Happy Teacher Project

LONGITUDINAL HEAD START TEACHER TURNOVER STUDY

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CCEEPRC Meeting

ACKNOWLEDGMENT

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COLLABORATIONS AMONG THREE ORGANIZATIONS

KEY ELEMENTS OF THE ECE WORKFORCE QUALITY
(KWON ET AL.,2020)

Individual characteristics & internal resources

Job demands & resources

Professional preparation

Policy and contextual factors

Diversity

Qualifications

Stability

ECE Workforce Quality

Competence

Well-Being

Child outcomes

Family outcomes

Program outcomes

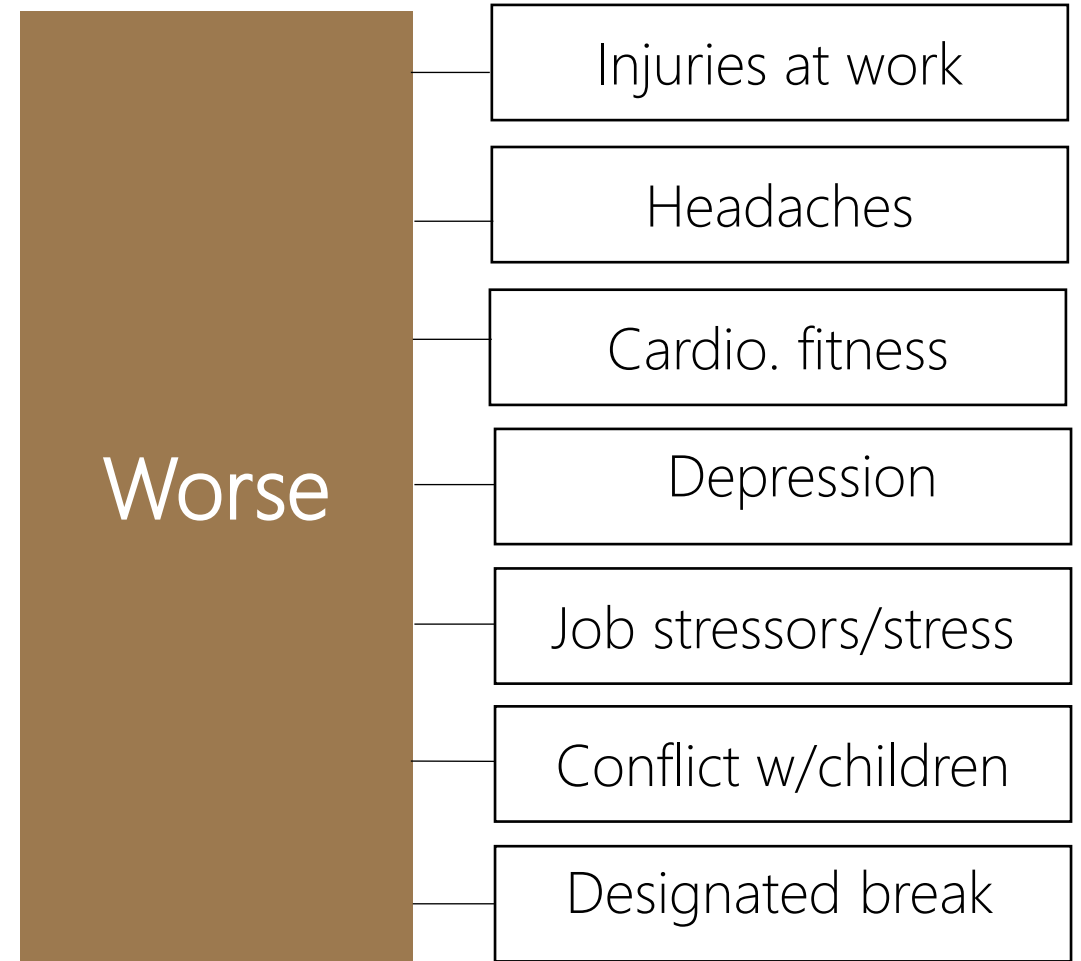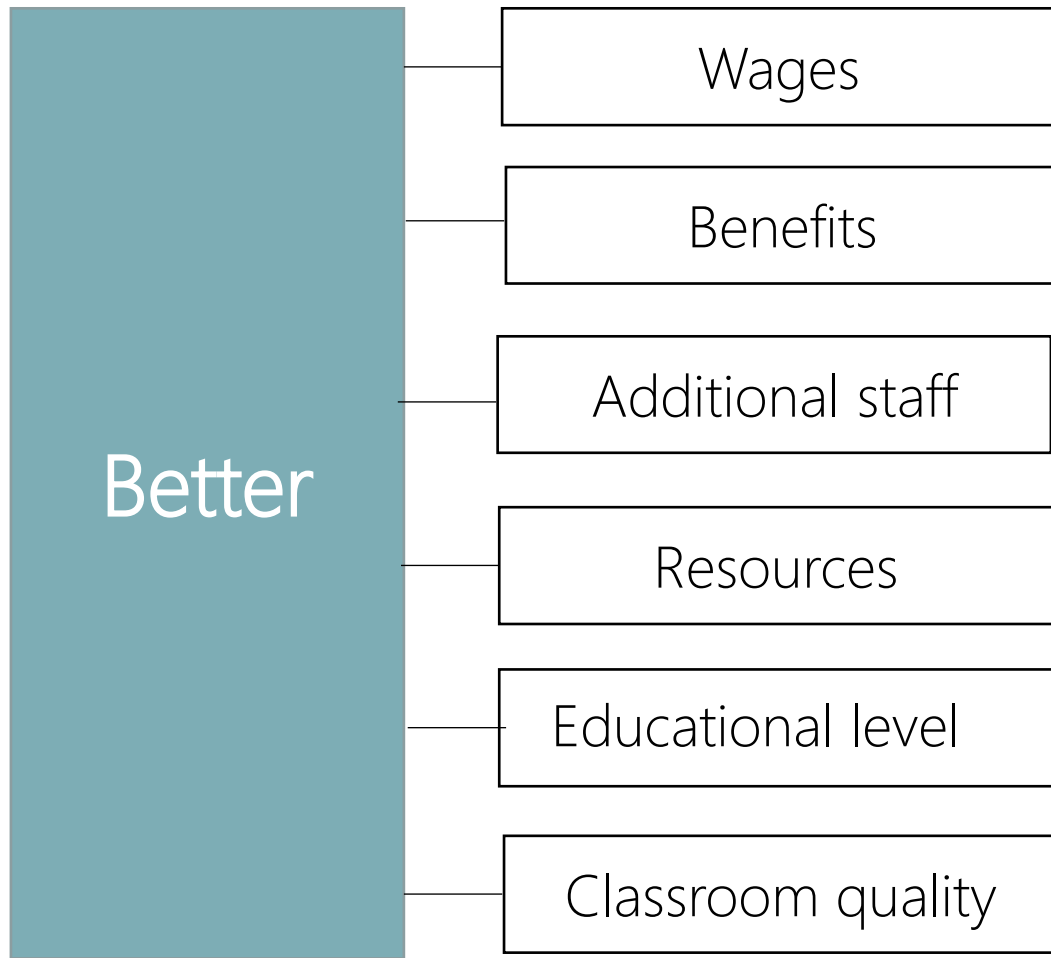Societal, Economic, & Industrial outcomes

5

WHY HEAD START TEACHER TURNOVER?

- Recent studies have raised concerns about pressing challenges in the early care and education (ECE) teacher workforce, including high levels of psychological distress and high turnover rates (Kwon et al., 2021; Whitaker et al., 2013).
- Research suggests that high teacher stress and turnover may be even more prevalent in Head Start (HS) programs (including Early Head Start) than in other ECE settings (Kwon et al., 2020; Otten et al., 2019; Wells, 2015)
- However, there is limited research on longitudinal patterns of and classroom-level characteristics as predictors for HS teacher turnover.

WORKING CONDITIONS and WELL-BEING OF HS TEACHERS (N=112) vs. NON-HS ECE TEACHERS (N=150)

Better
- Wages
- Benefits
- Additional staff
- Resources
- Educational level
- Classroom quality

Worse
- Injuries at work
- Headaches
- Cardio. fitness
- Depression
- Job stressors/stress
- Conflict w/children
- Designated break

RESEARCH QUESTIONS

1

What patterns exist in HS teacher turnover over time?
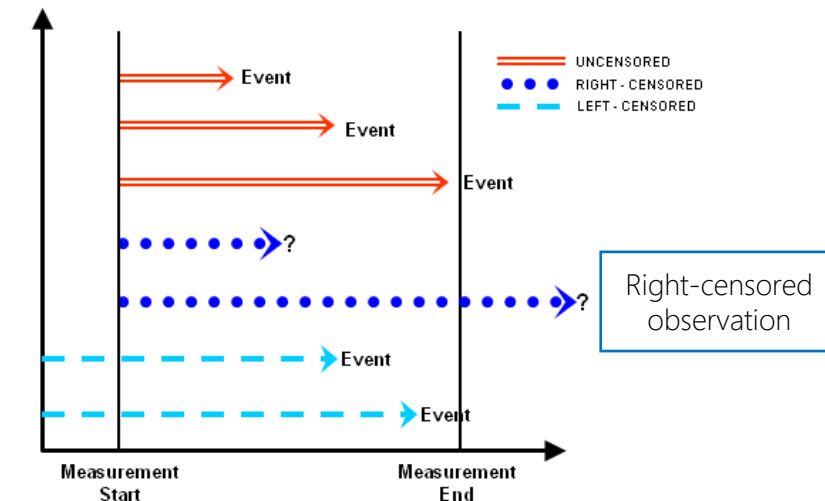
2

What characteristics of children (e.g., disability, health issue, DLL), **families** (e.g., single parent, low-educational level), **and classrooms/programs** (e.g., teacher-child ratio, work environment) are associated with HS teacher turnover?

- **2,787 teachers** who were employed by an Educare school
  - 1,107 lead/co-lead teachers
  - 1,680 assistant teachers/aides
- Data from **2007-22 school years**
- **Survival Analysis** is not commonly used in education research, answers **time until an event occurs**
  - Current analyses: From beginning teaching in Educare how long until teachers will leave the program
- **Censored observations**: Right censored data for teachers who do not leave the program
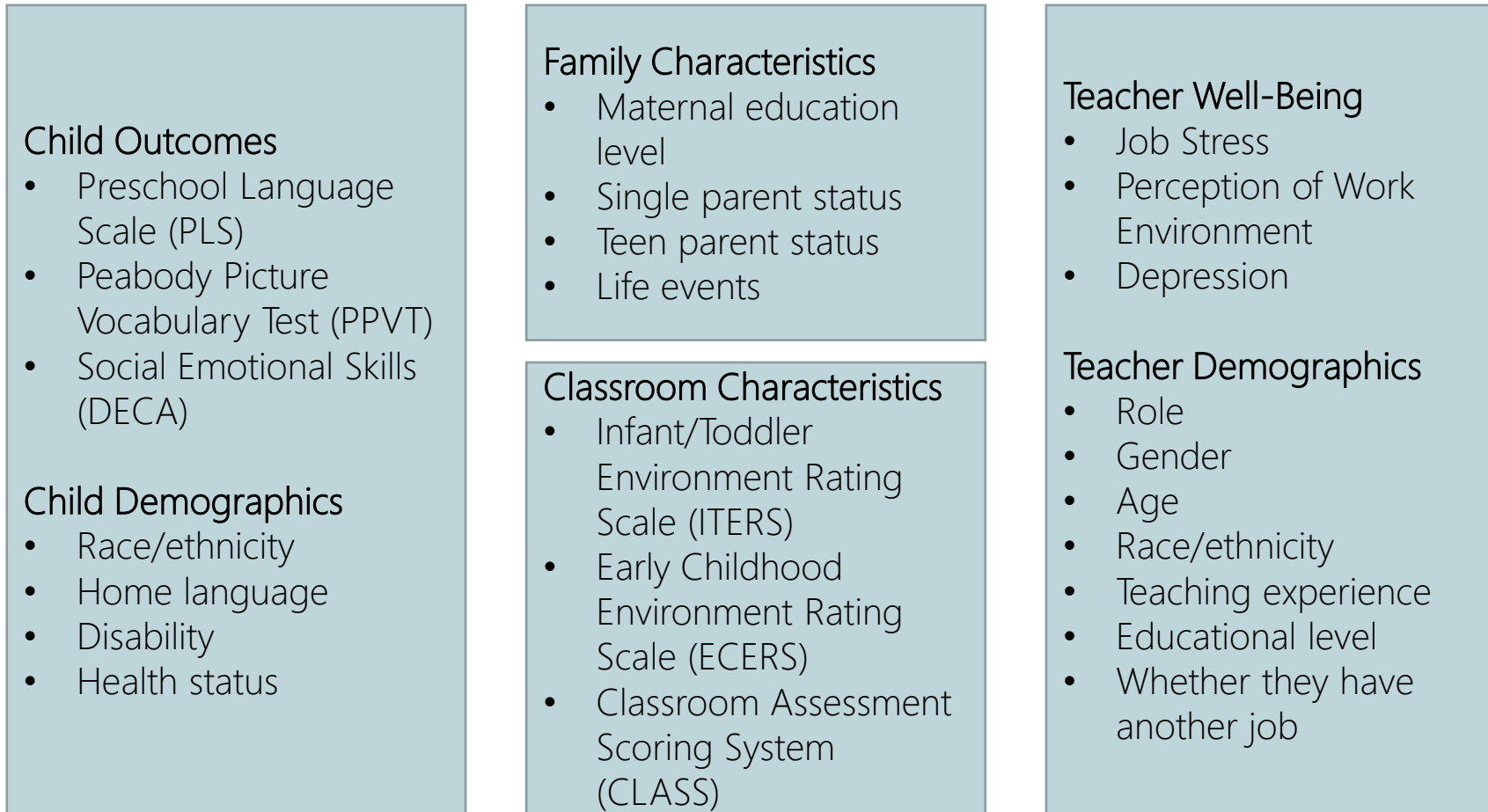- We used **multi-level extension** of survival analysis

EDUCARE

Outcome variable: **Time until an event occurs**

Start follow-up → TIME → Event

UNCENSORED
RIGHT-CENSORED
LEFT-CENSORED

Right-censored observation

- Allows for time varying predictors

Child Outcomes
- Preschool Language Scale (PLS)
- Peabody Picture Vocabulary Test (PPVT)
- Social Emotional Skills (DECA)

Child Demographics
- Race/ethnicity
- Home language
- Disability
- Health status

Family Characteristics
- Maternal education level
- Single parent status
- Teen parent status
- Life events

Classroom Characteristics
- Infant/Toddler Environment Rating Scale (ITERS)
- Early Childhood Environment Rating Scale (ECERS)
- Classroom Assessment Scoring System (CLASS)

Teacher Well-Being
- Job Stress
- Perception of Work Environment
- Depression

Teacher Demographics
- Role
- Gender
- Age
- Race/ethnicity
- Teaching experience
- Educational level
- Whether they have another job

2007

2022

RESEARCH QUESTION#1

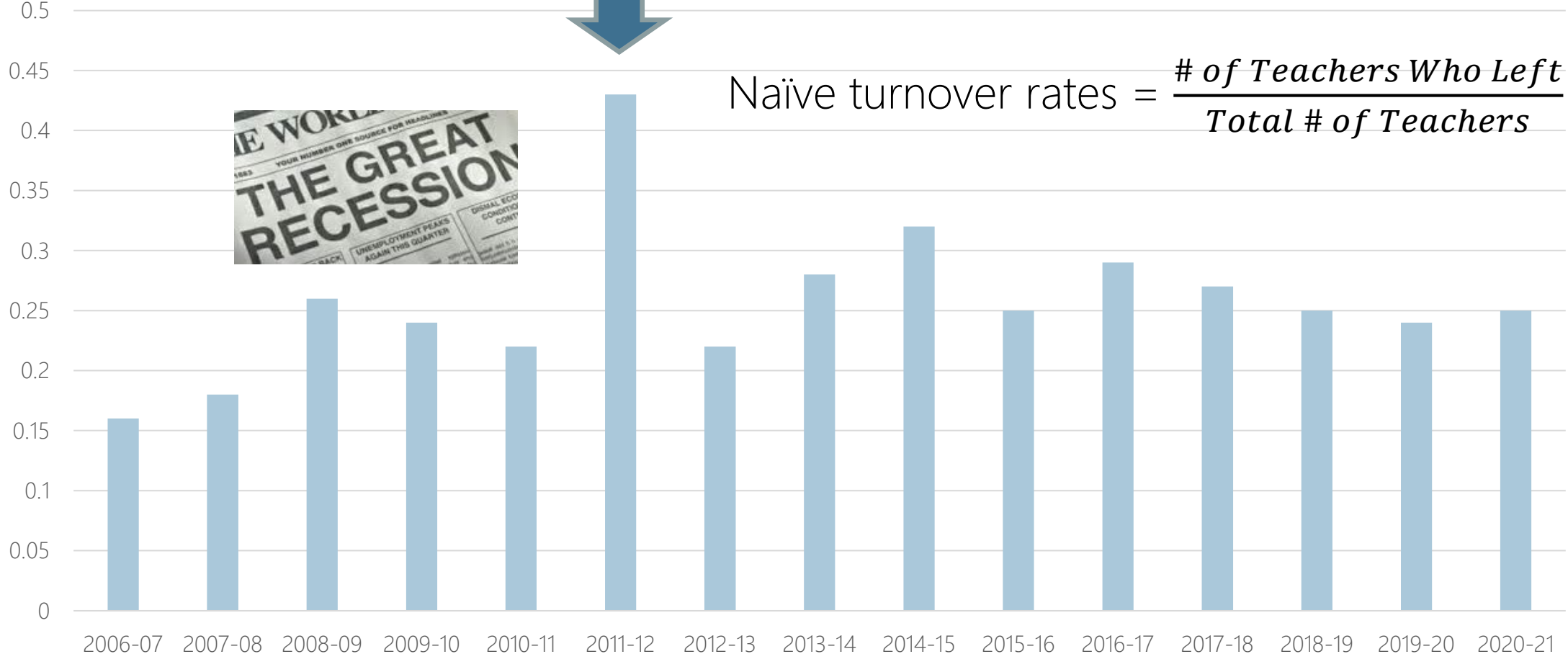What are the patterns of and variations in HS teacher turnover over time?

EHS/HS TEACHER TURNOVER PATTERNS OVER TIME

What happened here?

$$\text{Naïve turnover rates} = \frac{\#\ of\ Teachers\ Who\ Left}{Total\ \#\ of\ Teachers}$$

Naïve Turnover Rates (y-axis): 0, 0.05, 0.1, 0.15, 0.2, 0.25, 0.3, 0.35, 0.4, 0.45, 0.5

Year (x-axis): 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21
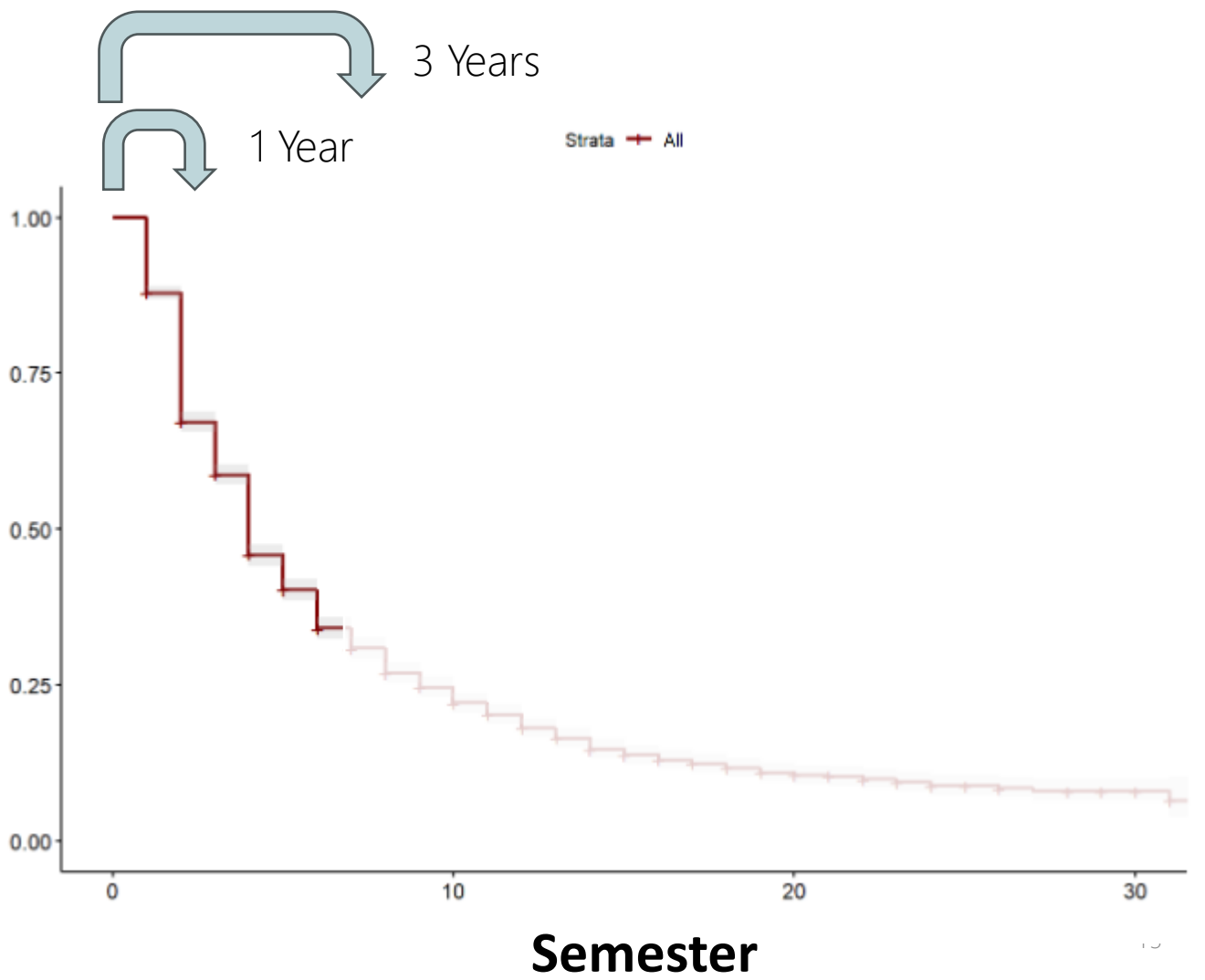
PATTERNS OF EHS/HS TEACHER TURNOVER

High turnover probability in the first year and the first three years

Year	Survival Rate	(Turnover) Rate
1	0.67	**0.33**
2	0.45	**0.55**
3	0.34	**0.66**
4	0.26	0.74
5	0.22	0.78
6	0.18	0.82
7	0.14	0.86
8	0.12	0.88
9	0.11	0.89
10	0.10	0.90

3 Years

1 Year

Strata ─┼─ All

KM Survival Probability
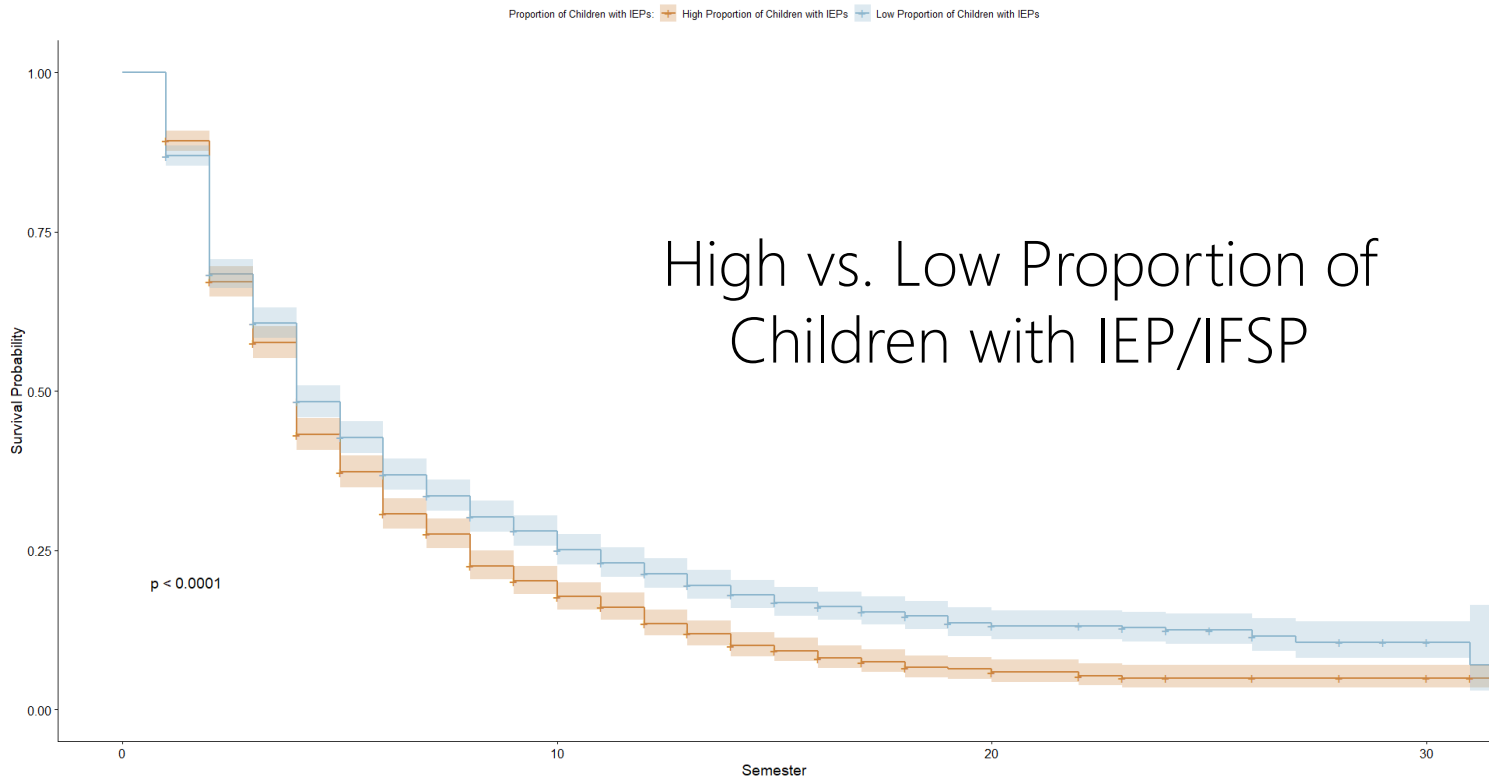
Semester

Account for censored data

RESEARCH QUESTION#2

What characteristics of children, families, and classrooms are associated with EHS/HS teacher turnover?

CHILD CHARACTERISTICS FACTORS

Proportion of Children with IEPs: — High Proportion of Children with IEPs — Low Proportion of Children with IEPs

High vs. Low Proportion of Children with IEP/IFSP

p < 0.0001

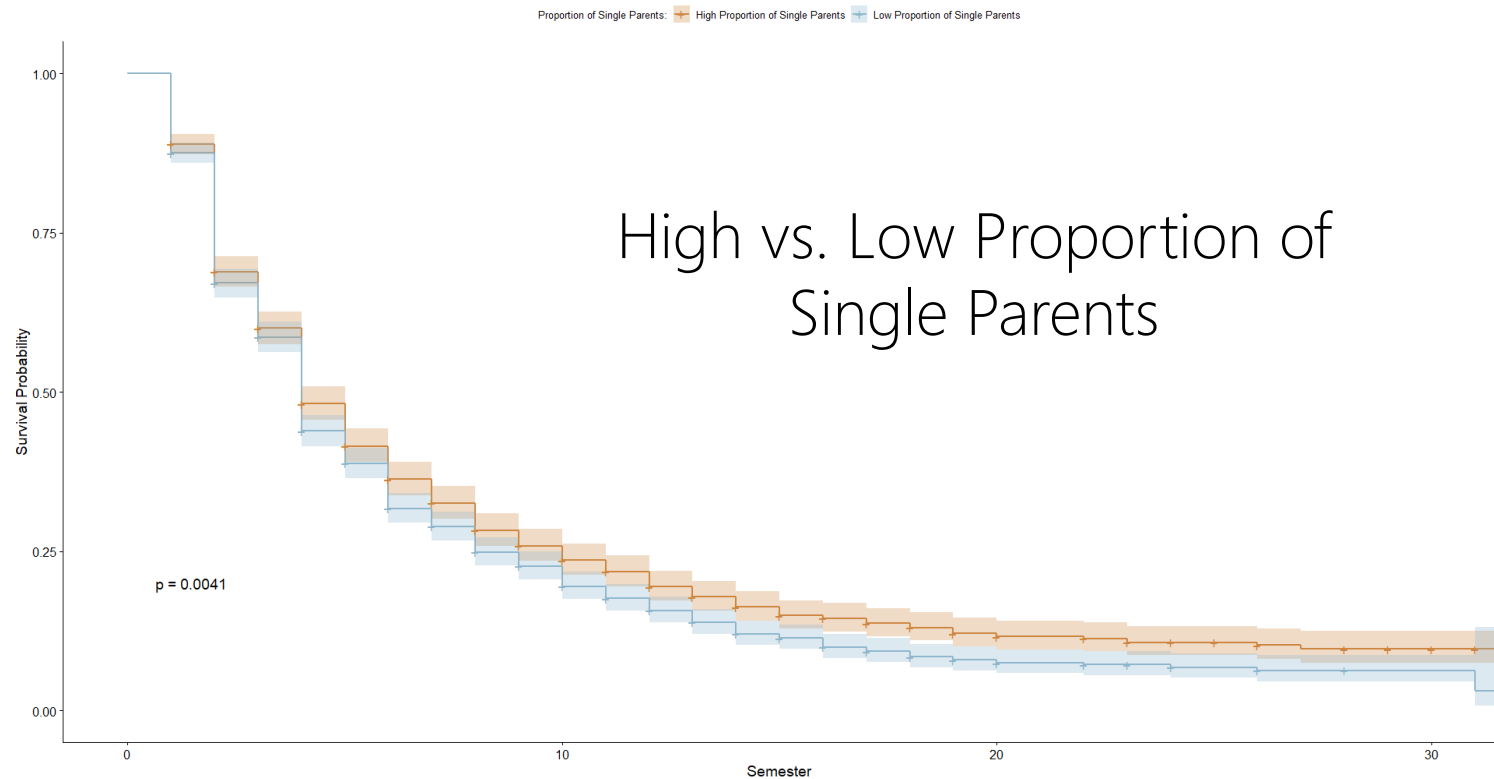*(Y-axis: Survival Probability, 0.00–1.00; X-axis: Semester, 0–30)*

Similar patterns detected
- Poorer Health
- Dual Language Learner/Hispanic Children
- More Child Behavioral Concerns
- Poorer Language Skills

→There were significantly increased risks of leaving when teachers worked in classrooms with more children with disabilities

FAMILY CHARACTERISTICS FACTORS

Proportion of Single Parents: —⊢— High Proportion of Single Parents —⊢— Low Proportion of Single Parents

High vs. Low Proportion of Single Parents
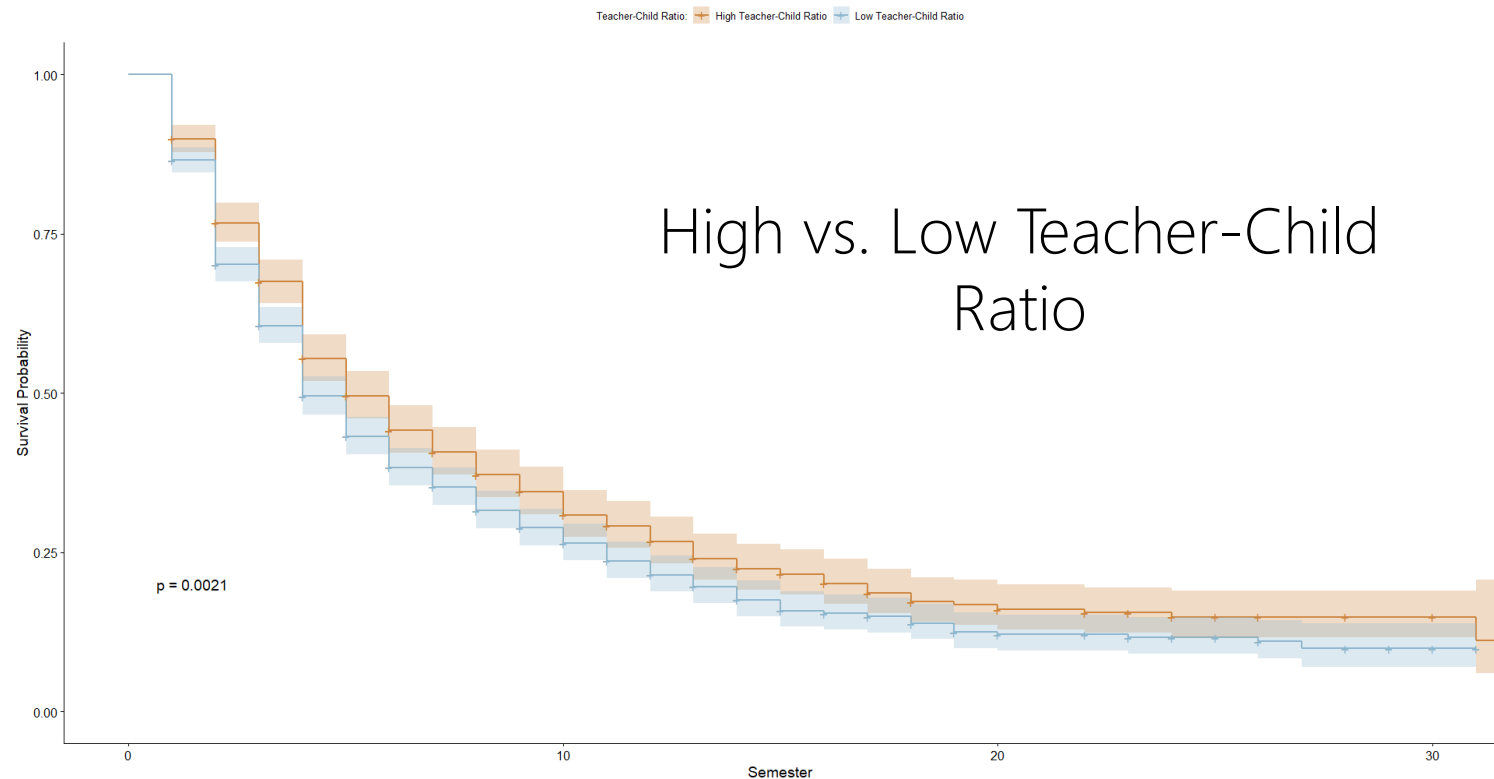
p = 0.0041

Survival Probability

Semester

Similar patterns detected
- Lower Education
- Teenage Mother
- High Life Events
- High Food Insecurity

→There were significantly increased risks of leaving when teachers worked in classrooms with more single parents.

CLASSROOM/PROGRAM CHARACTERISTICS (AS POSSIBLE PROMOTIVE/PROTECTIVE FACTORS)

Teacher-Child Ratio: —— High Teacher-Child Ratio —— Low Teacher-Child Ratio

High vs. Low Teacher-Child Ratio

p = 0.0021

Similar patterns detected
- Higher Teacher-DLL Child Ratio
- More Positive Work Environment
- Less Job Stress
- More Job Rewards
- More Satisfaction with Wages

→ There was significantly increased likelihood of staying when teachers worked in classrooms with higher teacher-child ratios

Food Insecurity
Teen Parenting
Low Parent Education
More Life Events
Single Parenting
Poor Language Skills
Child Health Issue
Child Disability
Child Behavioral Concerns
Dual Language Learning

Job Demands

Satisfaction with Wages
Job Rewards
Positive Work Environment
High Teacher-Child Ratio/High Teacher-DLL Child Ratio

Job Resources

High Stress & Turnover = Too Many Demands & Too Few Resources

ASSOCIATIONS BETWEEN SURVIVAL VARIABLE & TEACHER/ CLASSROOM CHARACTERISTICS

	Estimate	SE	Hazard Ratio (HR)
Teacher Characteristics			
Race/Ethnicity			
Black	-0.09	0.07	0.91
Hispanic	0.07	0.06	1.07
White	0.08	0.06	1.08
Education	0.16**	0.05	1.17
Modernity	-0.06+	0.04	0.93
Years in ECE	-0.22***	0.04	0.79
Role (Assistants/Aides)	-0.01	0.04	0.98
Classroom Characteristics			
Early Head Start	-0.12***	0.03	0.88
Work Environment	-0.22***	0.03	0.79
Race/Ethnicity (Proportion)			
Black	0.07	0.08	1.08
White	0.03	0.05	1.03
Dual Language Learners (Proportion)	0.13*	0.06	1.14
Boys (Proportion)	0.08*	0.03	1.08
Health Condition (Average)	-0.10*	0.04	0.90

Note. *** p < 0.001, ** p < 0.01, * p < 0.05, + p < 0.1;
HR > 1 indicates higher hazard of leaving for higher values of the predictor.

Estimate (β)
- β > 0: higher risk of leaving for higher values of the predictor
- β < 0: lower risk of leaving for higher values

DISCUSSION

- The first three years, especially the first year, are the most vulnerable for teacher turnover, followed by more stabilization.
- We identified various classroom-level child and family characteristics as potential job demands contributing to HS teacher turnover.
- We also identified classroom/program characteristics that may promote teacher retention.
- The findings suggest:
  - the importance of supporting new teachers, especially in the first year, including a more intentional onboarding process, intensive mentoring, and individualized support and encouragement.
  - the importance of balancing job demands and resources: reducing job demands AND increasing job resources to mitigate stress and burnout, which would promote teacher retention.
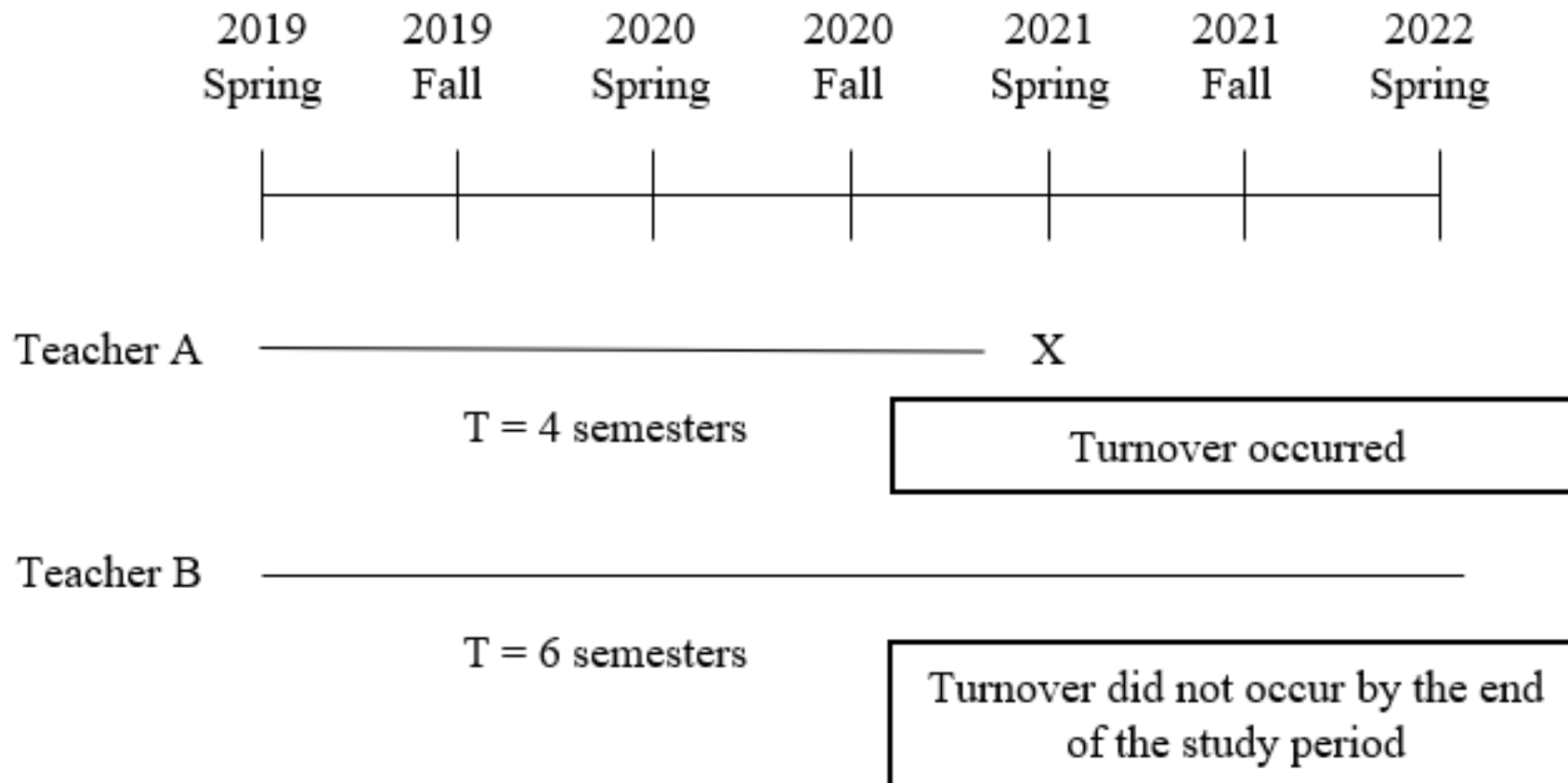
QUESTIONS/
SUGGESTIONS?

THANK YOU

Questions? Contact Kyong-Ah Kwon at

kkwon@ou.edu.

EXAMPLE OF RIGHT CENSORING

| 2019 Spring | 2019 Fall | 2020 Spring | 2020 Fall | 2021 Spring | 2021 Fall | 2022 Spring |

Teacher A ——————————————————— X

T = 4 semesters

Turnover occurred

Teacher B ———————————————————————

T = 6 semesters

Turnover did not occur by the end of the study period

WHY SURVIVAL ANALYSIS?

- Such censored survival times can either underestimate or overestimate the actual (yet unknown) time to event
- The probability of surviving 6 years given a teaching staff has already survived 5 years

$$P\big(Y > t_j\big) = P\big(Y > t_1\big) \times P\big(Y > t_2 | Y > t_1\big) \times \cdots \times P\big(Y > t_j | Y > t_{j-1}\big)$$

$$= P\big(\text{stay at least to } t_1\big) \times P\big(\text{stay at least to } t_2, \text{ given that stayed at least to } t_1\big) \times \cdots$$

$$\times P(\text{stay at least to } t_j, \text{ given that stayed at least to } t_{j-1})$$