Core Questions

```
count(Core_Questions$Break)
##
                   x freq
## 1 Every 1-2 hours 142
## 2 Every 3-4 hours 130
         Every hour
## 4
                       17
               Other
for(i in 1:nrow(Core_Questions)){
  #######-----Salary depends of external grants-----##################
  if (Core_Questions$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$Email[i]="Reply Once/Twice"
   Core Questions$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
                    54
## 2 Three months 254
## 3
     Two months
```

```
levels(factor(Core_Questions$State))
## [1] "Alabama"
                      "Arizona"
                                     "California"
                                                    "Colorado"
## [5] "Connecticut"
                      "Florida"
                                     "Georgia"
                                                    "Illinois"
                                                    "Nevada"
## [9] "Maryland"
                      "Michigan"
                                     "Minnesota"
## [13] "New Mexico"
                      "Ohio"
                                     "Pennsylvania" "Tennessee"
## [17] "Texas"
                      "Virginia"
                                     "Wisconsin"
levels(factor(Core_Questions$S_D_E))
## [1] "Other"
                     "Three months" "Two months"
levels(factor(Core_Questions$RO_F_EG))
## [1] "1-25%"
                     "25-50%"
                                    "50-75%"
                                                   "75-100%"
## [5] "Fully funded" "Not funded"
levels(factor(Core_Questions$Deadline_today))
## [1] ""
          "No" "Yes"
levels(factor(Core_Questions$Workload_today))
## [1] ""
                  "Heavy"
                            "Light"
                                       "Standard"
levels(factor(Core_Questions$Workplace))
## [1] "Home"
               "Office" "Other"
 levels(factor(Core_Questions$R_Style))
## [1] "Hands-off" "Hands-on"
levels(factor(Core_Questions$TW_W_H))
## [1] "< 30" "> 50" "30-40" "40-50"
levels(factor(Core_Questions$Break))
## [1] "Every 1-2 hours" "Every 3-4 hours" "Every hour"
                                                            "Other"
levels(factor(Core_Questions$Email))
## [1] "Reply instantly" "Reply Once/Twice"
```

```
levels(factor(Core_Questions\finding_proposal))
## [1] "No" "Yes"
levels(factor(Core_Questions$A_N_Pro))
## [1] ""
              ">=10" "1-2" "3-4" "5-6" "7-9"
levels(factor(Core_Questions\finding_agency))
   [1] ""
##
   [2] "DOD"
##
   [3] "DOE"
##
  [4] "DoT"
##
   [5] "Equally distributed across NSF, NASA, DOD, DHS"
    [6] "NASA"
##
##
   [7] "NIH"
   [8] "NIJ"
## [9] "NIST"
## [10] "NRC"
## [11] "NSF"
## [12] "Oil industry"
## [13] "Petroleum Research Fund (ACS), private industry"
## [14] "Philanthropic foundations"
## [15] "private"
## [16] "Private Foundation"
## [17] "Private Industry"
## [18] "Private Investors in real estate- grants though universite foundation"
## [19] "SENACYT"
## [20] "State funding sources "
## [21] "State of CA"
## [22] "State of California"
## [23] "Texas Department of Transportation"
## [24] "TRB"
## [25] "TxDOT, NCHRP"
## [26] "USDA"
levels(factor(Core_Questions$Success))
## [1] ""
                "< 10%" "> 90%" "10-20%" "20-30%" "30-50%" "50-75%" "75-90%"
levels(factor(Core_Questions$Com_Proposal))
## [1] ""
                    "< 1 week" "> 2 months" "1-2 months" "1-2 weeks"
## [6] "2-4 weeks"
levels(factor(Core_Questions$L_Of_SR))
                     "< 1 month" "> 12 months" "1-3 months" "3-6 months"
## [1] ""
## [6] "6-12 months"
```

```
levels(factor(Core_Questions$W_WB_PD))
## [1] ""
                           "About the same"
                                              "Less"
## [4] "More"
                          "Significantly less" "Significantly more"
levels(factor(Core_Questions$Submit_P))
## [1] "1-3 hours before"
                            "1 day before"
                                                    "2 or more days before"
## [4] "3-6 hours before" "Minutes before"
levels(factor(Core_Questions$Stress_PD))
## [1] ""
                            "Extremely more"
                                                "Extremely less"
## [4] "Same"
                            "Significantly more" "Significantly less"
levels(factor(Core_Questions$refereed_conference))
## [1] "No" "Yes"
levels(factor(Core_Questions$A_N_Conf_Pap))
## [1] ""
            ">= 10" "1-2" "3-4" "5-6" "7-9"
levels(factor(Core_Questions$core_rank))
## [1] "" "A" "A*" "B" "C"
levels(factor(Core_Questions$if_you_submit_manuscripts))
## [1] ""     "< 10%"  "> 90%"  "10-20%" "20-30%" "30-50%" "50-75%" "75-90%"
levels(factor(Core_Questions\frac{\$}{} far_in_advance_do_you))
## [1] ""
                  "< 1 week" "> 2 months" "1-2 months" "1-2 weeks"
## [6] "2-4 weeks"
levels(factor(Core_Questions$length_of_supp))
## [1] ""
                    "< 1 month" "> 12 months" "1-3 months" "3-6 months"
## [6] "6-12 months"
levels(factor(Core_Questions$in_the_week_leading_to_a_c))
## [1] ""
                           "About the same"
                                             "Less"
## [4] "More"
                          "Significantly less" "Significantly more"
```

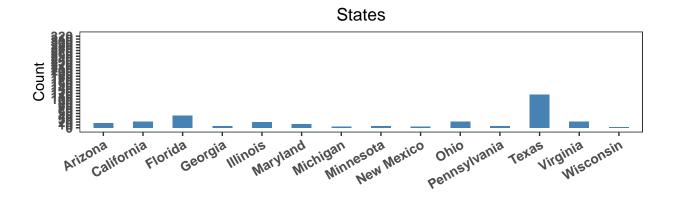
```
levels(factor(Core_Questions$you_typically_subm))
## [1] "1-3 hours before"
                                "1 day before"
                                                         "2 or more days before"
## [4] "3-6 hours before"
                                "Minutes before"
levels(factor(Core_Questions$ss_level_in_a_fundi))
## [1] ""
                              "Extremely more"
                                                     "Extremely less"
## [4] "Same"
                              "Significantly more"
 count(Core_Questions$funding_agency)
##
                                                                            Х
## 1
## 2
                                                                          DOD
## 3
                                                                          DOE
## 4
## 5
                              Equally distributed across NSF, NASA, DOD, DHS
## 6
                                                                         NASA
## 7
                                                                          NIH
## 8
                                                                          NIJ
## 9
                                                                         NIST
## 10
                                                                          NRC
## 11
                                                                          NSF
## 12
                                                                 Oil industry
## 13
                            Petroleum Research Fund (ACS), private industry
## 14
                                                    Philanthropic foundations
## 15
                                                                      private
## 16
                                                           Private Foundation
## 17
                                                             Private Industry
## 18 Private Investors in real estate- grants though universite foundation
## 19
## 20
                                                       State funding sources
## 21
                                                                  State of CA
## 22
                                                          State of California
## 23
                                           Texas Department of Transportaton
## 24
## 25
                                                                 TxDOT, NCHRP
## 26
                                                                         USDA
##
      freq
## 1
        16
## 2
        16
## 3
        18
## 4
         1
## 5
         1
## 6
        10
## 7
        55
## 8
         2
## 9
## 10
         1
## 11
       183
```

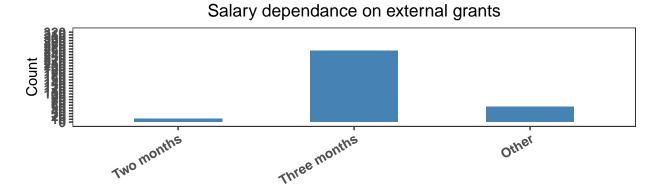
12

1

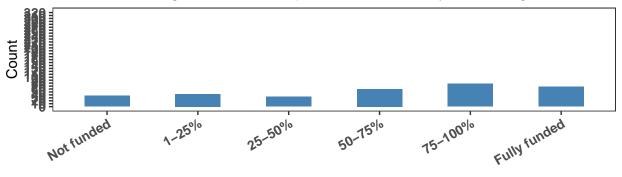
```
## 13
         1
## 14
         1
## 15
## 16
         2
## 17
         1
## 18
         1
## 19
         1
## 20
         1
## 21
         1
## 22
         1
## 23
         1
## 24
         1
## 25
         1
## 26
         1
# #####Test a single core questions
  temp <- count(Core_Questions$Workload_today)</pre>
   colnames(temp) <- c("item", "count")</pre>
#
   temp <- temp[!(temp$item == ""),]</pre>
\# 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 5 rows containing missing values (position_stack).
## Warning: Removed 15 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).

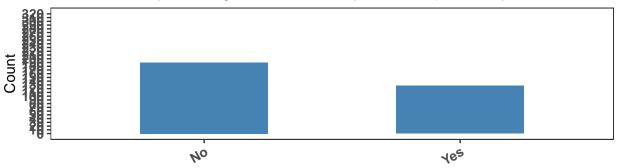


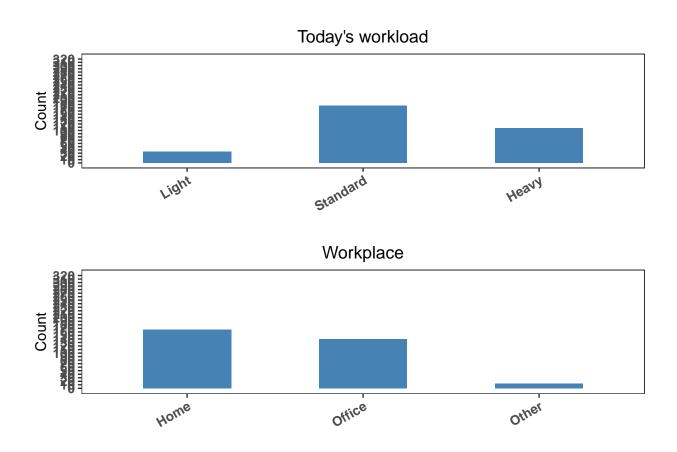


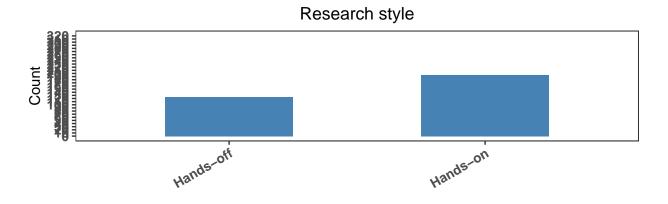
Percentage of research operations funded by external grants

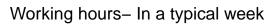


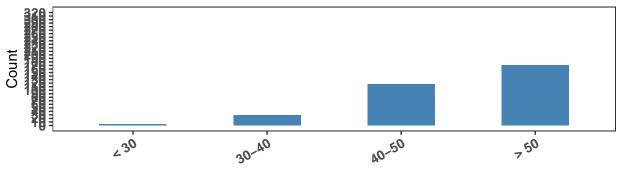
Any looming deadline- Today/Next couple of days?

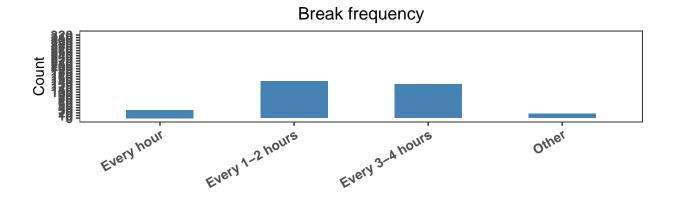


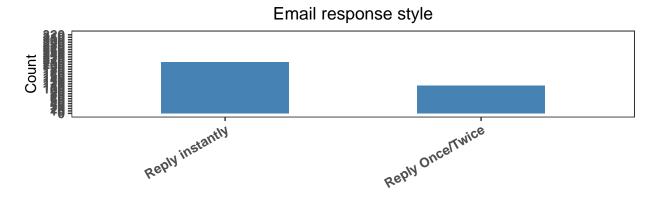




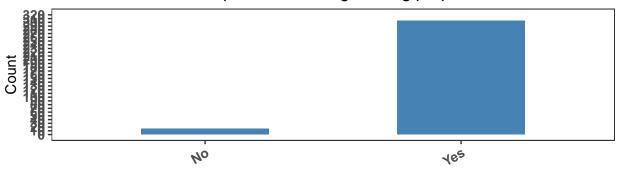




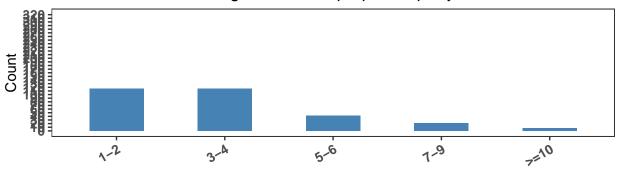


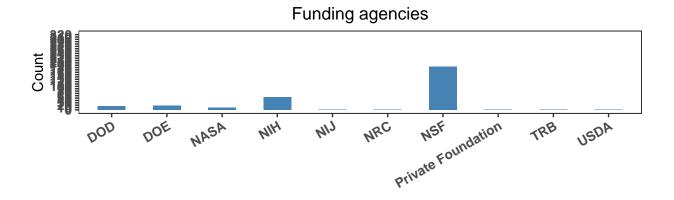


Participants submitting funding proposals

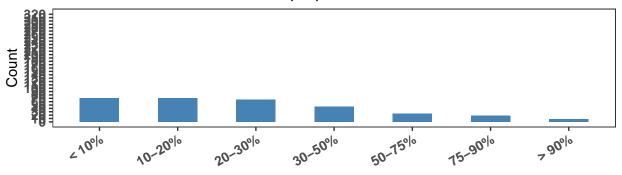


Average number of proposals per year

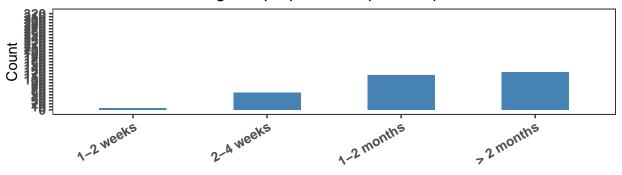




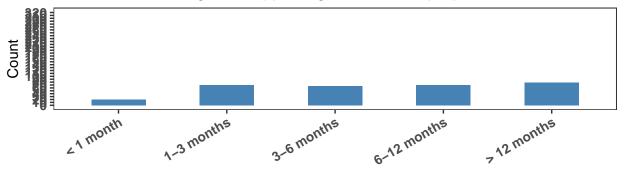
Perceived proposal success rate

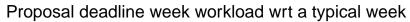


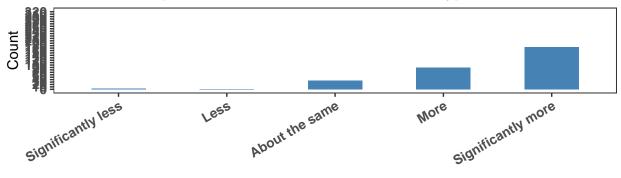
Length of proposal composition period



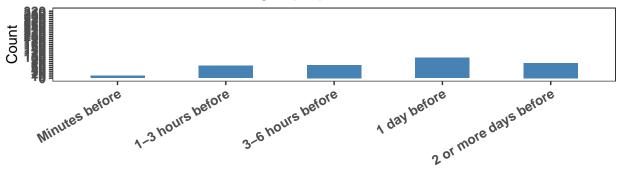
Length of supporting research for proposals



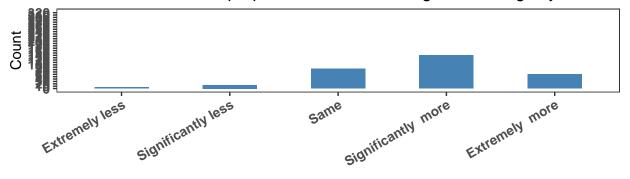




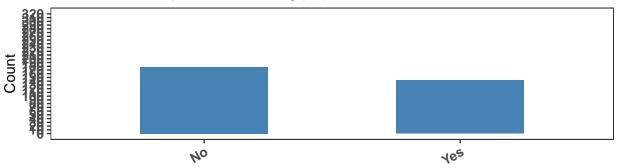
Timing of proposal submission



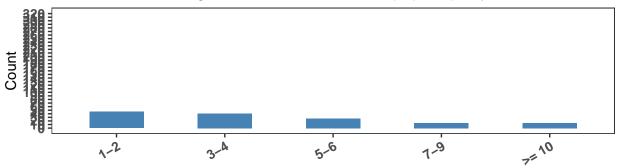
Stress level on proposal deadlines wrt regular working days



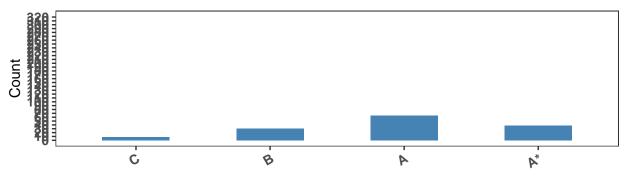
Participants submitting papers in refereed conferences



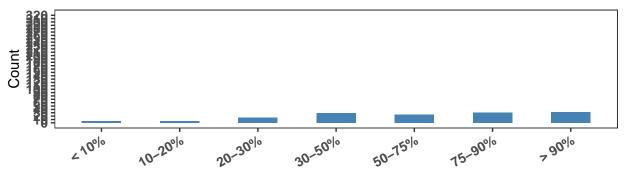




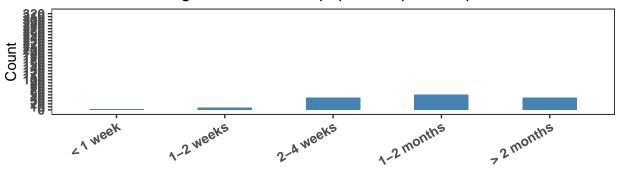
CORE rank of conferences



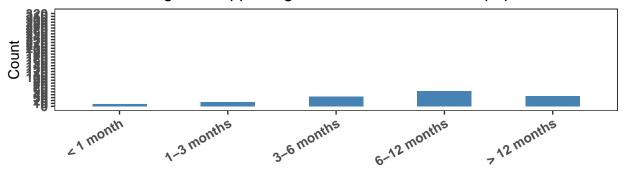
Perceived success rate in conference submissions



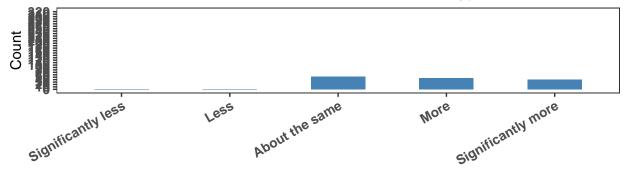
Length of conference paper composition period



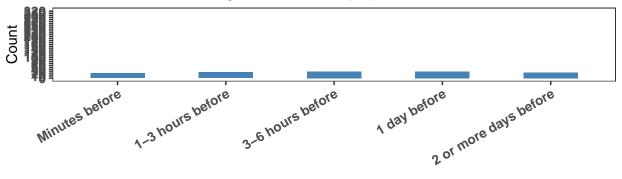
Length of supporting research for conference papers



Conference deadline week workload wrt a typical week



Timing of conference paper submission



Stress level on conference deadlines wrt regular working days

