

Fig 7: Motivations for contributing to OS

Overview

This notebook is for final tweaks to fig 7, which is from Q6 on motivations.

Import packages and utilities

```
project_root <- here::here() # requires that you be somewhere in the
# project directory (not above it)
# packages
suppressMessages(source(file.path(project_root, "scripts/packages.R")))
# functions and objects used across scripts
suppressMessages(source(file.path(project_root, "scripts/utils.R")))
```

Define functions

```
line_plot <- function(df, x_var, y_var, title) {
  p <- ggplot(df, aes(x = .data[[x_var]], y = .data[[y_var]])) +
    geom_point(size = 1) + # Adjust dot size
    scale_y_continuous(labels=scales::percent) +
    labs(
      title = title
    ) +
    theme(
      axis.title.x = element_blank(),
      axis.title.y = element_blank(),
      axis.text.x = element_text(angle = 60, vjust = 0.6, size = 6),
```

```

axis.text.y = element_text(size = 6),
axis.ticks.x = element_blank(),
axis.ticks.y = element_blank(),
legend.title = element_blank(),
plot.title = element_text(
  hjust = 0,
  face = "bold",
  size = 7,
  margin = margin(b = 5)
),
plot.margin = unit(c(0.3, 0.3, 0.3, 0.9), "cm"),
panel.grid = element_line(linetype = "solid", color = "gray90"),
panel.background = element_blank()
)
return(p)
}

```

Load data

```

basic_data <- read.csv(
  file.path(
    DATA_PATH,
    "data_for_plots",
    "motivations_basic_bar.tsv"
  ),
  stringsAsFactors = TRUE,
  sep = "\t"
)

it_acad_data <- read.csv(
  file.path(
    DATA_PATH,
    "data_for_plots",
    "motivations_it_acad.tsv"
  ),
  stringsAsFactors = TRUE,
  sep = "\t"
)

```

```
skills_data <- read.csv(
  file.path(
    DATA_PATH,
    "data_for_plots",
    "motivations_skills.tsv"
  ),
  stringsAsFactors = TRUE,
  sep = "\t"
)
```

Order factor levels

```
basic_data <- basic_data %>%
  mutate(Motivation = fct_reorder(Motivation, Count, .desc = FALSE))

skills_data$job_category <- factor(skills_data$job_category,
  levels = c(
    "Undergraduate",
    "Grad Student",
    "Post-Doc",
    "Faculty"
  )
)
```

```
basic_plot <- basic_bar_chart(basic_data,
  x_var = "Motivation",
  y_var = "Count",
  title = "Reasons for Contributing to Open Source",
  horizontal = TRUE,
  show_bar_labels = TRUE,
  show_ticks_y = FALSE,
  color_index = 3,
  axis_title_size_x = 6,
  axis_title_size_y = 6,
  axis_text_size_x = 6,
  axis_text_size_y = 6,
  title_size = 7,
  label_size = 2,
  show_axis_title_x = TRUE,
  x_axis_title_margin_t = 5,
  show_axis_title_y = FALSE,
  show_grid = TRUE
)
```

```

)

it_acad_job_plot <- basic_bar_chart(it_acad_data,
  x_var = "role",
  y_var = "proportion_yes",
  title = "Percent of Respondents who said\n'Developing open source products'\nis part of my .",
  show_bar_labels = FALSE,
  show_ticks_y = FALSE,
  axis_title_size_x = 6,
  axis_title_size_y = 6,
  axis_text_size_x = 6,
  axis_text_size_y = 6,
  title_size = 7,
  label_size = 2,
  show_axis_title_y = FALSE,
  show_axis_title_x = FALSE,
  show_grid = TRUE,
  percent = TRUE,
  margin_vals = c(0.6, 0.3, 0.3, 0.3)
)

skills_plot <- line_plot(skills_data,
  x_var = "job_category",
  y_var = "Proportion",
  title = "Percent of Participants Motivated by\n'Desire to Improve Their Skills'"
)

# From the patchwork package
top_row <- basic_plot + plot_spacer() + plot_layout(widths = c(1.4, 0.6))
bottom_row <- skills_plot + it_acad_job_plot + plot_layout(widths = c(1, 1))

p_combined <- top_row / bottom_row

ggsave(
  filename = file.path(FIGURE_PATH, "fig7.tif"),
  plot = p_combined + plot_annotation(tag_levels = "A") & theme(plot.tag = element_text(size
  device = "tiff",
  width = 5.2, height = 5, units = "in",
  dpi = 310,
  compression = "none",
  bg = "white"
)

```