hour
Every 1–2 hours
Every 3–4 hours
Other

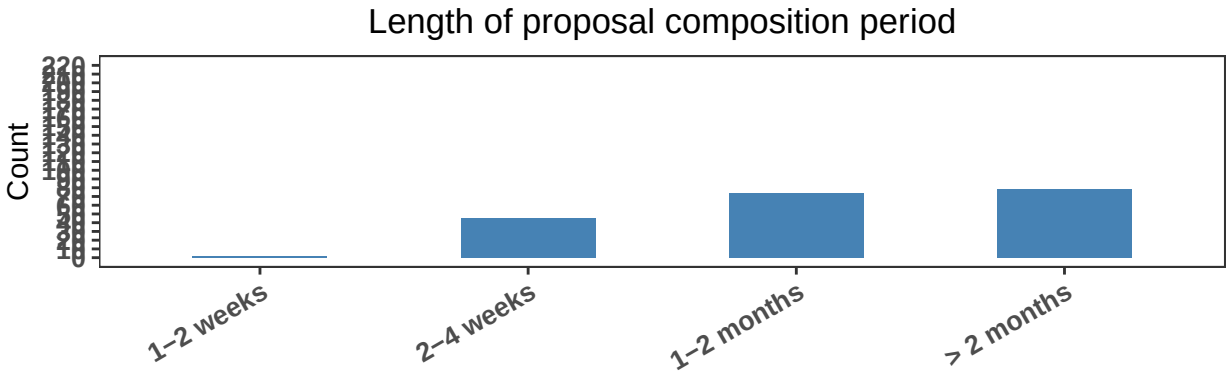

Email response style
Count
Reply instantly
Reply Once/Twice

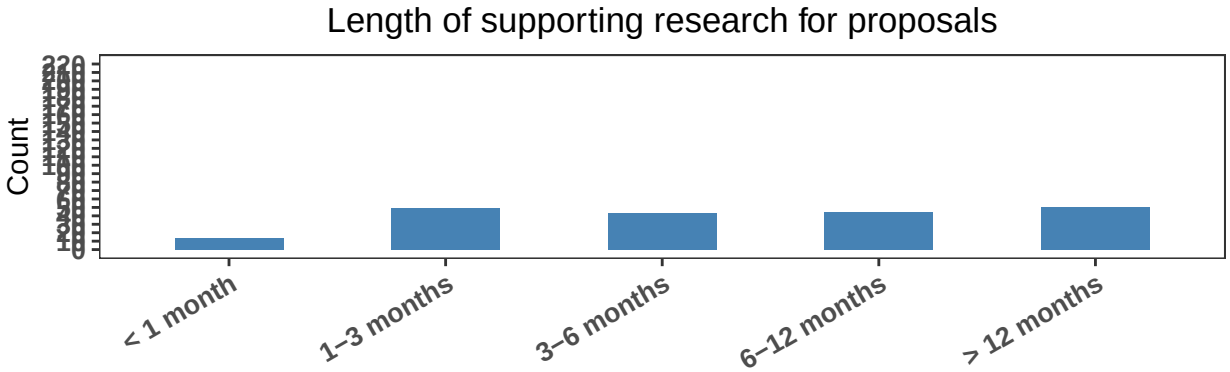

Participants submitting funding proposals
Count
No
Yes

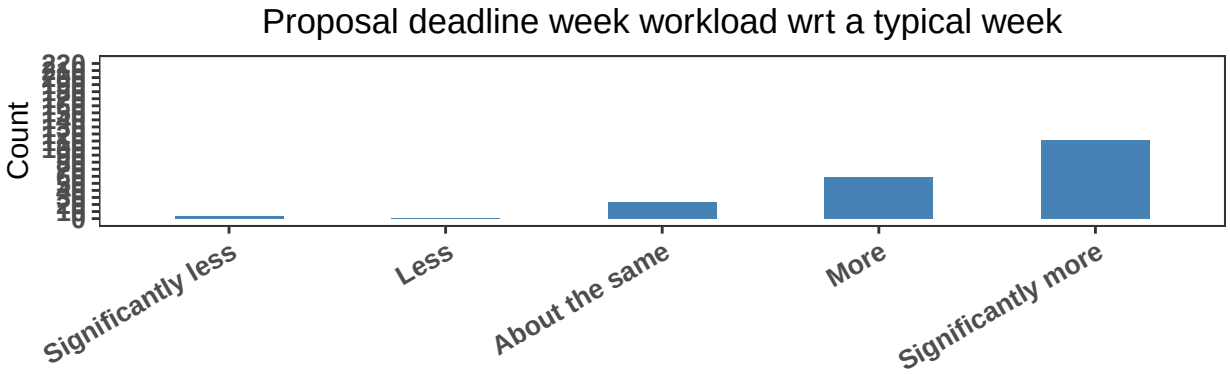

Average number of proposals per year
Count
1–2
3–4
5–6
7–9
>=10

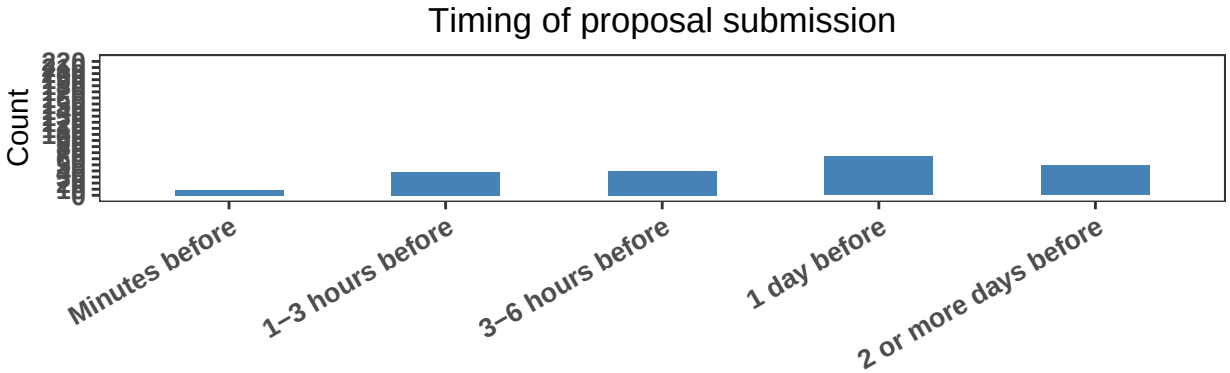

Funding agencies
Count
DOD
DOE
NASA
NIH
NIJ
NRC
NSF
Private Foundation
TRB
USDA

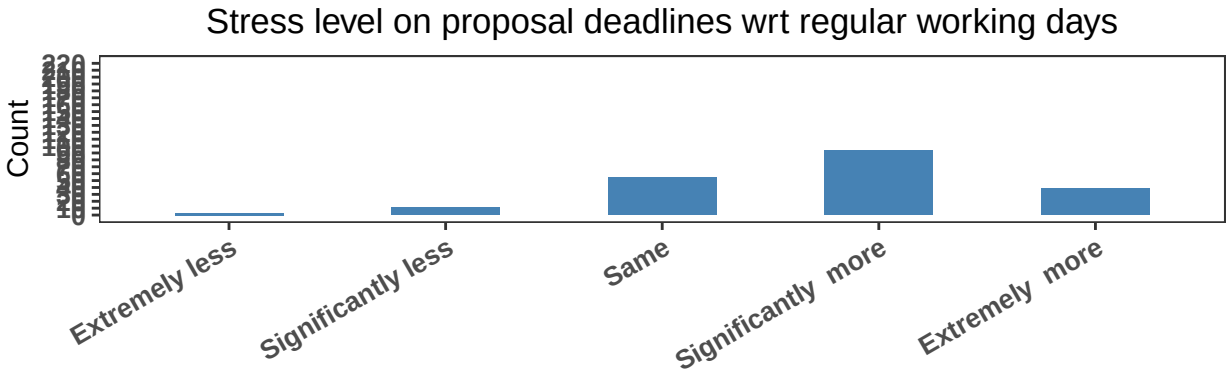

Perceived proposal success rate
Count
< 10%
10–20%
20–30%
30–50%
50–75%
75–90%
> 90%

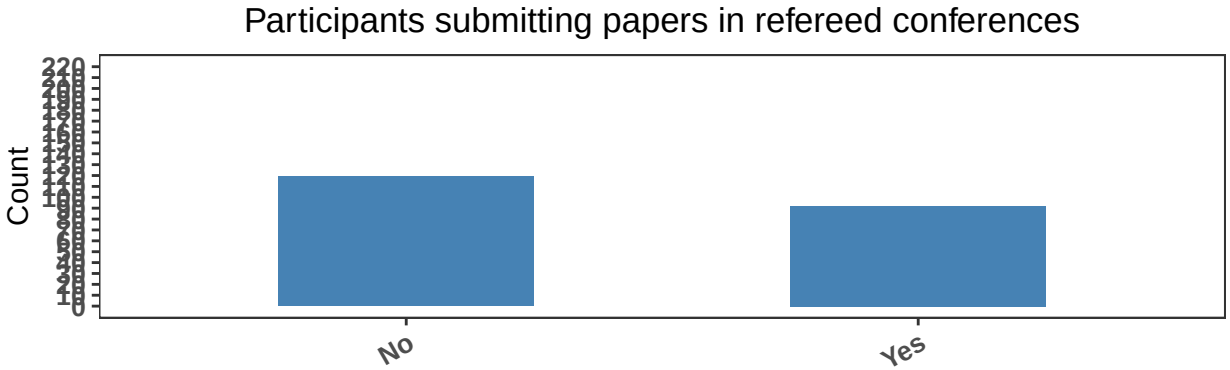

Length of proposal composition period
Count
1–2 weeks
2–4 weeks
1–2 months
> 2 months

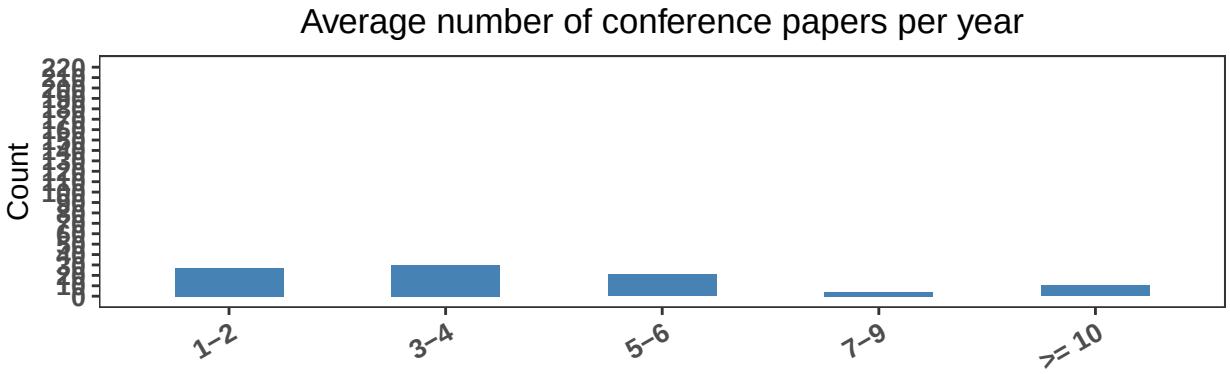

Length of supporting research for proposals
Count
< 1 month
1–3 months
3–6 months
6–12 months
> 12 months

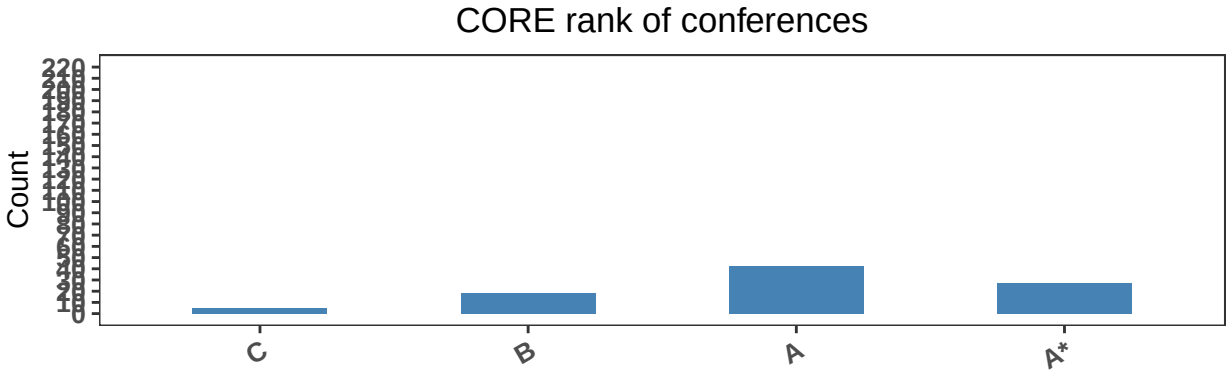

Proposal deadline week workload wrt a typical week
Count
Significantly less
Less
About the same
More
Significantly more

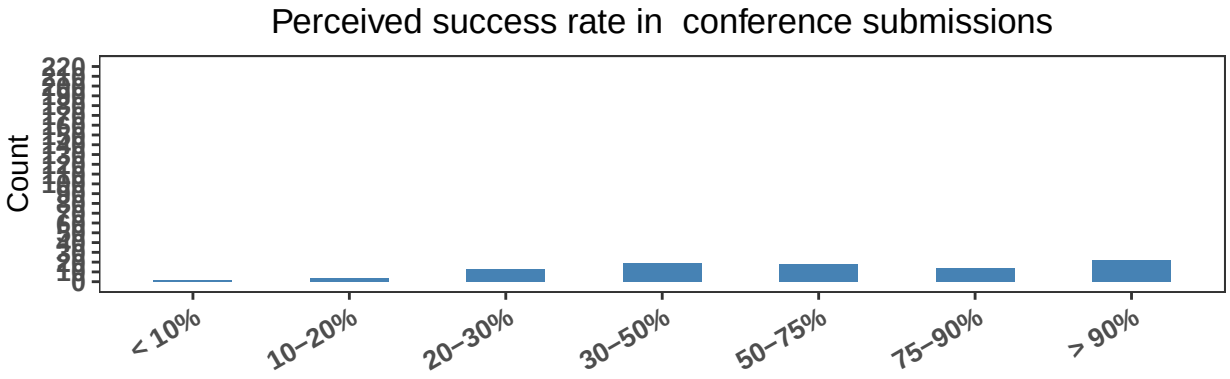

Timing of proposal submission
Count
Minutes before
1–3 hours before
3–6 hours before
1 day before
2 or more days before

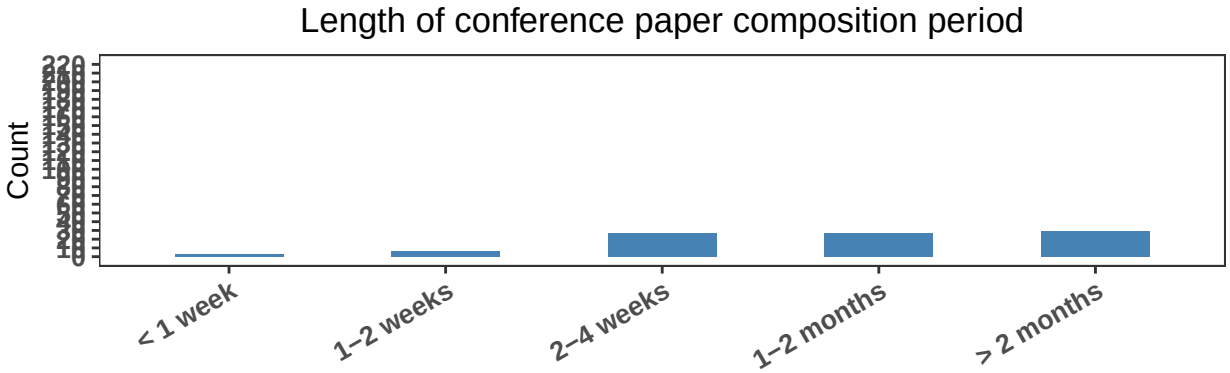

Stress level on proposal deadlines wrt regular working days
Count
Extremely less
Significantly less
Same
Significantly more
Extremely more

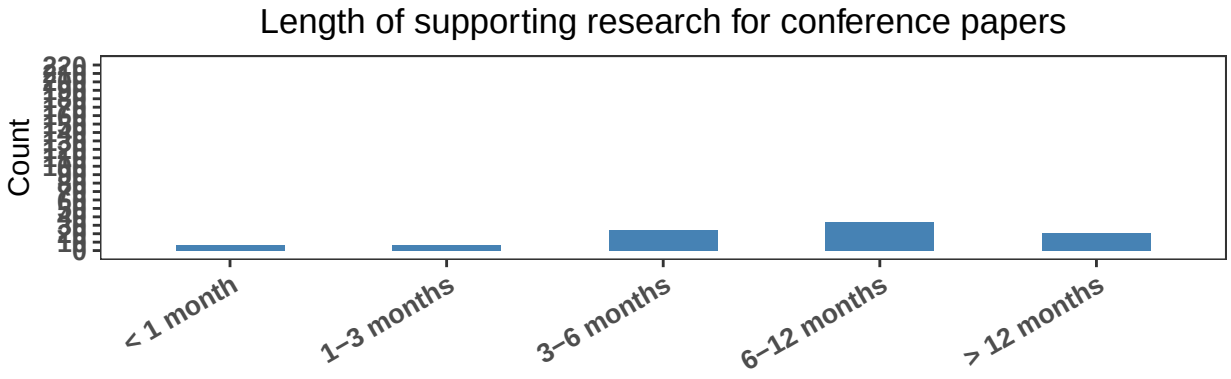

Participants submitting papers in refereed conferences
Count
No
Yes

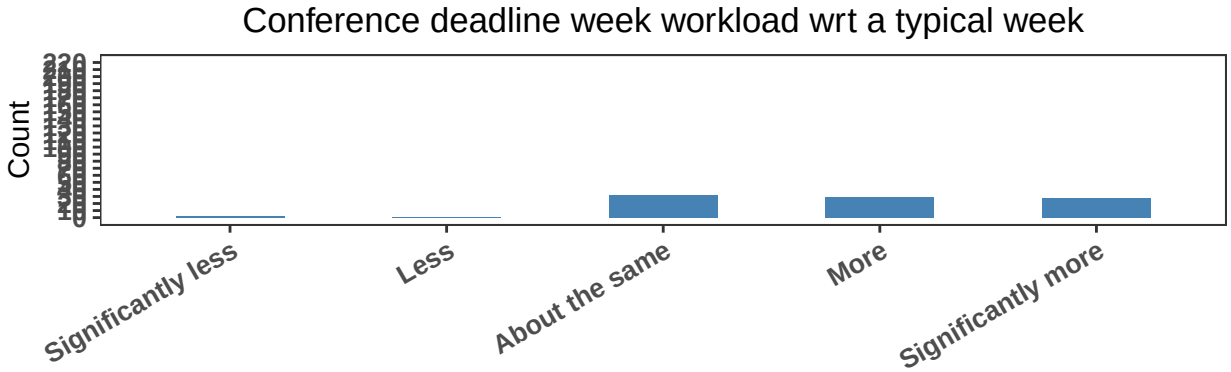

Average number of conference papers per year
Count
1–2
3–4
5–6
7–9
>= 10

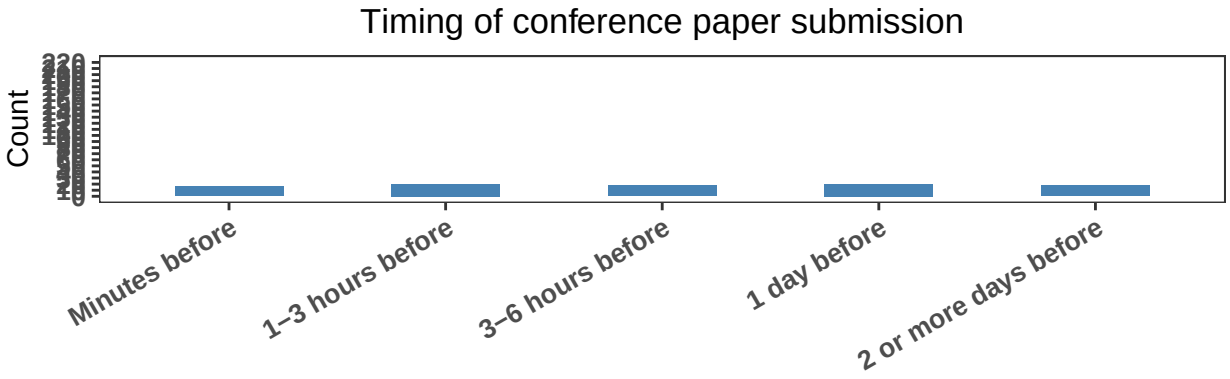

CORE rank of conferences
Count
C
B
A
A*

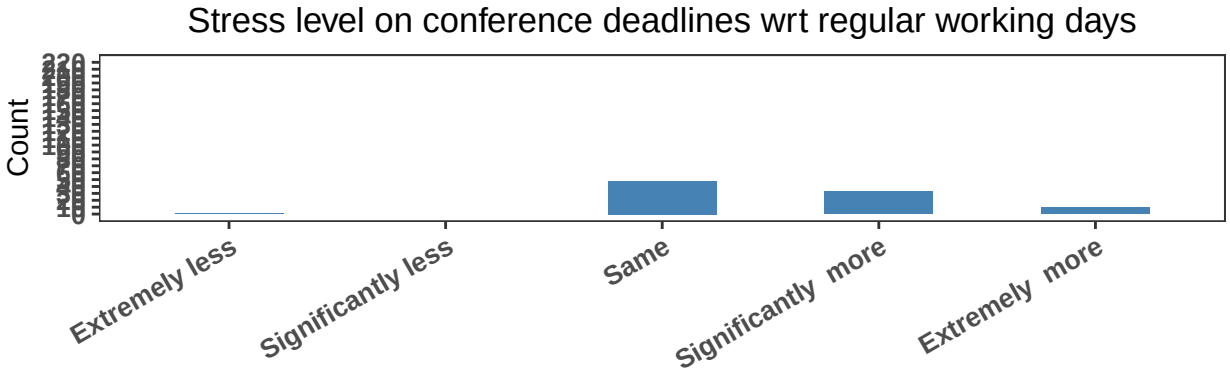

Perceived success rate in conference submissions
Count
< 10%
10–20%
20–30%
30–50%
50–75%
75–90%
> 90%


Length of conference paper composition period
Count
< 1 week
1–2 weeks
2–4 weeks
1–2 months
> 2 months


Length of supporting research for conference papers
Count
< 1 month
1–3 months
3–6 months
6–12 months
> 12 months


Conference deadline week workload wrt a typical week
Count
Significantly less
Less
About the same
More
Significantly more


Timing of conference paper submission
Count
Minutes before
1–3 hours before
3–6 hours before
1 day before
2 or more days before


Stress level on conference deadlines wrt regular working days
Count
Extremely less
Significantly less
Same
Significantly more
Extremely more