

# Medio CDMX

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```
file_list <- list.files(path = "./data", pattern = "*.csv", full.names = TRUE)

data <- file_list %>%
  set_names() %>%
  map_dfr(~ read_csv(.x) %>% mutate(filename = basename(.x)), .id = "categoria") %>% clean_names() %>%
  mutate(categoria = str_remove_all(categoria, './data/'))

## Rows: 6282 Columns: 11
## -- Column specification -----
## Delimiter: ","
## chr  (3): Nombre, Paso por Km, Velocidad Media
## dbl  (2): ...1, BIB
## time (6): Tiempo Oficial, Tiempo Chip, Split 5k, Split 10k, Split 15k, Split...
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
## Rows: 6212 Columns: 11
## -- Column specification -----
## Delimiter: ","
## chr  (3): Nombre, Paso por Km, Velocidad Media
## dbl  (2): ...1, BIB
## time (6): Tiempo Oficial, Tiempo Chip, Split 5k, Split 10k, Split 15k, Split...
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
## New names:

## Warning: One or more parsing issues, call 'problems()' on your data frame for details,
## e.g.:
##   dat <- vroom(...)
##   problems(dat)

## Rows: 2490 Columns: 11
## -- Column specification -----
## Delimiter: ","
## chr  (3): Nombre, Paso por Km, Velocidad Media
## dbl  (2): ...1, BIB
## time (6): Tiempo Oficial, Tiempo Chip, Split 5k, Split 10k, Split 15k, Split...
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

## Data wrangling (not the best practice to put it here but fully transparent with the code)

algunos tiempos no son validos, los limpiamos

```
# data <- read_csv('data/libre_varonil.csv')
#
#
# is_valid_time <- function(x) {
#   !is.na(parse_date_time(x, orders = c("HMS", "HM", "MS", "H", "M", "S")))
# }
#
# # Filter out rows with invalid 'Split 5k' entries and convert valid ones
# data %>%
#   filter(is_valid_time(`Split 5k`)) %>%
#   mutate(`Split 5k` = hms::as_hms(`Split 5k`)) %>%
#   write_csv('data/libre_varonil.csv')
```

## Procesamiento de datos

```
corrales <- tribble(~BLOQUE, ~MARGEN,
                    'ELITE',    0 ,
                    'ADIZERO',  0 ,
                    'AMARILLO', 5*60,
                    'VERDE',    15*60,
                    'AZUL',     40*60,
                    'NARANJA',  60*60)

data <- data %>% mutate(dif = tiempo_oficial - tiempo_chip,
                       corral_verdadero = case_when(
                         tiempo_chip < hms("01:20:00") ~ 'AMARILLO',
                         tiempo_chip >= hms("01:20:00") & tiempo_chip < hms("01:40:00") ~ 'VERDE',
                         tiempo_chip >= hms("01:40:00") & tiempo_chip < hms("02:00:00") ~ 'AZUL',
                         tiempo_chip >= hms("02:00:00") ~ 'NARANJA'
                       ),
                       corral_salida = case_when(
                         dif < 300 ~ 'NEGRO',
                         dif >= 300 & dif < 900 ~ 'AMARILLO',
                         dif >= 900 & dif < 2400 ~ 'VERDE',
                         dif >= 2400 & dif < 3600 ~ 'AZUL',
                         TRUE ~ 'NARANJA'
                       ))
```

quitamos NA's por los chips que pudieron haber fallado o la gente que no terminó

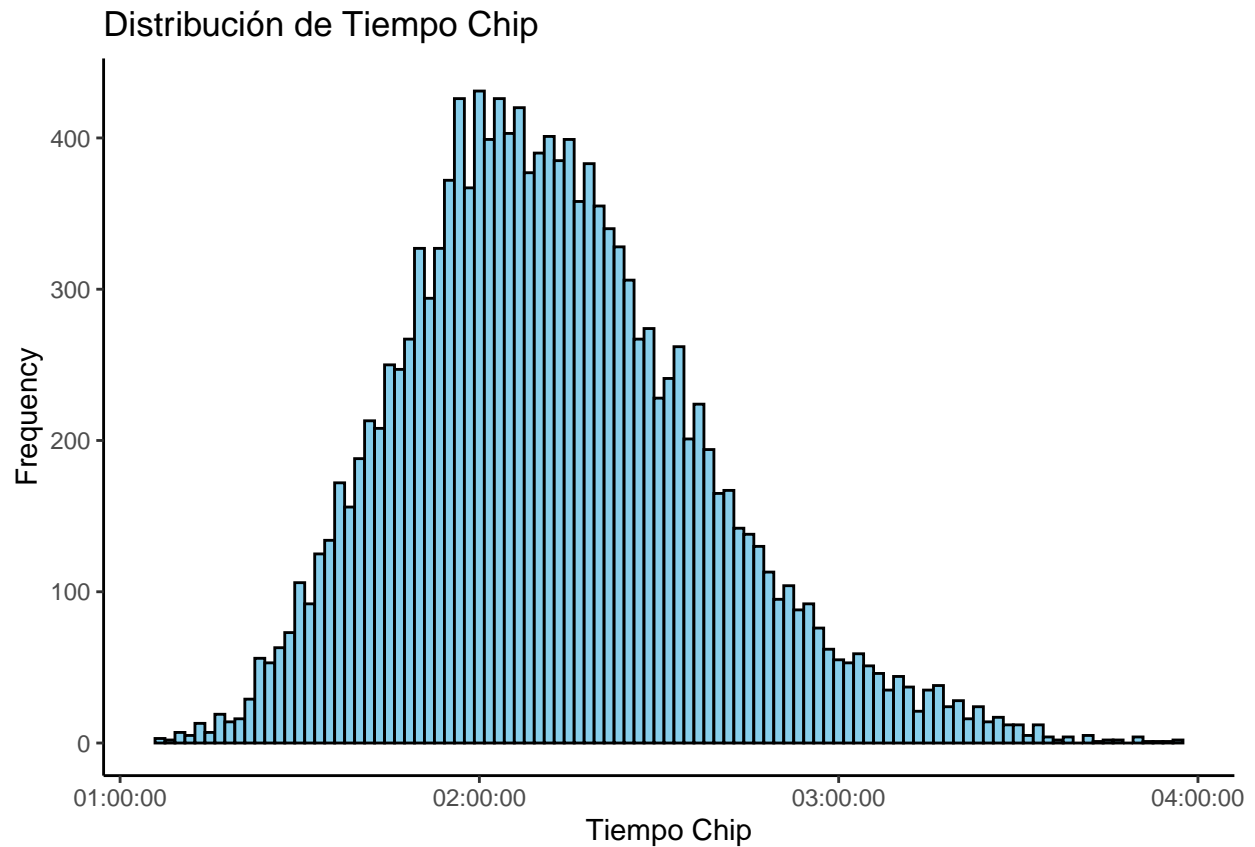
```
data <- data %>% drop_na()
```

## Análisis:

Nota: hay muchos errores de chip y la neta no lo quiero corregir, va más allá de este estudio.

## Distribución de data

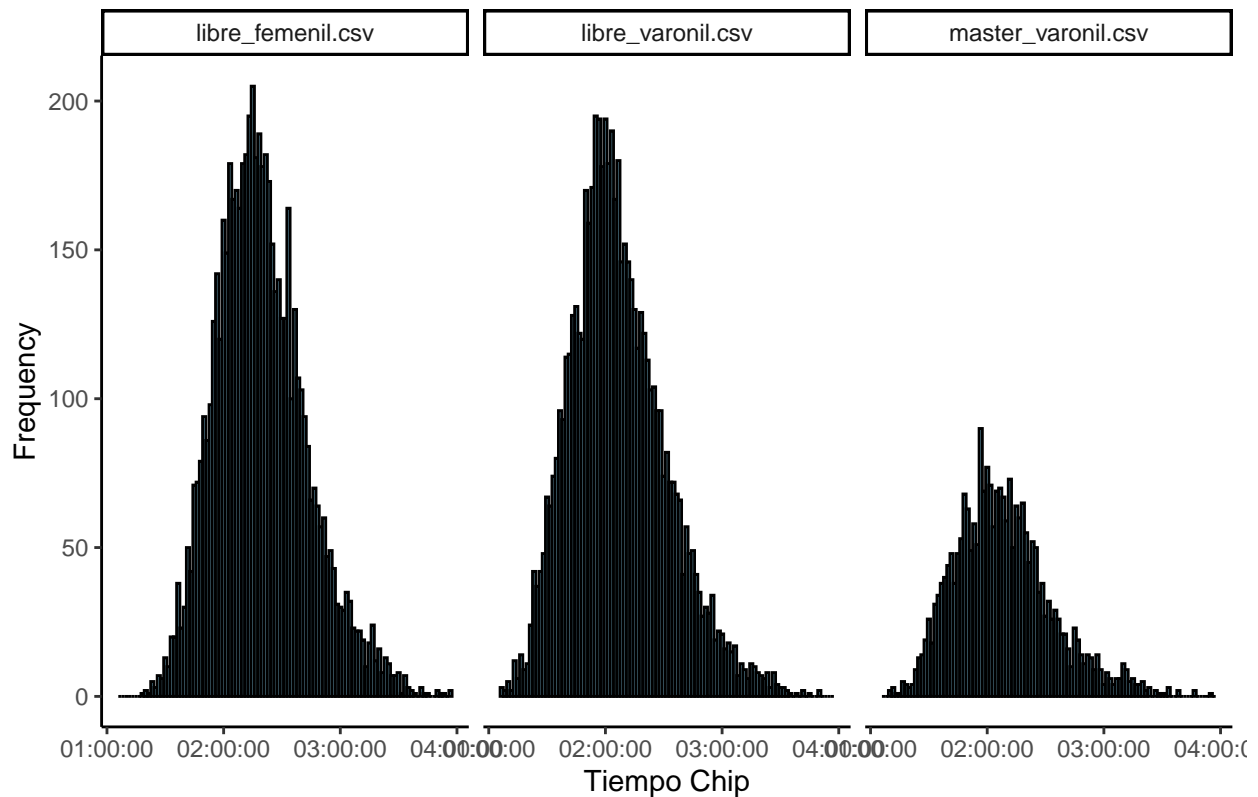
```
ggplot(data, aes(x = tiempo_chip)) +  
  geom_histogram(binwidth = 100, fill = "skyblue", color = "black") +  
  labs(title = "Distribución de Tiempo Chip",  
        x = "Tiempo Chip",  
        y = "Frequency") +  
  theme_classic()
```



## Por categoria

```
ggplot(data, aes(x = tiempo_chip)) +  
  geom_histogram(binwidth = 100, fill = "skyblue", color = "black") +  
  labs(title = "Distribución de Tiempo Chip",  
        x = "Tiempo Chip",  
        y = "Frequency") +  
  theme_classic() +  
  facet_wrap(~categoria)
```

## Distribución de Tiempo Chip



Supuestos: voy a ser una ciudadana que confía en la buena fé de la gente y asumiremos que los que salieron de Elite + Adizero si van ahí

```
data <- data %>% mutate(corral_verdadero = ifelse(corral_salida == 'NEGRO', 'NEGRO', corral_verdadero))
```

Plot

```
levels_order <- c("NEGRO", "AMARILLO", "VERDE", "AZUL", "NARANJA")

data_to_plot <- data %>%
  group_by(corral_verdadero, corral_salida) %>%
  count() %>%
  rownames_to_column('index') %>%
  pivot_longer(-c(index, n))

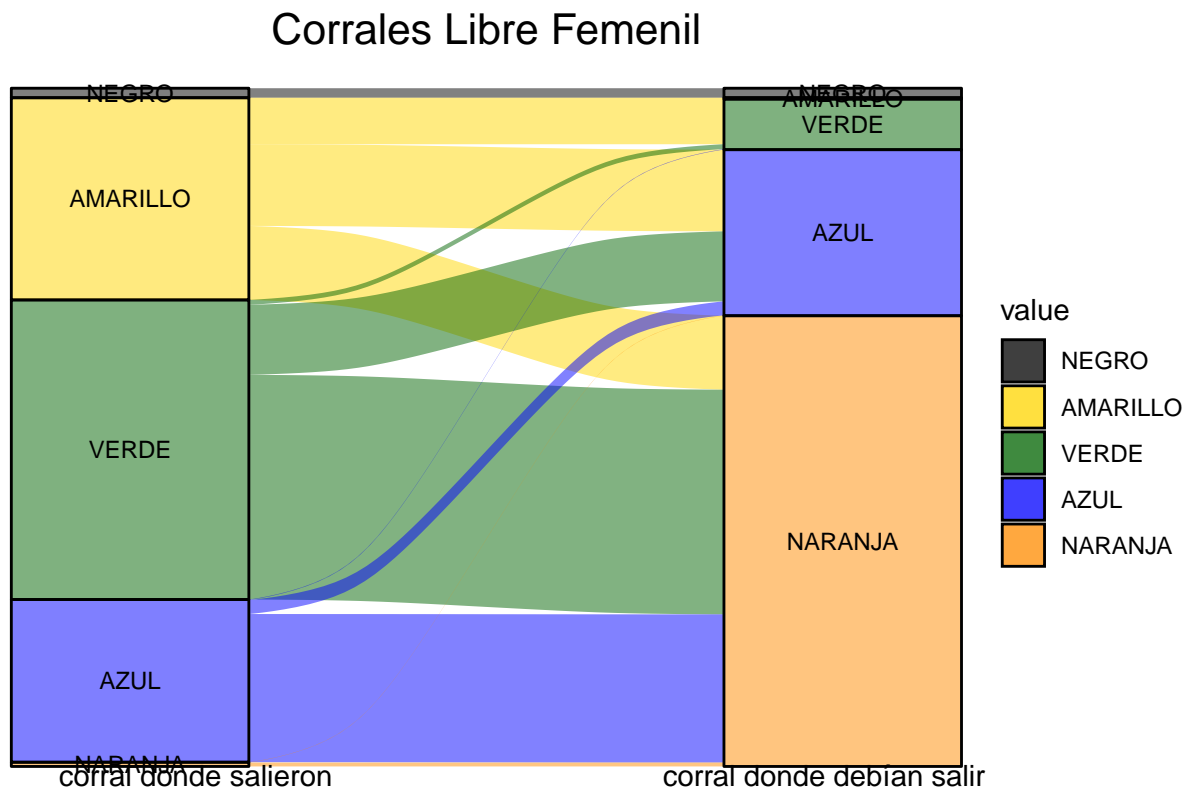
data_to_plot <- data_to_plot %>%
  mutate(
    value = factor(value, levels = levels_order)
  )

ggplot(data_to_plot,
  aes(x = name, stratum = value, alluvium = index,
    y = n,
    fill = value, label = value)) +
  scale_x_discrete(expand = c(.1, .1)) +
  scale_fill_manual(values = c("NEGRO" = "black", "AMARILLO" = "#FFD700", "VERDE" = "darkgreen", "AZUL" = "blue", "NARANJA" = "red"))
```

```

geom_flow(stat = "alluvium", lode.guidance = "frontback") +
geom_stratum(alpha = .5) +
geom_text(stat = "stratum", aes(label = after_stat(stratum)), size = 3) +
theme_void() +
theme(
  axis.title = element_blank(),
  axis.text = element_blank(),
  axis.ticks = element_blank(),
  panel.grid = element_blank(),
  plot.title = element_text(hjust = 0.5, size = 16),
  plot.background = element_rect(fill = "white", color = NA),
  plot.margin = margin(10, 10, 10, 10)
) +
ggtitle("Corrales Libre Femenil") +
annotate("text", x = .9, y = -200, label = "corral donde salieron", size = 4, hjust = 0) +
annotate("text", x = 2.2, y = -200, label = "corral donde debían salir", size = 4, hjust = 1)

```



```

data %>%
  group_by(corral_verdadero) %>%
  count() %>%
  ungroup() %>%
  mutate(total = sum(n),
         porc = n/total)

```

```
## # A tibble: 5 x 4
```

##	corral_verdadero	n	total	porc
##	<chr>	<int>	<int>	<dbl>
## 1	AMARILLO	28	14662	0.00191
## 2	AZUL	3590	14662	0.245
## 3	NARANJA	9744	14662	0.665
## 4	NEGRO	206	14662	0.0140
## 5	VERDE	1094	14662	0.0746