Employment Outcomes for Graduates of Washington State's Applied Baccalaureate Degree Programs

Community College Baccalaureate Association
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Background

- What is the CCBA?
- Problem
  - Growing trend, now allowed in 24 states
  - Concerns about academic quality
- Purpose
  - Determine whether postbaccalaureate employment outcomes are comparable for graduates of CCBA and TBA institutions
- Research Questions
  - One year after graduation, are employment outcomes (employment status and wages) comparable for CCBA and TBA graduates?

Why might we see a difference in CCBA and TBA outcomes?

- Signaling
- Differences in quality
  - Amount and allocation of resources
  - Makeup of the student body
  - Curricular functions and priorities
  - Characteristics of the service area
- CCBA Strengths
  - Close connections with local employers
  - Ability to respond to local needs
  - Expertise in applied and technical fields

DATA AND METHODS

Data

- Washington State
  - One of the earlier states to allow CCBA degrees
  - Second highest concentration of CCBA offerings in the U.S. after Florida
- Data Elements
  - High school attended, college enrollment, degree completion, and employment

Analysis Sample

- Completed bachelor's degree between 2009-2014
- Majored in business administration and nursing
- Subgroups
  - High school subgroup
  - Prior employment subgroup

Treatment Group	Comparison Group
280 CCBA graduates	6,330 TBA graduates

Outcome Variables: Derived from Unemployment Insurance Database

Has record

- Confirms employment
- Provides quarterly earnings and hours for each employer

No record

- Unemployed, **and**
- Employed but no match
  - type of employer
  - location of the employer
  - missing or erroneous data in the elements used for file linking

OLS

$$Employment\_outcome_i = \beta_0 + \beta_1 CCBA_i + \beta_2 X_i + \mu_i \quad (1)$$

- Assumes that there are no unmeasurable confounders
- Challenge
  - Treatment variable is endogenous
  - Will produce biased estimates

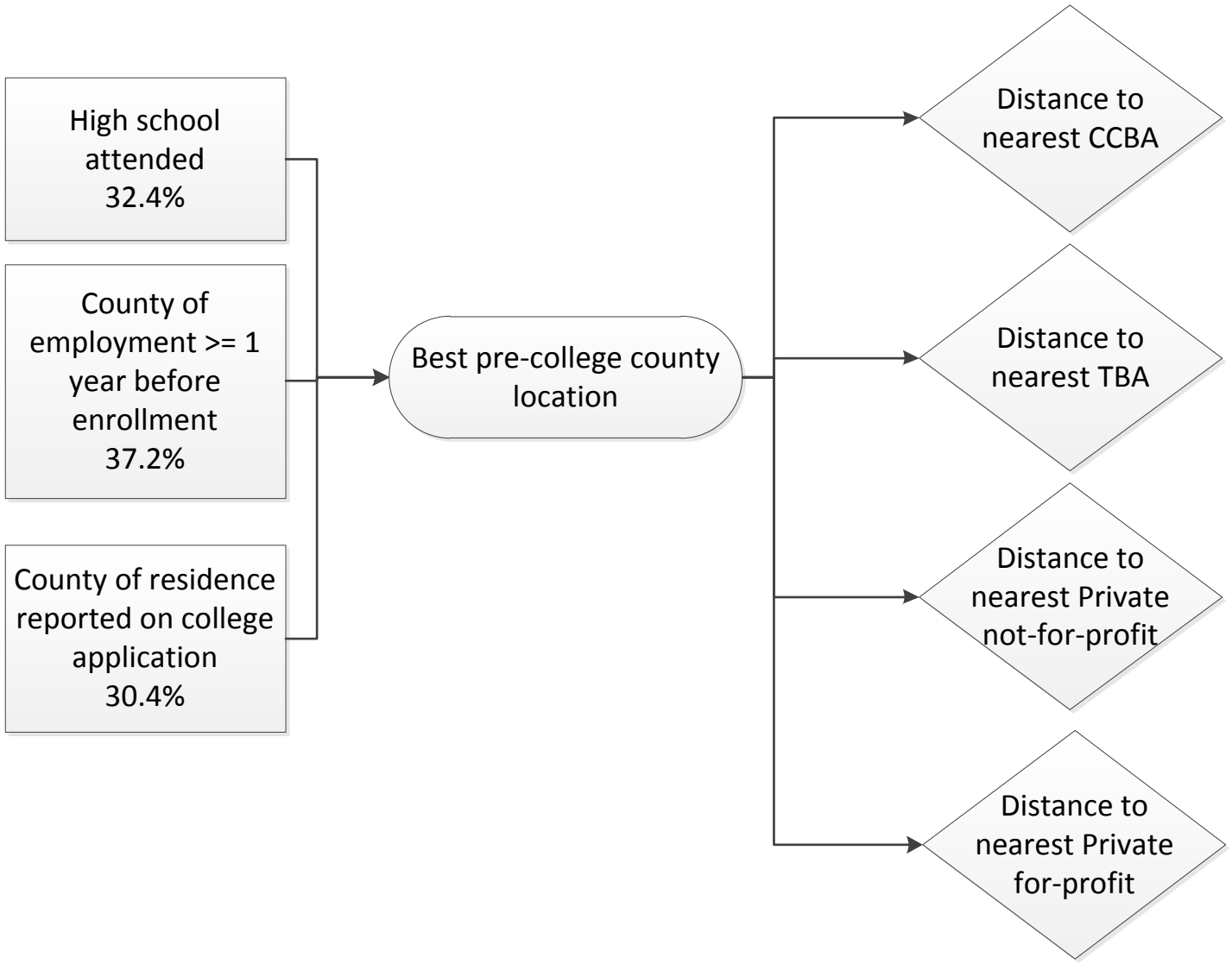
Instrumental Variables (IV)

- An instrument is a variable (or set of variables) that is related to the treatment variable such that it can be used to predict the actual treatment condition, (Angrist & Pischke, 2009; Card, 2001; Dunning, 2012; Wooldridge, 2013).
- Two-stage least squares
  - Stage 1: Predict treatment status with instrument
  - Stage 2: Use predicted value for treatment status in second stage equation

$$CCBA_i = Z_i\alpha_1 + X_i\ \alpha_2 + \upsilon_i \qquad (2)$$

$$Employment\_outcome_i = \beta_1 \widehat{CCBA}_i + \beta_2 X_i + \varepsilon_i \qquad (3)$$

Instrument College Choice with Distance



IV Assumptions

- Nonzero causal effect of instrument on treatment
- Ignorably random assignment
- Exclusion Restriction
- Monotonicity
- Stable Unit Treatment Value Assumption

Fixed Effects

- Controls for all individual-level attributes that are constant over time.
- Assumes that there are no unmeasurable confounders that vary over time and individuals

$$PostBA\ wage_{it} = \beta_0 + \beta_1(Completion)_{it} + \beta_2(Completion_{it} * CCBA_{it}) + \beta_3(Enrolled)_{it} + \beta_4(Enrolled_{it} * CCBA_{it}) + \beta_5(AshDip2/3/4)_{it} + \beta_{6-8}(AshDip2/3/4_{it} * CCBA_{it}) + \rho_i + \eta_t + \varepsilon_{it} \quad (4)$$

RESULTS

CCBA Effect on employment status

	Employed	
Estimation Method	OLS	IV
Nursing		
Full sample	No effect	**Positive**
High school subgroup	No effect	No effect [1]
Prior employment subgroup	No effect	No effect
Business		
Full sample	**Positive**	No effect
High school subgroup	No effect	No effect
Prior employment subgroup	No effect	No effect

[1] *F*-statistic did not exceed the critical value to reject the null hypothesis that the instruments are weak.

CCBA Effect on wages: Nursing

	Wages		
Estimation Method	OLS	IV	FE
Controls for wages			
2 years prior to degree completion	No effect	**Positive**	
4 years prior to degree completion	No effect	**Positive**	
6 years prior to degree completion	No effect	No effect	
High school subgroup, 4 year wage controls	No effect	No effect [1]	
Prior employment subgroup, 4 year wage controls	No effect	**Positive**	
Enrollment, completion, Ashenfelter Dip			No effect

[1] *F*-statistic did not exceed the critical value to reject the null hypothesis that the instruments are weak.

CCBA Effect on wages: Business Administration

	Wages		
Estimation Method	OLS	IV	FE
Controls for wages			
2 years prior to degree completion	No effect	No effect	
4 years prior to degree completion	No effect	No effect	
6 years prior to degree completion	No effect	No effect	
High school subgroup, 4 year wage controls	No effect	No effect [1]	
Prior employment subgroup, 4 year wage controls	No effect	No effect[1]	
Enrollment, completion, Ashenfelter Dip			No effect

[1] *F*-statistic did not exceed the critical value to reject the null hypothesis that the instruments are weak.

CONCLUSION

Conclusion

- Contribution – empirical comparison
- Mixed results across specifications and subgroups
  - Null or positive
- No negative effects
  - Equally likely to be employed
  - No difference in wages

Implications for Policy

- **States**
  - CCBA an option to help achieve state-level access and attainment goals
- **Institutions**
  - The findings of this study suggest that institutions should consider CCBA degrees a viable option for expanding programming to meet the needs of the communities in which they are situated
- **Students**
  - How to invest in higher education by choosing the institution that provides the best fit for their available resources and educational goals

Implications for Research

- Employment Outcomes
  - Link education and employment records
  - Develop regional data sharing agreements
  - Institutional follow-up surveys of former students

Limitations

- Unobservable outcomes due to limitations in coverage of unemployment insurance data
- Limited set of individual-level covariates
- Data regarding demand for specific occupations
- Data regarding comparability of instructional programming across institutions

Future Research

- Longer-term outcomes
- Experimental designs with resumes
- Other fields of study and other locations
- Cost-benefit analysis
- Qualitative analysis of quality of instruction across programs
- Analyze whether allowing CCBA degrees significantly increases bachelor's degree production

QUESTIONS

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