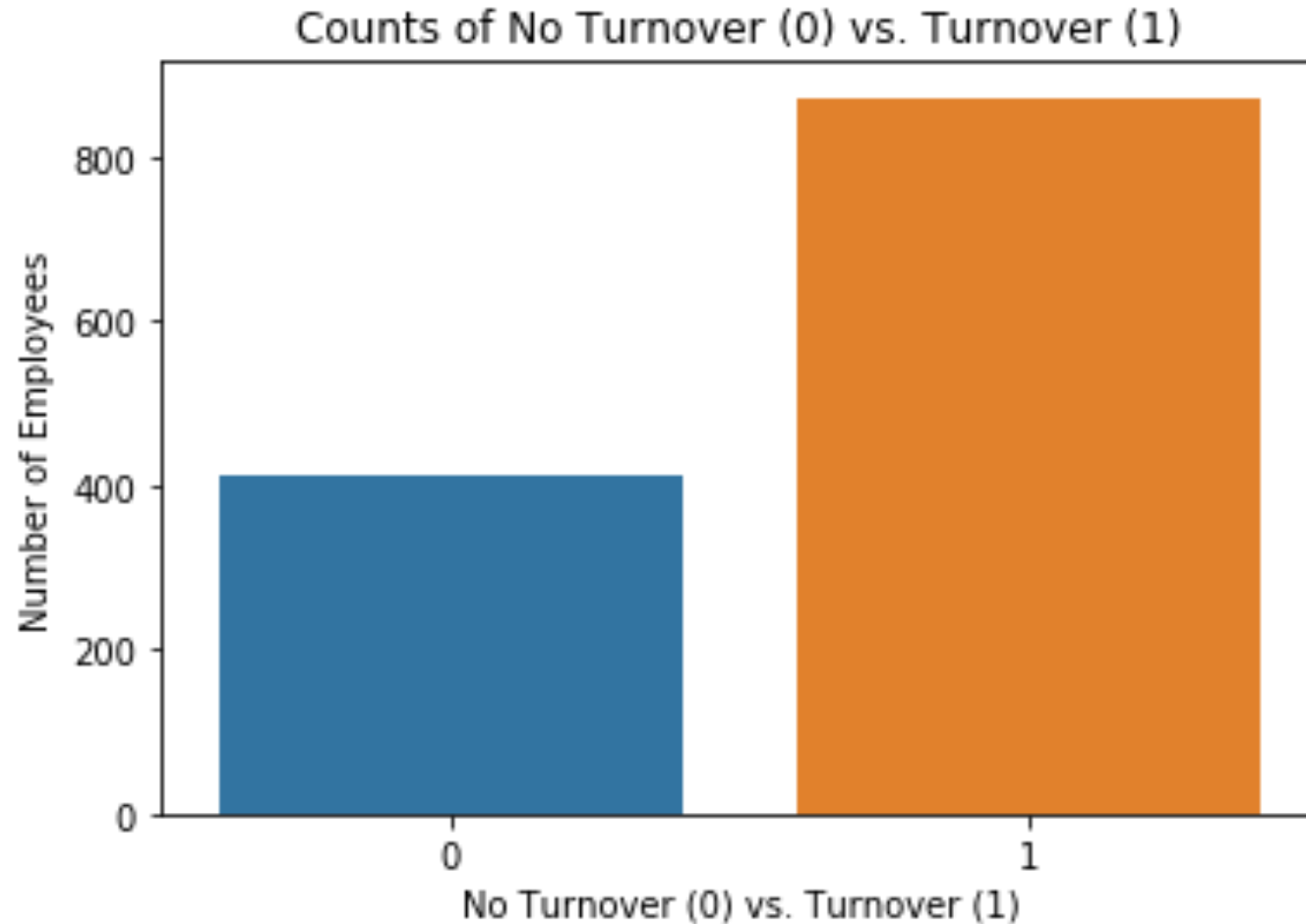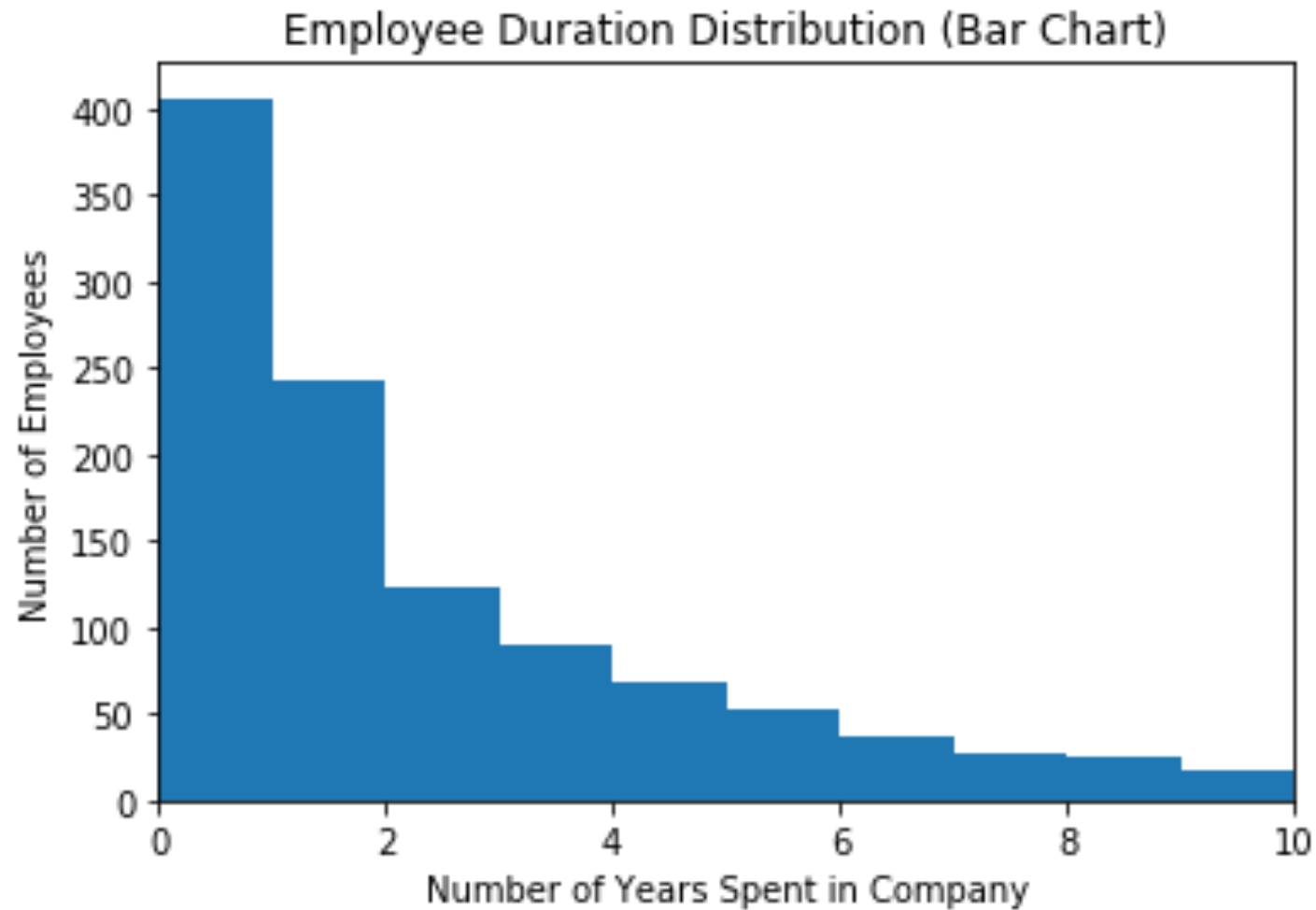# Friendly Home

Python Data Visualization & Survival Analysis
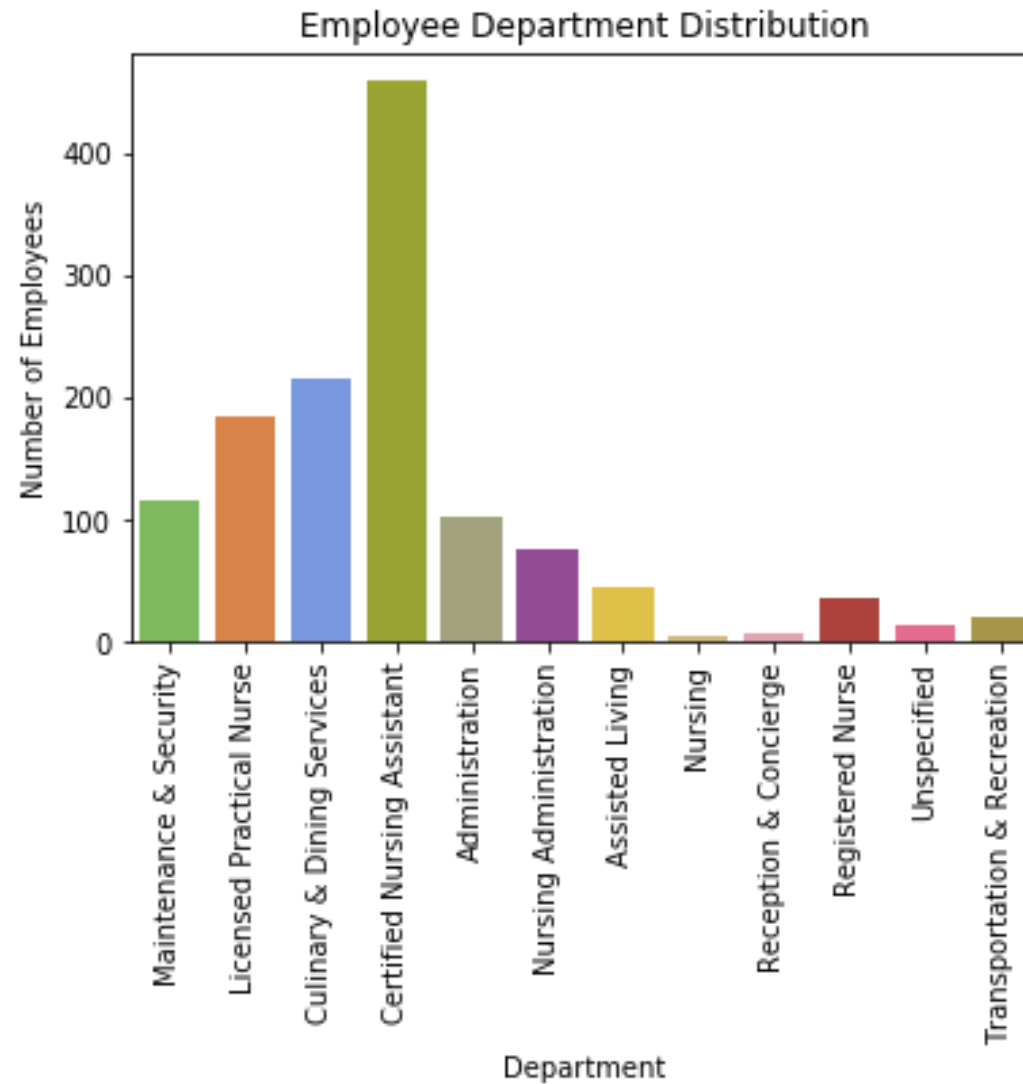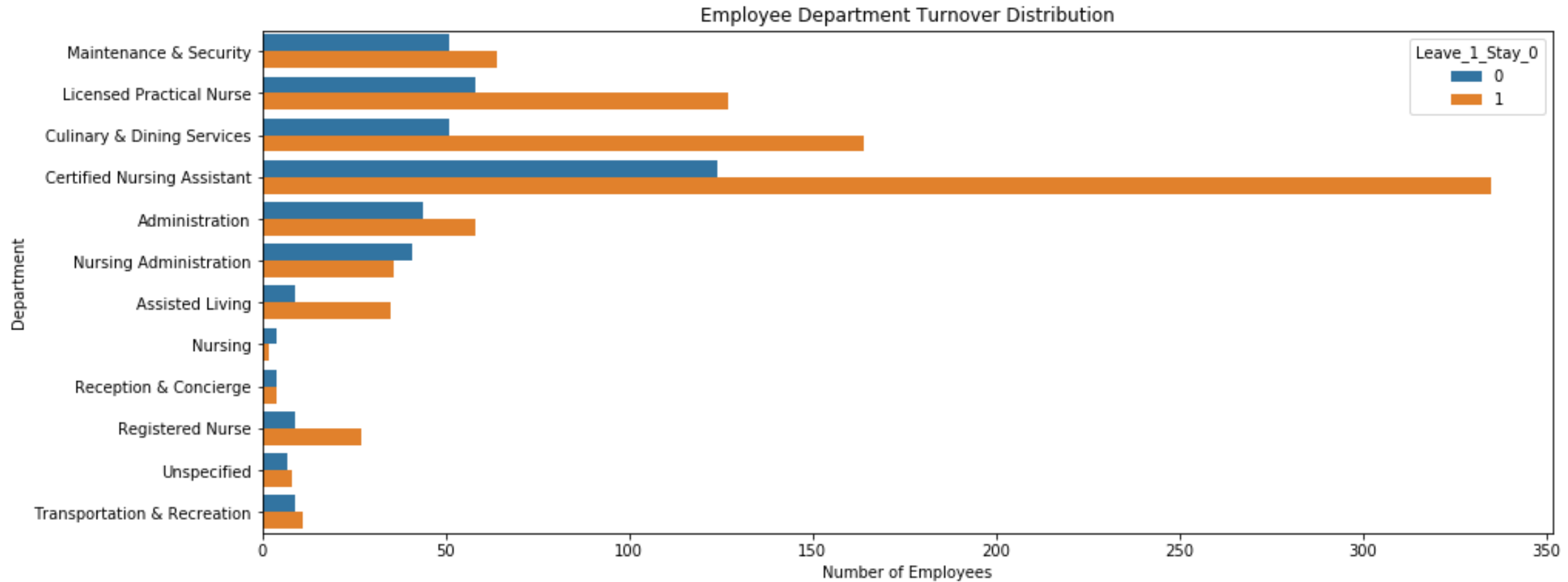
Counts of No Turnover (0) vs. Turnover (1)

Employee Duration Distribution (Bar Chart)

Employee Department Distribution
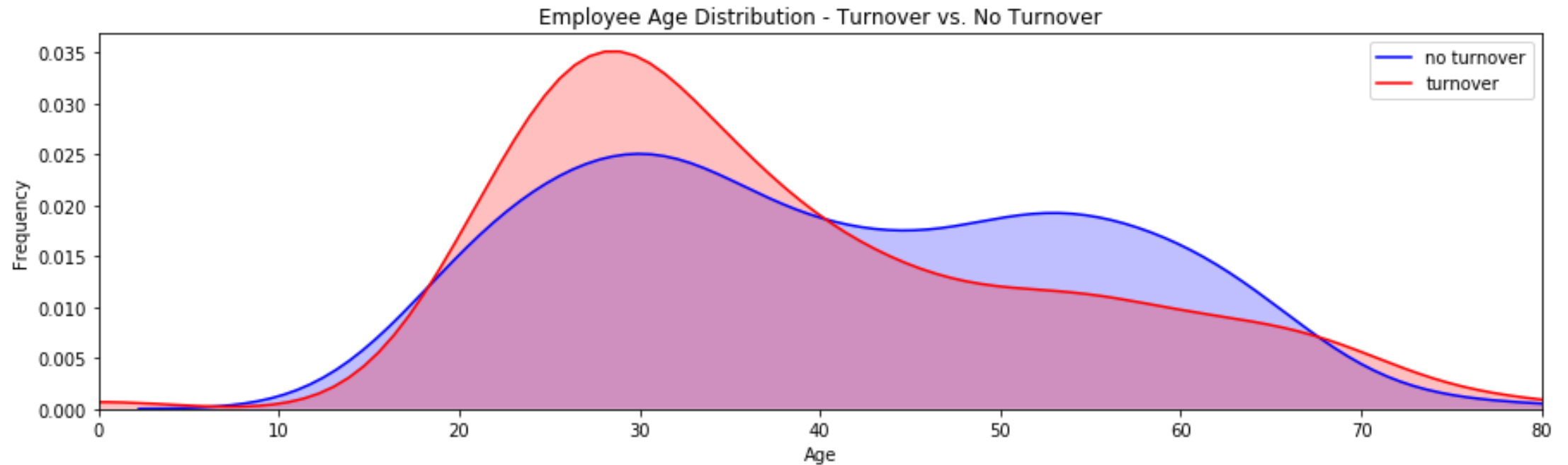
Employee Department Turnover Distribution
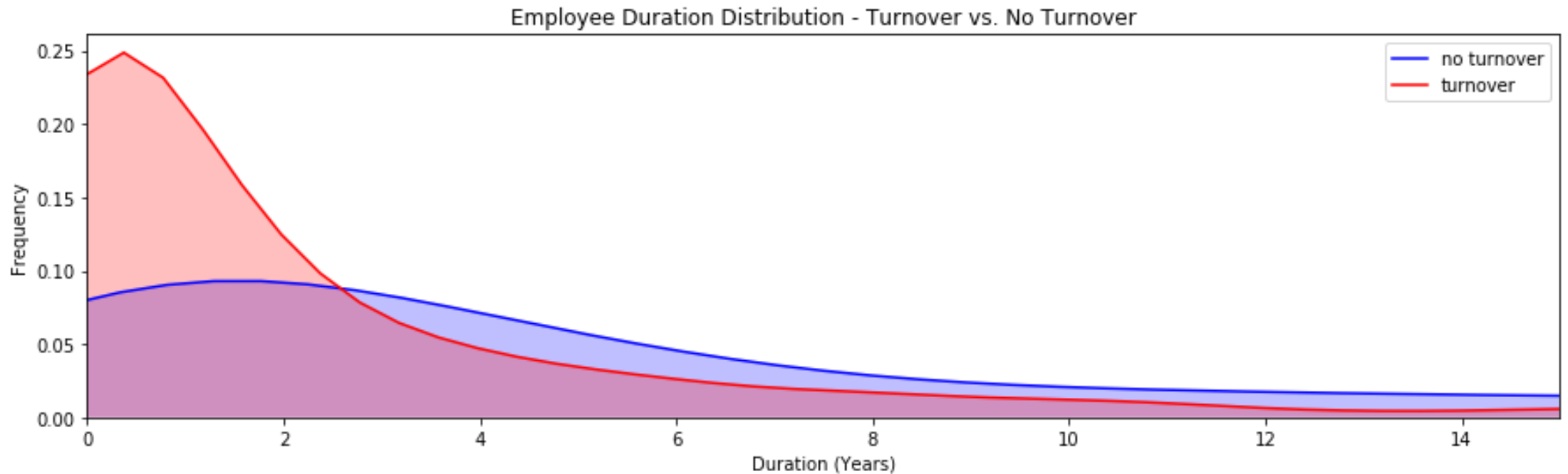

Employee Department Turnover Distribution

Employee Age Distribution (Density Plot)
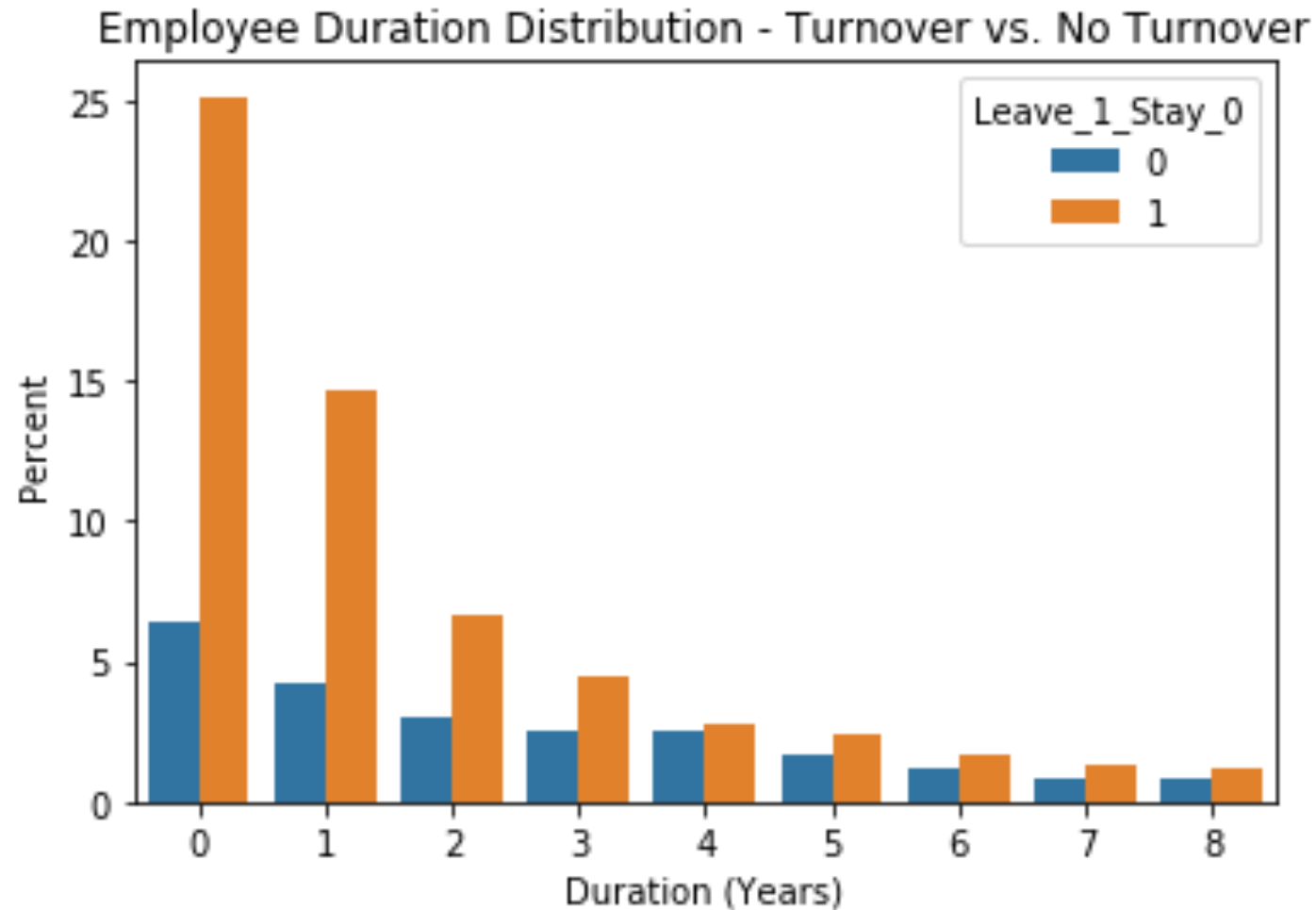- Turnover vs. No Turnover

Employee Duration Distribution (Density Plot)
- Turnover vs. No Turnover

Employee Duration Distribution (Bar Chart)
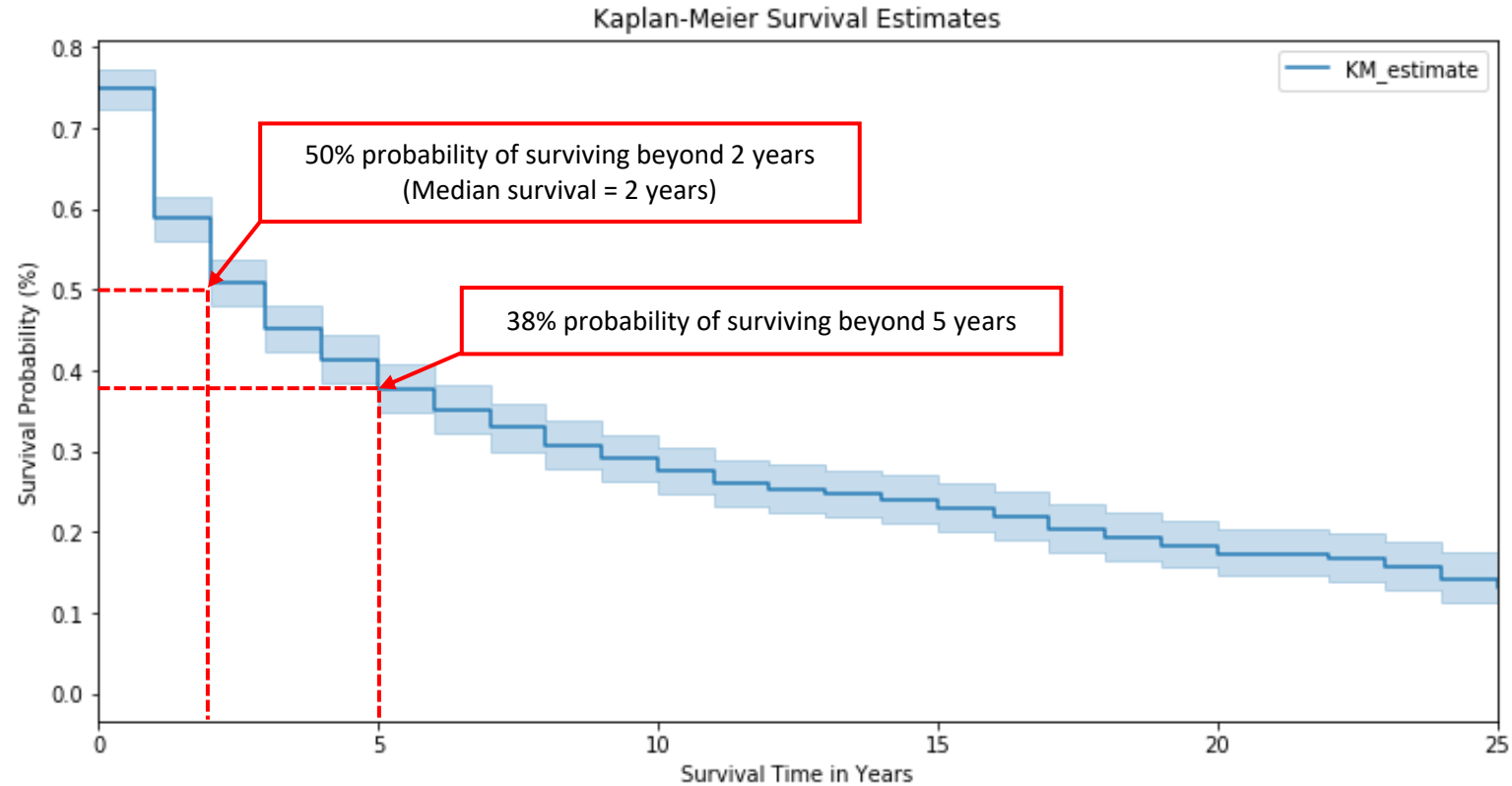# - Turnover vs. No Turnover

Employee Duration Distribution - Turnover vs. No Turnover

Kaplan-Meier Survival Estimates

- At year 0, the survival probability is 0.75 (75% of the employees are alive).
- At year 2, the probability of survival is approximately 50% (The median survival is approximately 2 years).
- At year 5, the probability of survival is approximately 38%.

Kaplan-Meier Survival Estimates by *Gender*


Kaplan-Meier Survival Estimates by Gender
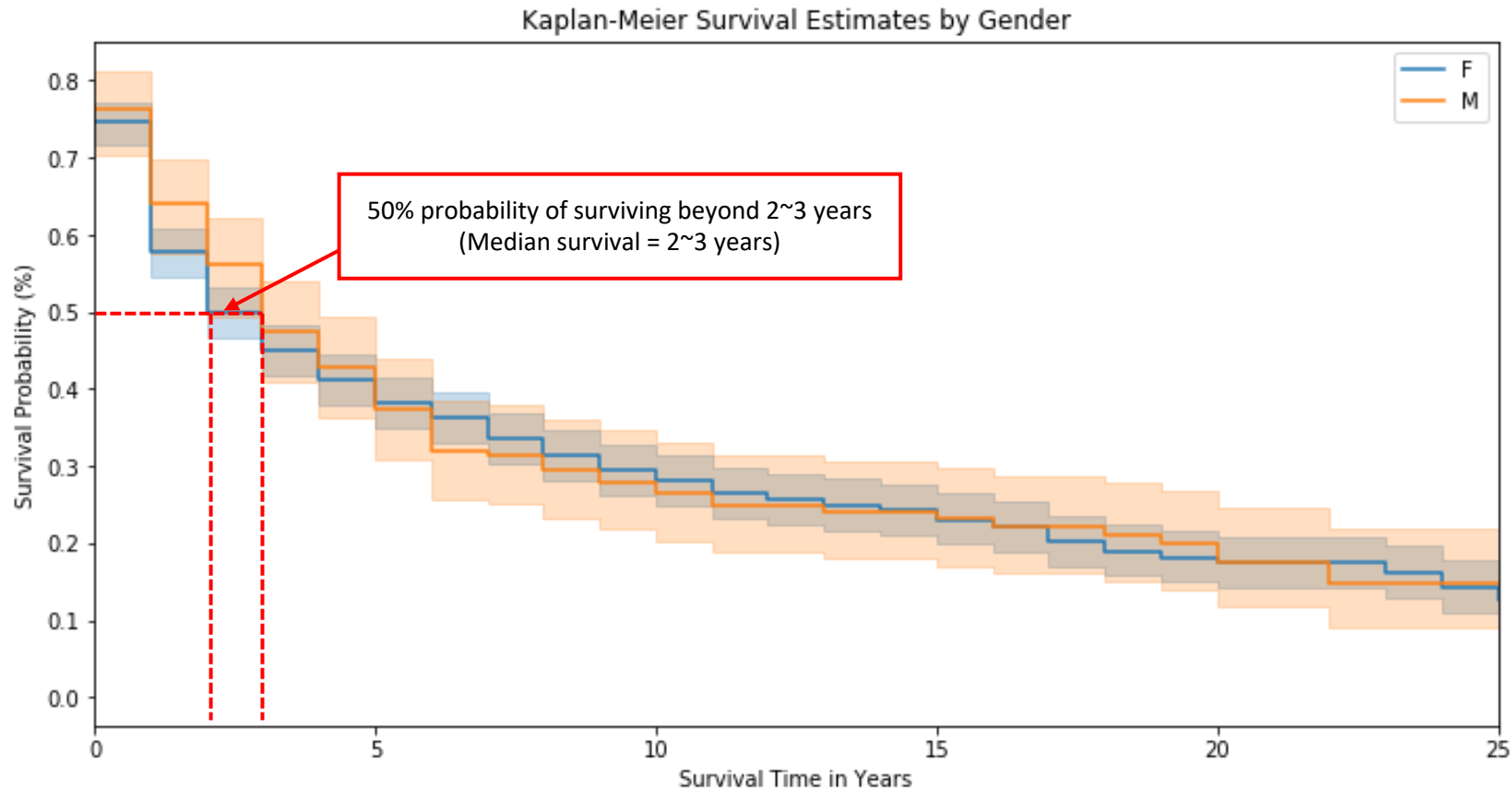
- At year 0, the survival probability is 0.75 for both genders.
- The median survival is approximately 2.5 years for both genders, suggesting a similar survival rate for male and female employees.

Kaplan-Meier Survival Estimates by *Age (Decades)*
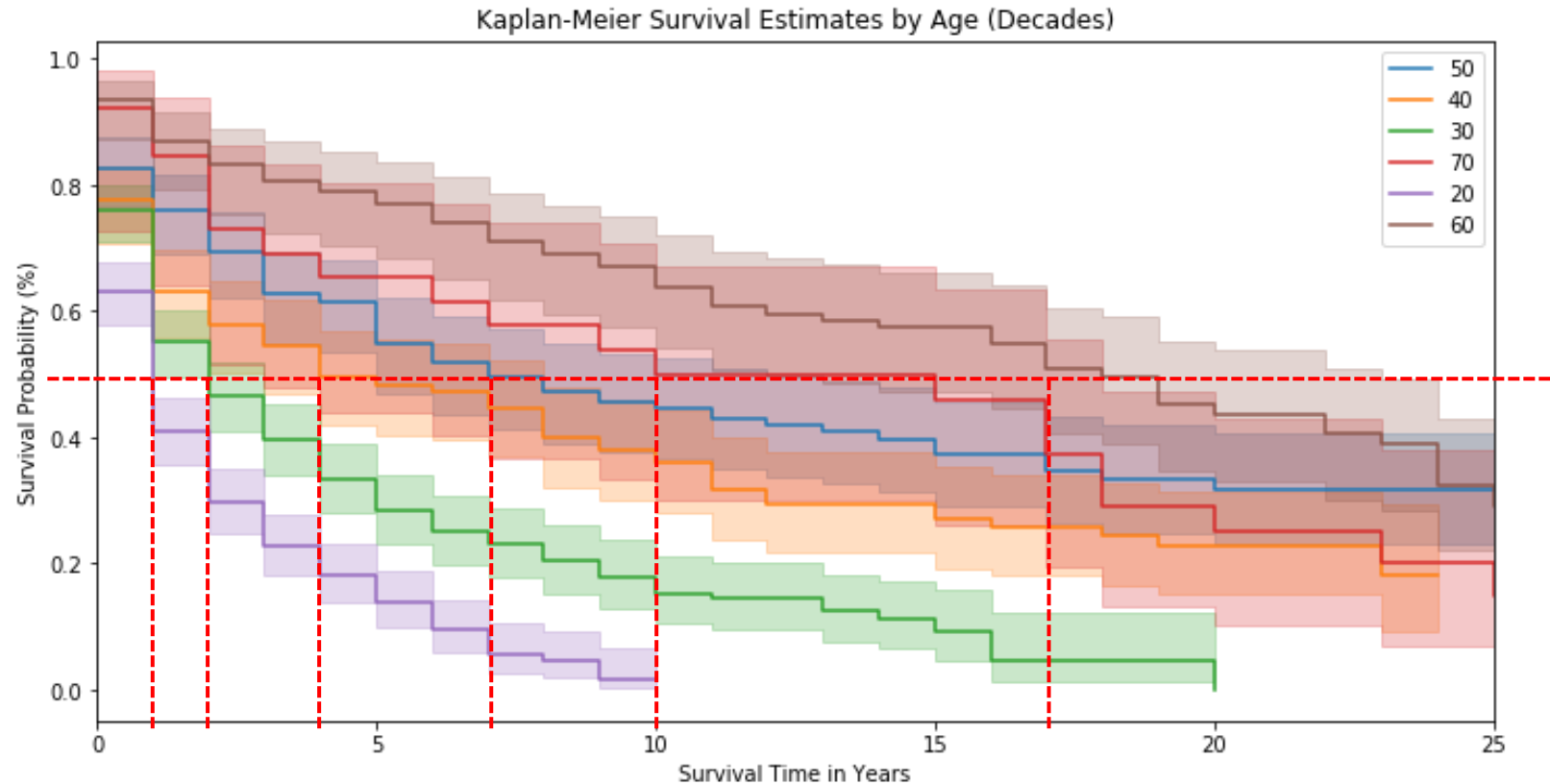

- The median survival differs greatly by the employee's age. Usually, the older the employee is, the longer the employee's survival time is.
  - **_20s:_** 1yr, **_30s:_** 2yrs, **_40s:_** 4yrs, **_50s:_** 7yrs, **_60s:_** 17yrs, **_70s:_** 10yrs

Kaplan-Meier Survival Estimates by *Termination Category (Work related vs. Personal)*
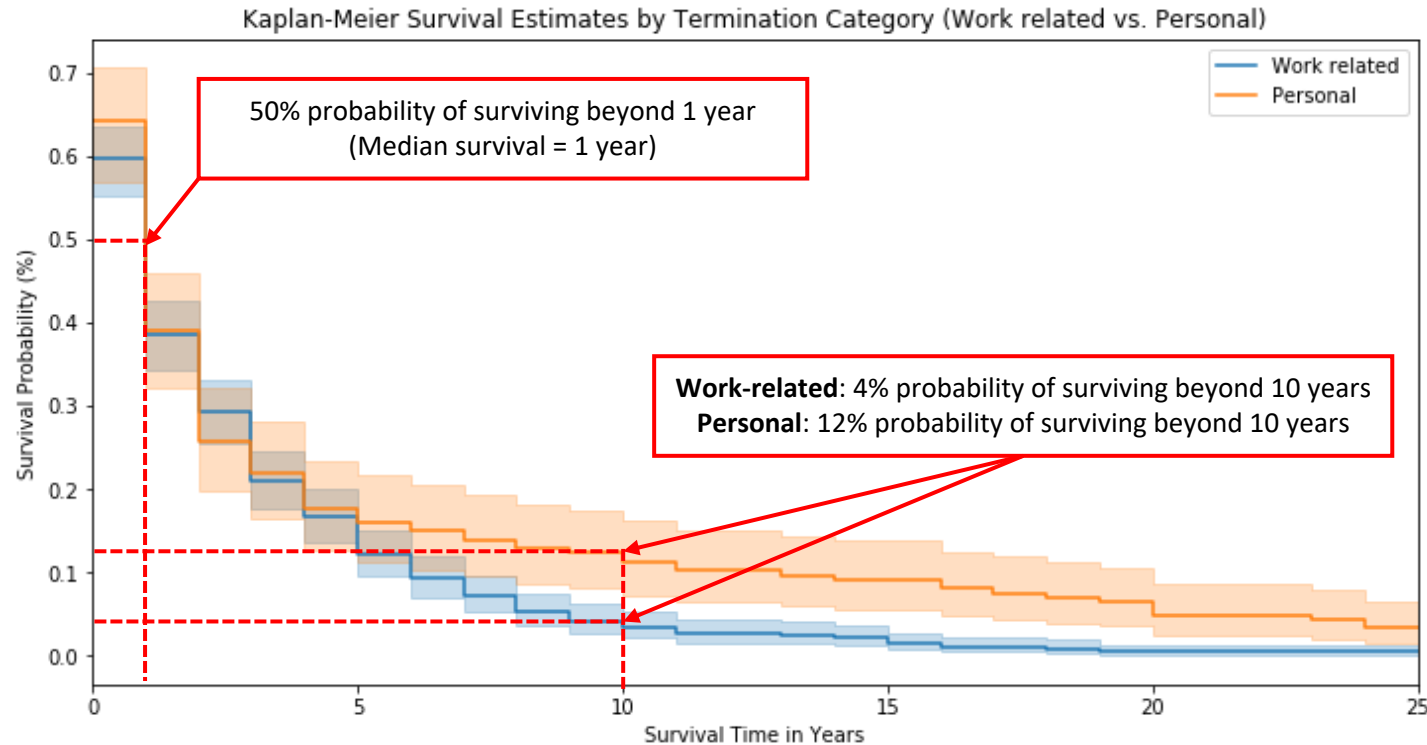
Kaplan-Meier Survival Estimates by Termination Category (Work related vs. Personal)

- At year 1, the probability of survival is approximately 50% for both termination reason categories (work-related and personal).
- Employees who left due to work-related reasons have a lower probability of surviving than those who left due to personal reasons.

Kaplan-Meier Survival Estimates by *Termination Category (Voluntary vs. Involuntary)*
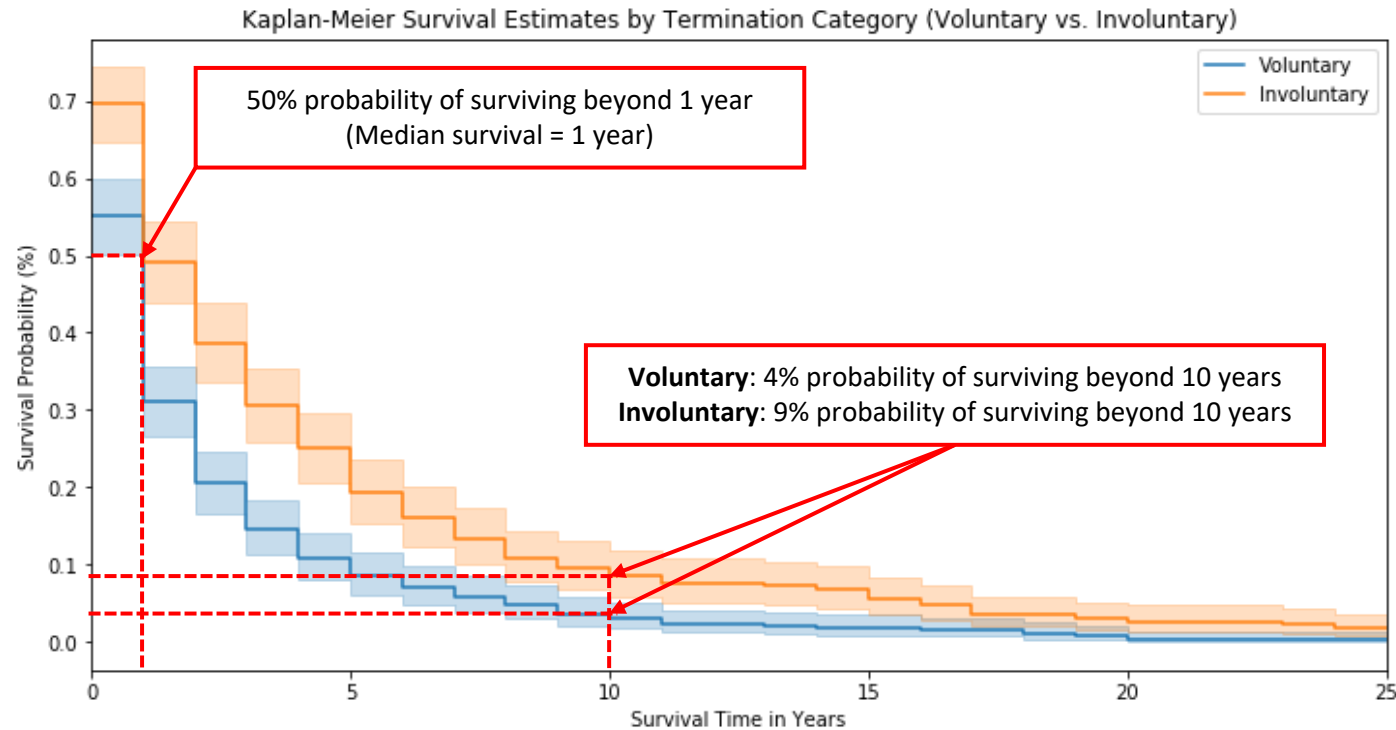
- At year 1, the probability of survival is approximately 50% for both termination reason categories (voluntary and involuntary).
- Employees who left due to voluntary reasons have a lower probability of surviving than those who left due to involuntary reasons.

Kaplan-Meier Survival Estimates by *Department*

Kaplan-Meier Survival Estimates by Department
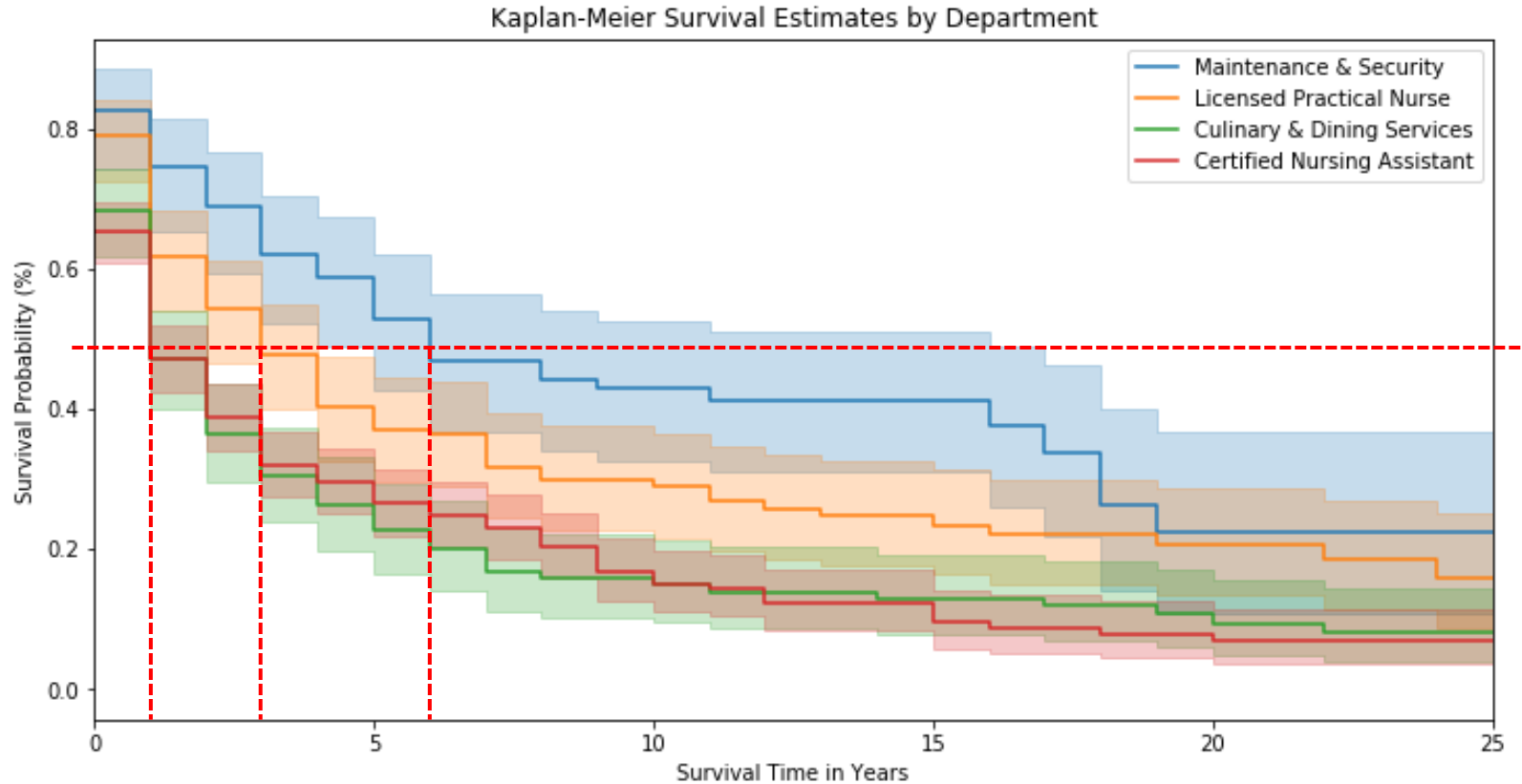
- The median survival differs greatly by department.
  - ***Culinary & Dining Services:*** 1yr
  - ***Certified Nursing Assistant:*** 1yr
  - ***Licensed Practical Nurse:*** 3yrs
  - ***Maintenance & Security:*** 6yrs