

## Assumptions & Challenges

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Exits > Entries & as a Result PMs > AMs

- People are less likely to stop when they are trying to catch a train
- People generally have more time to spare either after work or around lunch time rather than before work, when prompt arrival is at a premium
- Minor downside: Reliability of Exits versus Entries (Emergency Exits)
  - We summed the total Entries and Exits and found that there were about 25% more entries recorded than exits (which is strange because we believe most people entering the subway intend to leave)
  - We attributed the reason for the disparity to the widespread practice of exiting through emergency exits and therefore not recording their exit through the turnstiles
  - Many studies have been published that people are least likely to be altruistic when they are late
  - However, we found that this effect was fairly consistent over most stations, and for the high-traffic stations we were looking at, there were still more than enough recorded exits to justify our recommendations

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Challenges with the SCPs (Sums vs. Averages or Rates)

- After a deep dive, we noticed that there were many turnstiles that appeared to be out of order for long periods of time. As a result, it was imperative to sum over the SCP's of a station before even attempting to compare exits or entries, since any calculation that implicitly used the number of SCPs was compromised
- Besides the fact that most SCPs collected data every 4 hours most of the time, there was very little consistency otherwise. Different SCPs (even within the same station) often had different collection schedules. This presented a challenge when filtering, by time of day. Luckily, this too tended to even out over the biggest stations over our three month span.
- Also, as we saw in challenge 2, over 10% of SCP measurements weren't exactly 4 hours. As a result, any calculation of rate involved using the timestamps of consecutive measurements. If this wasn't enough of a challenge to begin with, the fact that all weekly data reset to the beginning of the week for each SCP introduced many Back to the Future scenarios.

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