

# **RELATIONSHIPS AMONG SELECTED GENERAL EDUCATION COURSES AND THE LOCATION OF THE INSTRUCTION**

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# Background

- ▣ RFP from KBOR and KSDE requested studies using the their respective longitudinal databases
- ▣ These databases include individual level information about students enrolled in the public schools in Kansas
- ▣ Research projects that addressed educational outcomes were requested
- ▣ 10 potential areas of study were specified



# This project

- ▣ Focus: Outcomes for college-level general education courses as these might relate to “location” of instruction
- ▣ Confined study to data available in the postsecondary data base (KSPSD).
- ▣ Data from the 7 universities and 19 community colleges
- ▣ Individual course grades available for academic years 2008 through 2012



# Two Major Objectives for the Project

- 1 Describe the predicted probability of passing selected general education courses, specifically College Algebra and English I
  - by school and sector
  - statistically controlling for demographic and enrollment characteristics
- 2 Describe pass rates for a second course (advanced) based on the location of the instruction of the first and the second course.



# METHODS



# Definitions and statistics

- ▣ Passing is defined as earning a course grade of “D” or better
- ▣ Logistic regression:
  - Controlled statistically for differences among the schools
    - ▣ Demographic - age, gender, ethnicity
    - ▣ Enrollment – full versus part time; new freshmen
    - ▣ ACT participation
    - ▣ Concurrent enrollment
  - Provided a predictive probability of passing or “pass rate”



# Two important factors that alter course outcomes

1. Calculation of success for courses
  - Including students withdrawing as unsuccessful as well as those that fail a course
  - Including just those that complete a course as either passing or failing
2. Concurrent course enrollments



# Calculation of passing with method one: including withdrawals

- ▣ With this method, withdrawals are counted as an unsuccessful attempt. Pass rate becomes the number passing divided by total enrollment i.e. withdrawals, passing and failing
- ▣ Usual practice and important when comparing pass rates across schools
- ▣ Withdrawing from courses
  - Students withdraw from courses for a variety of reasons; however, one major reason is difficulty with the course or potential failure
  - Schools permit course withdrawals with a grade of “W” up to a certain date within each term.
  - The “W” grade does not affect the grade point average
  - The final date for withdrawing varies by school from as early as 35<sup>th</sup> day of classes to right before final examinations begin.



# Calculation of passing with method two: counting just completers

- ▣ Students counted only if they pass or fail the course at the conclusion of the term.
- ▣ This method inflates the pass rates especially for those schools with withdrawal dates closest to the end of the semester.
- ▣ The first method inflates pass rates for schools not submitting withdrawal data.



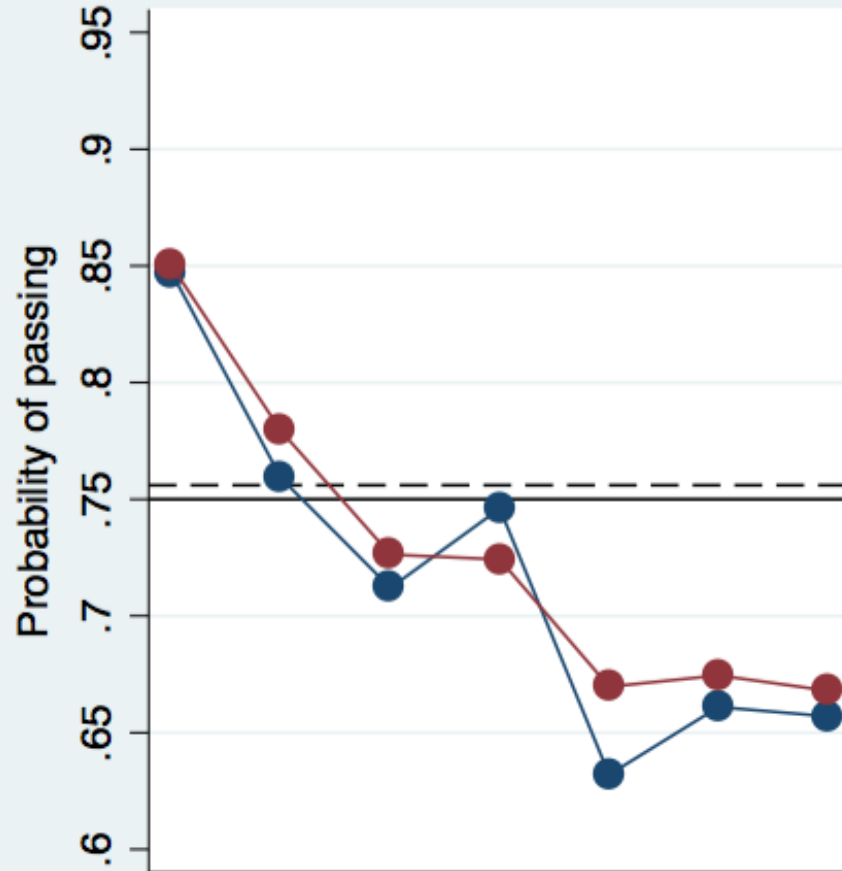
# Method used for this project

Both methods are included because complete withdrawal information was not submitted by some schools in some years and may have been inconsistently reported by others.

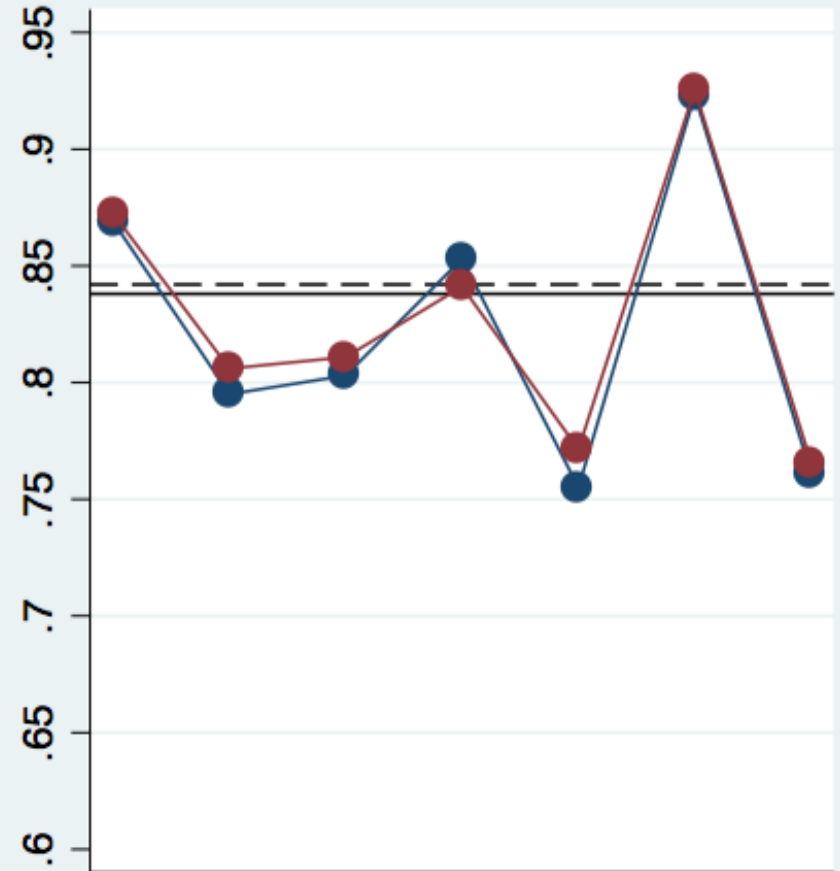


# Algebra pass rates for universities\*

## Includes Withdrawals



## Excludes withdrawals

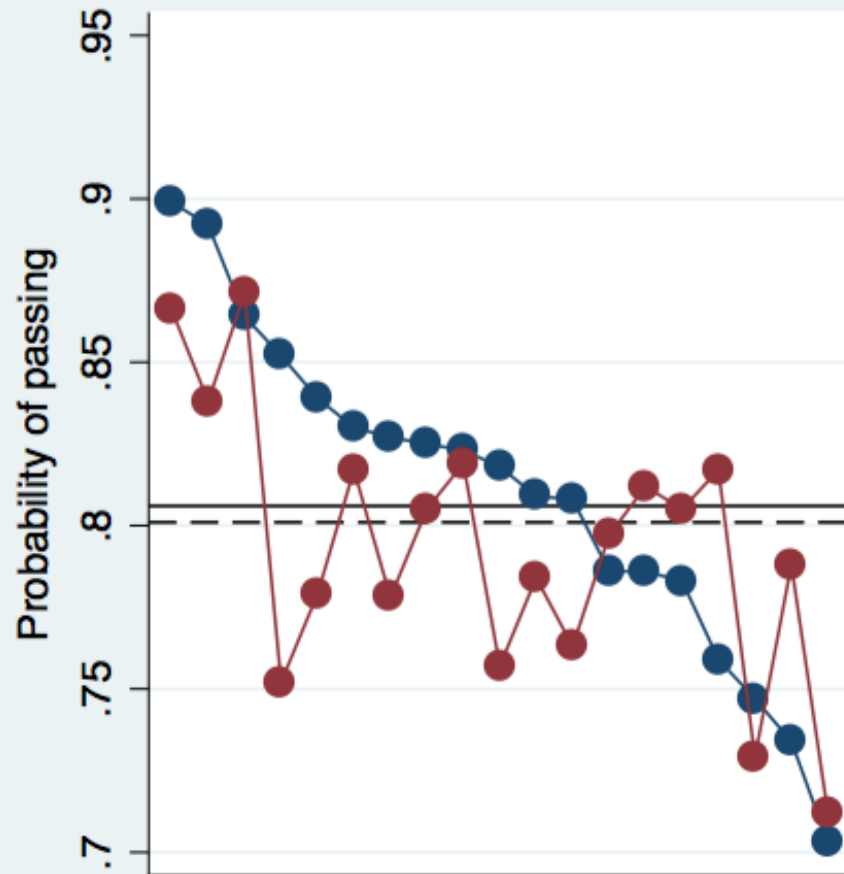


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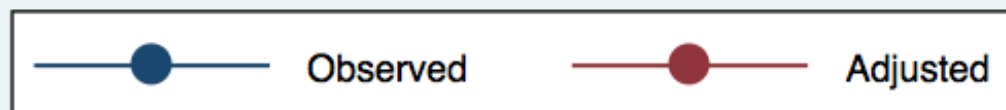
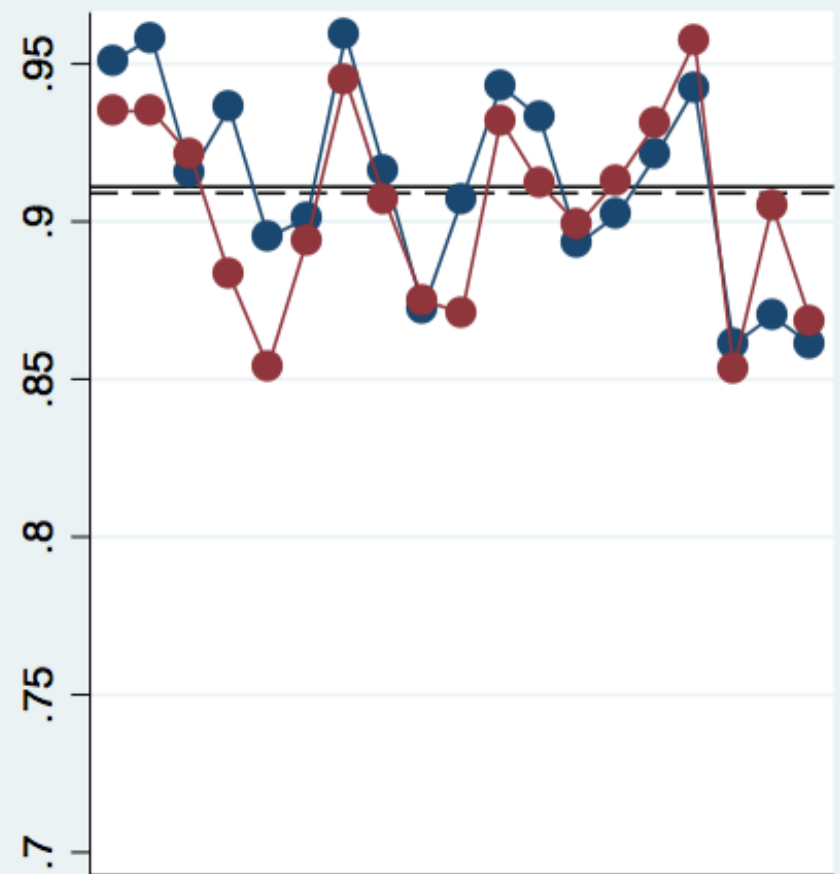


# Algebra pass rates for community colleges

## Includes Withdrawals



## Excludes Withdrawals



Adjusted for age, gender, minority status, enrollment & concurrent course



# Concurrent enrollments: impact on course passing rates

- ▣ Definition: High school students taking a college level course taught by a high school teacher, during the high school day, on the high school campus.
- ▣ More common at community colleges than at the universities
- ▣ Pass rates: exceeded 95% for all courses studied.
- ▣ Withdrawal rates are very low.



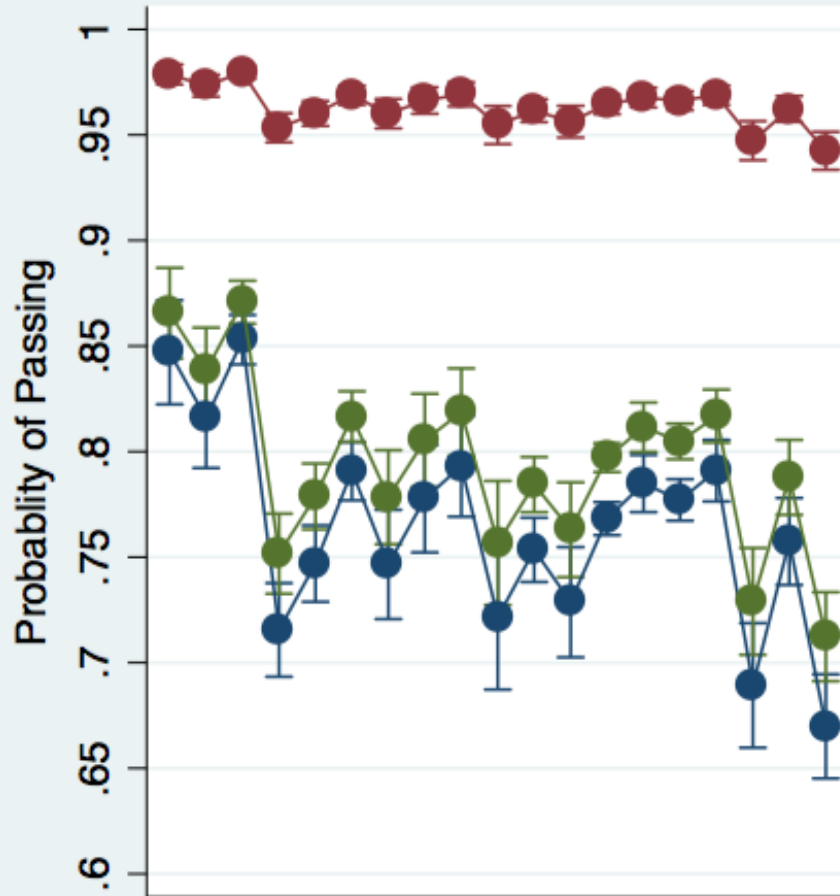
# Concurrent course offerings by sector

	College Algebra			English I	
	CC	UN		CC	UN
Number of students	12,263	1,632		25,053	1,879
% all course enrollments	14%	5%		21%	5%
% Passing	98%	99%		99%	99%
Number schools	18	5		18	4

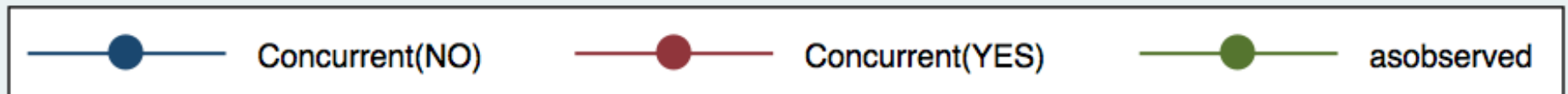
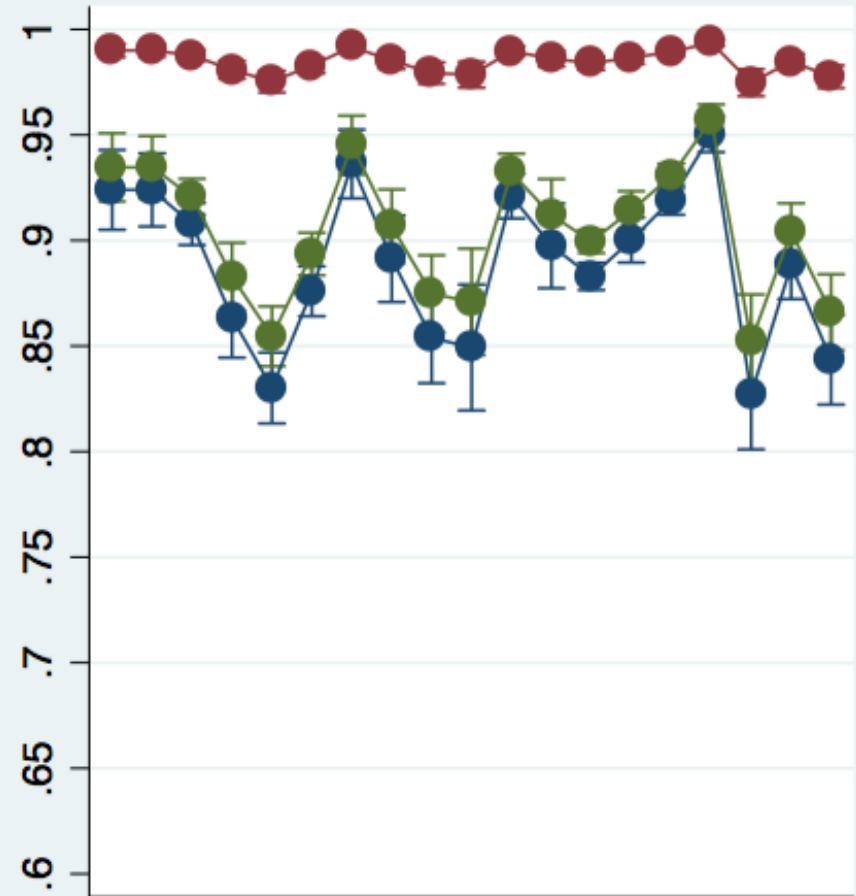


# Algebra pass rates for Community Colleges \*

Includes withdrawals



Excludes withdrawals



\*Adjusted for age, gender minority status, enrollment, ACT participation & concurrent enrollment



# **Section I: Results**

## **Algebra**



# Universities

- ▣ Over 31,000 enrolled for first time in AY 2008-2012
- ▣ Younger students, women, new undergraduates had higher pass rates than those 21 or older, men and previously enrolled students
- ▣ The ACT composite score was a predictor of success especially when including withdrawals
- ▣ Average pass rate was .75 including withdrawals and .84 using just completers



# Community colleges

- ▣ Over 61,000 students enrolled
- ▣ Younger students, women and part time students passed at higher rates than older students, men and full time students.
- ▣ 14% of enrollees were concurrent students
- ▣ Concurrent students passed at rates, on average, 20 points higher than regular college students at .97 versus .77



# Algebra across sectors:

Status and Schools	Predicted probability of passing
<b>Without concurrent students but including withdrawals</b>	
Universities	.76
Community Colleges	.75
<b>Without concurrent students but just completers</b>	
Universities	.85
Community Colleges	.88



# **Section I: Results**

## **English I**



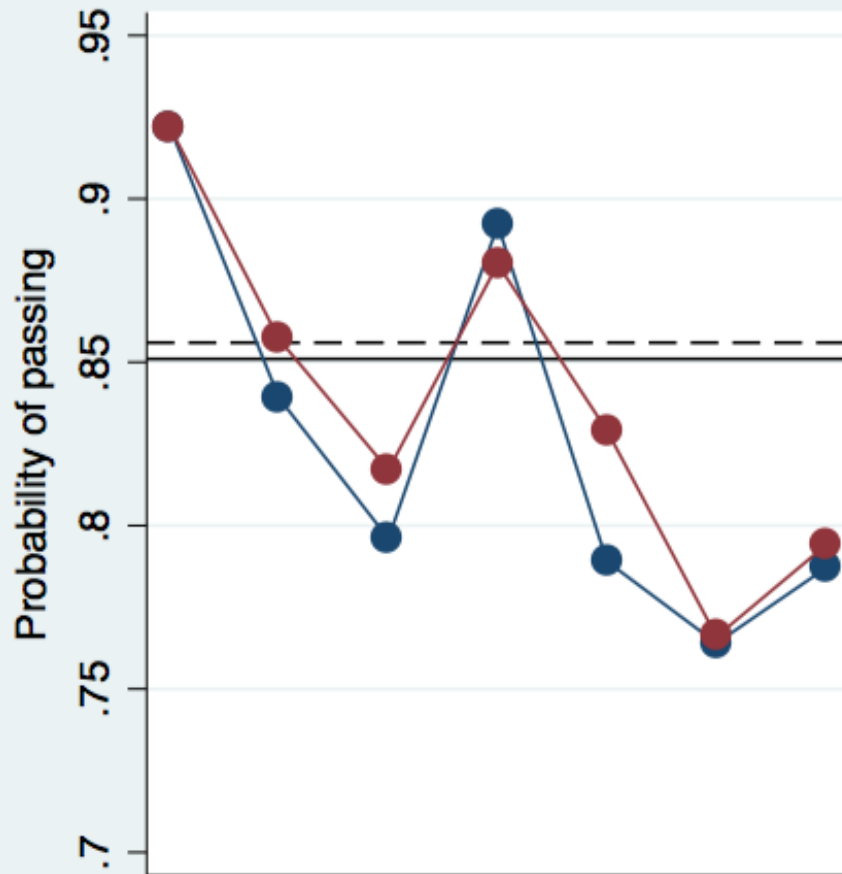
# Universities

- ▣ 39,000 students
- ▣ Students slightly younger than the algebra students (average age 20 versus 21)
- ▣ Five per cent were concurrent students with a 99 per cent pass rate
- ▣ On average pass rates were higher for English I than for algebra

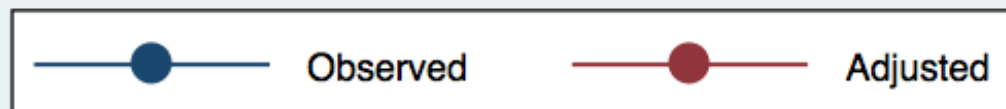
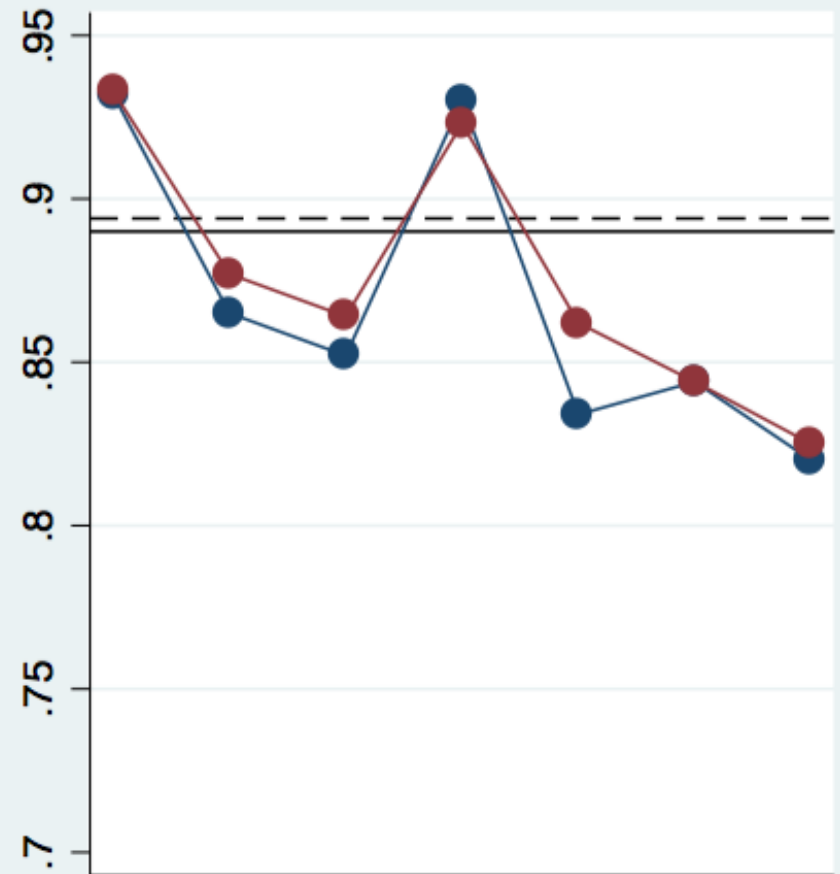


# English Compensation I pass rates for universities\*

## Includes Withdrawals



## Excludes withdrawals



\*Concurrent Students are excluded. Adjusted for age, gender, minority status, enrollment & ACT participation

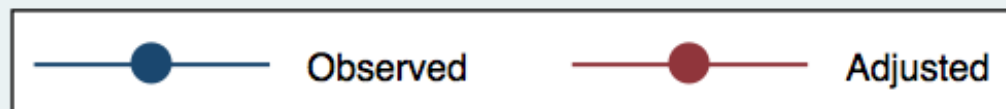
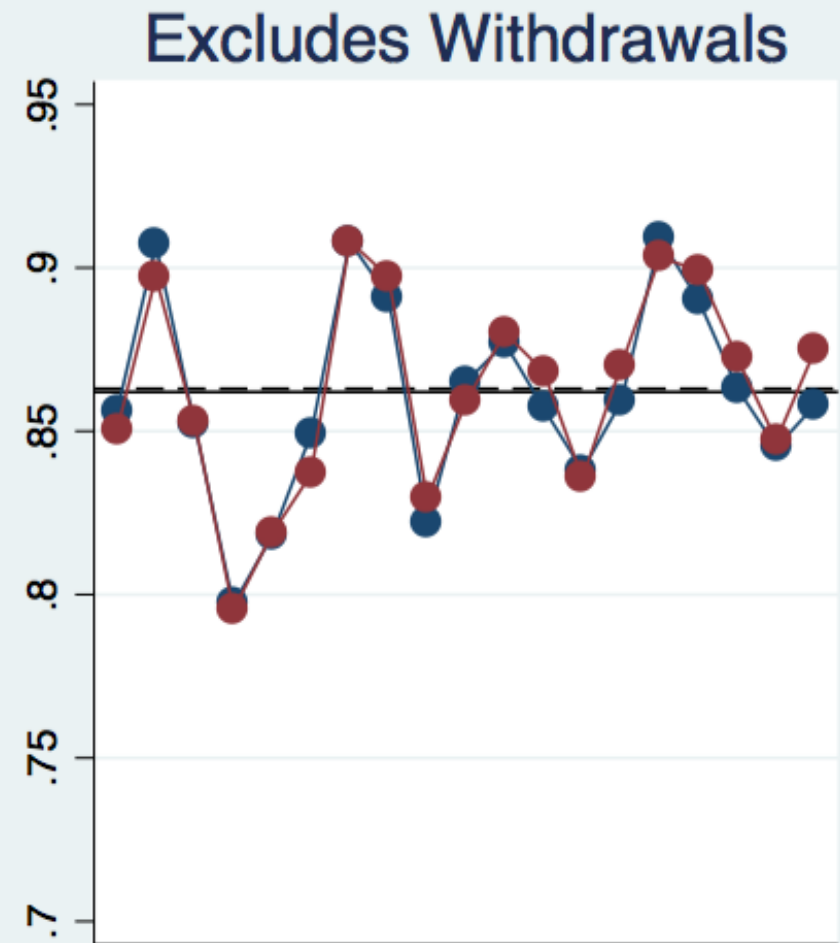
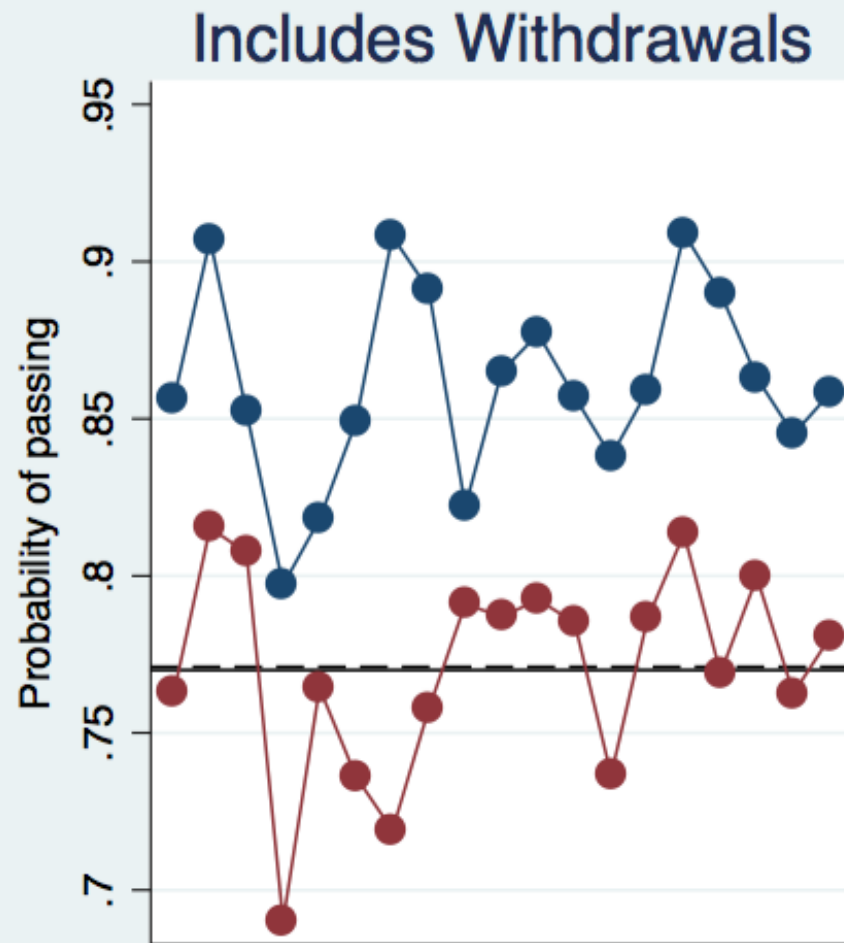


# Community Colleges

- ▣ Almost 94,500 students enrolled
- ▣ 21 % were concurrent enrollments
- ▣ Ten schools reported between 25-50% of their enrollment as concurrent
- ▣ Concurrent students had pass rates 21 points higher than regular students(.99 versus .78) when including withdrawals and 12 points higher when just using those completing the course(.99 versus .87)



# English Composition I pass rates for community colleges\*



\*Concurrent students not included. Adjusted for age, gender, minority status, enrollment, ACT participation



# English I across sectors:

Status and Schools	Predicted probability of passing
<b>Without concurrent students but including withdrawals</b>	
Universities	.84
Community Colleges	.78
<b>Without concurrent students but just completers</b>	
Universities	.88
Community Colleges	.87



# Section II: Passing the second course

**Objective:** Describe pass rates for a second course (advanced) based on the location of the instruction of the first and the second course.

Initial Course	Second Course
College Algebra	Calculus
English Composition I	English Composition II
Biology I and lab	Biology II or another Biology course at higher level
Chemistry I and lab	Chemistry II or another chemistry course at higher level
Physics I and lab	A second physics course at higher level

**Includes students who passed the first course and completed a second course during the five year study period. Withdrawing students are omitted.**



# Passing calculus by original location with Algebra

Enrollment pattern for the two courses	Number enrolled	Percent with pattern	Percent passing course
Both courses at same school	4,102	65.1	89.4
Both within the same sector	4,410	69.9	89.3
Both at a university	2,341	37.1	84.7
Both at a community college	2,069	32.8	94.5
Community college transfer to a university	1,770	28.1	87.9
University transfer to a community college	125	2.0	80.0
All students	6,305		88.7



# Passing second chemistry course by original location of Chemistry I

Enrollment pattern for the two courses	Number enrolled	Percent with pattern	Percent passing course
Both courses at same school	10,365	90.8	94.9
Both within the same sector	10,583	92.3	94.9
Both at a university	7,444	65.2	94.5
Both at a community college	3,094	27.1	95.8
Community college transfer to a university	556	4.9	89.4
University transfer to a community college	323	2.8	92.6
All students	11,417		94.6



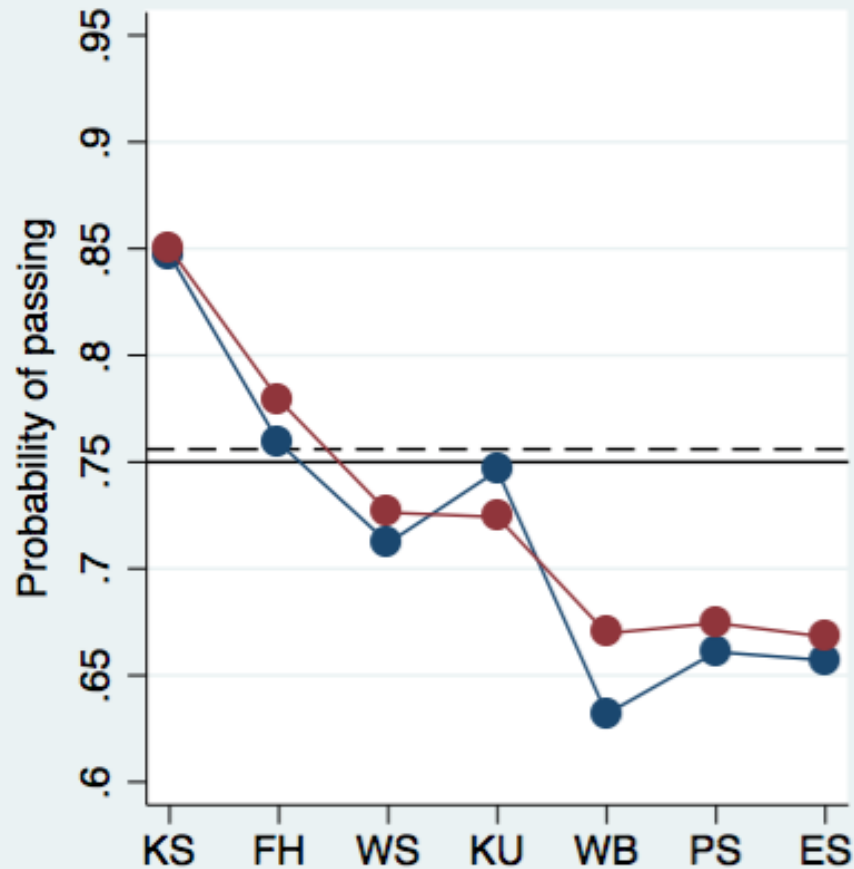
# Passing second physics course by original location of physics I

Enrollment pattern for the two courses	Number enrolled	Percent with pattern	Percent passing course
Both courses at same school	7,503	93.6	97.2
Both within the same sector	7,572	94.5	97.2
Both at a university	6,278	78.3	97.0
Both at a community college	1,294	16.2	98.4
<b>Community college transfer to a university</b>	<b>296</b>	<b>3.7</b>	<b>94.3</b>
<b>University transfer to a community college</b>	<b>146</b>	<b>1.8</b>	<b>98.6</b>
All students	8,014		97.1

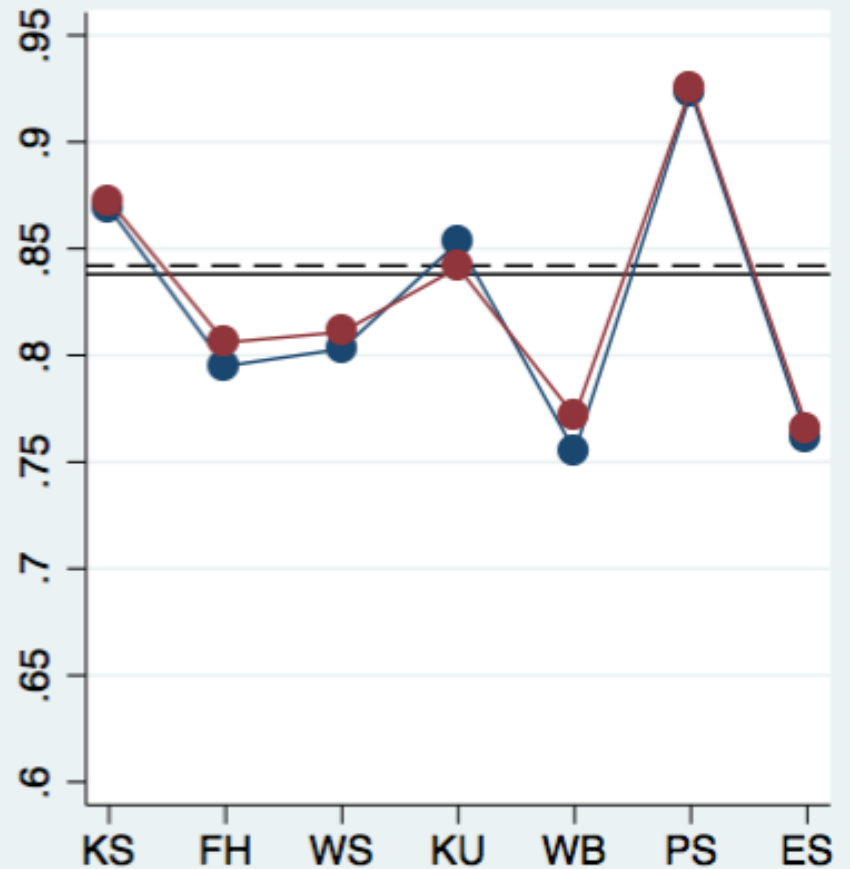


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## Includes Withdrawals



## Excludes withdrawals

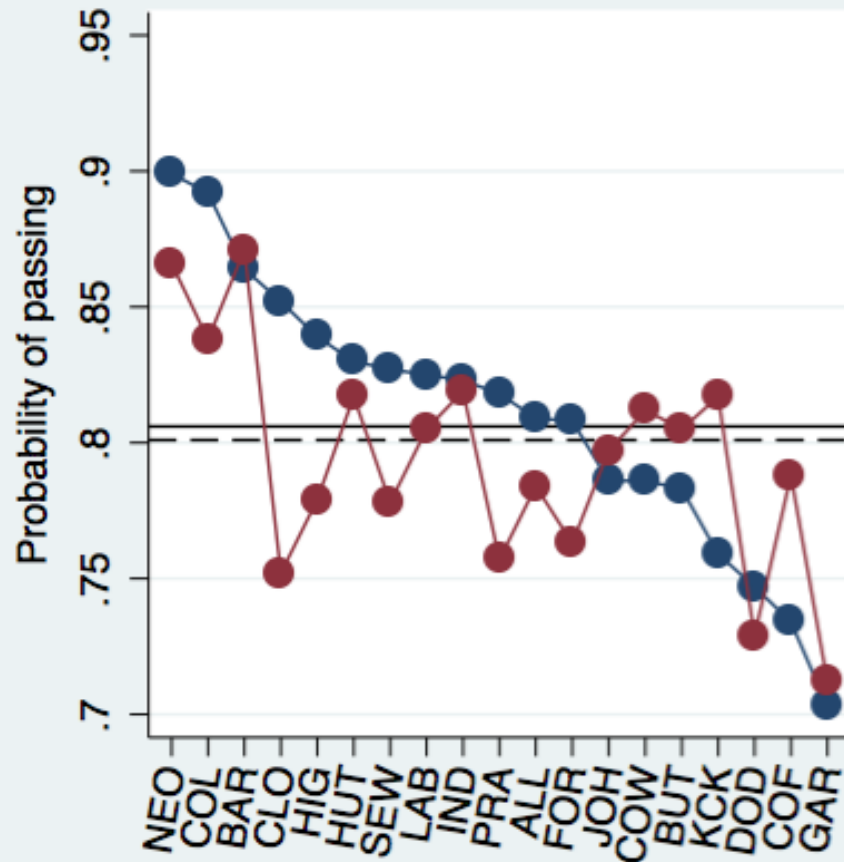


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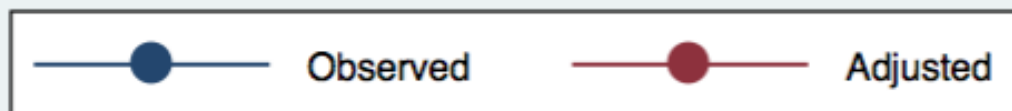
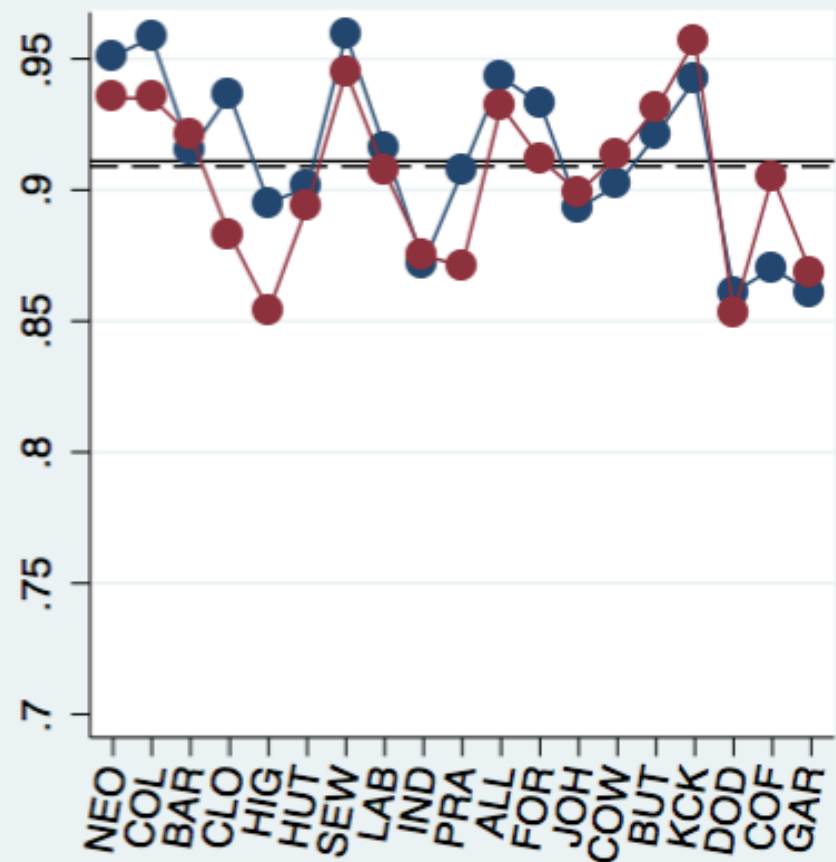


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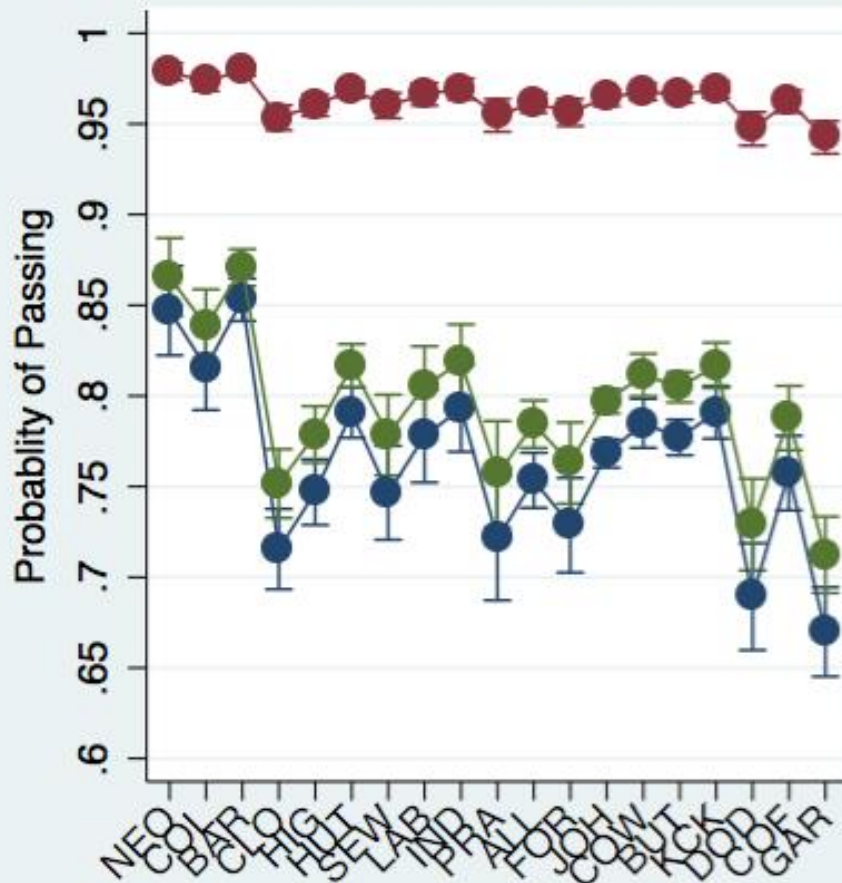


Adjusted for age, gender, minority status, enrollment & concurrent course

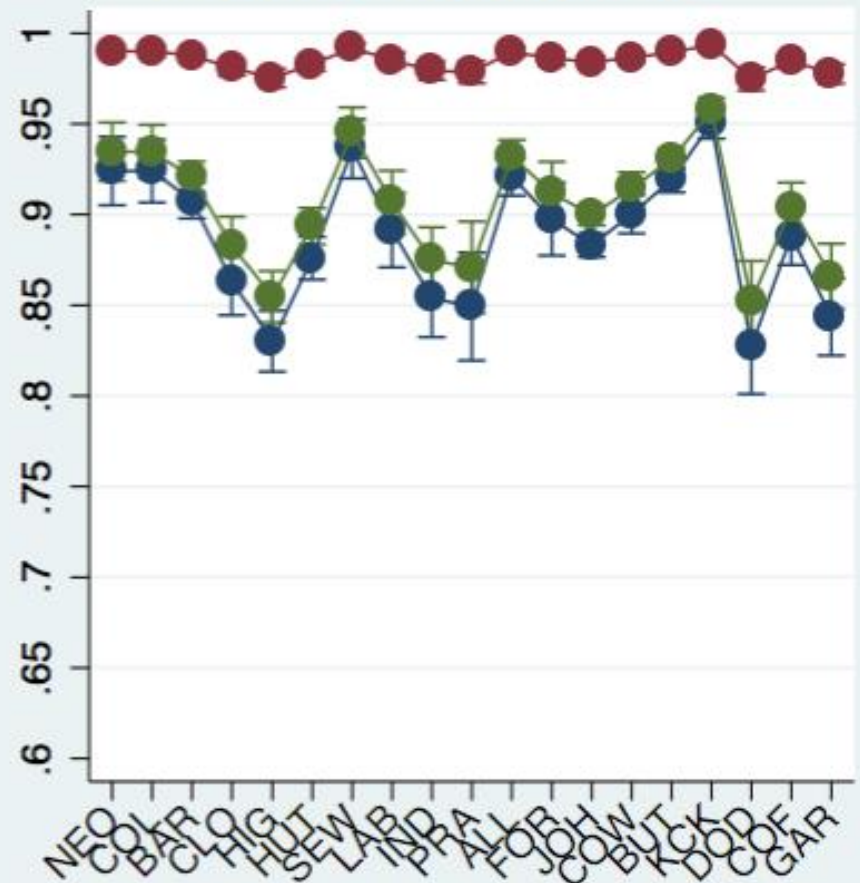


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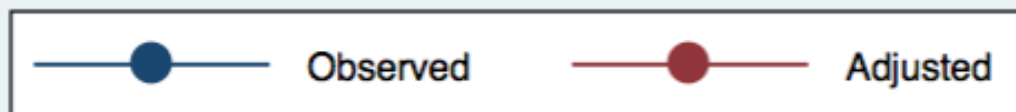
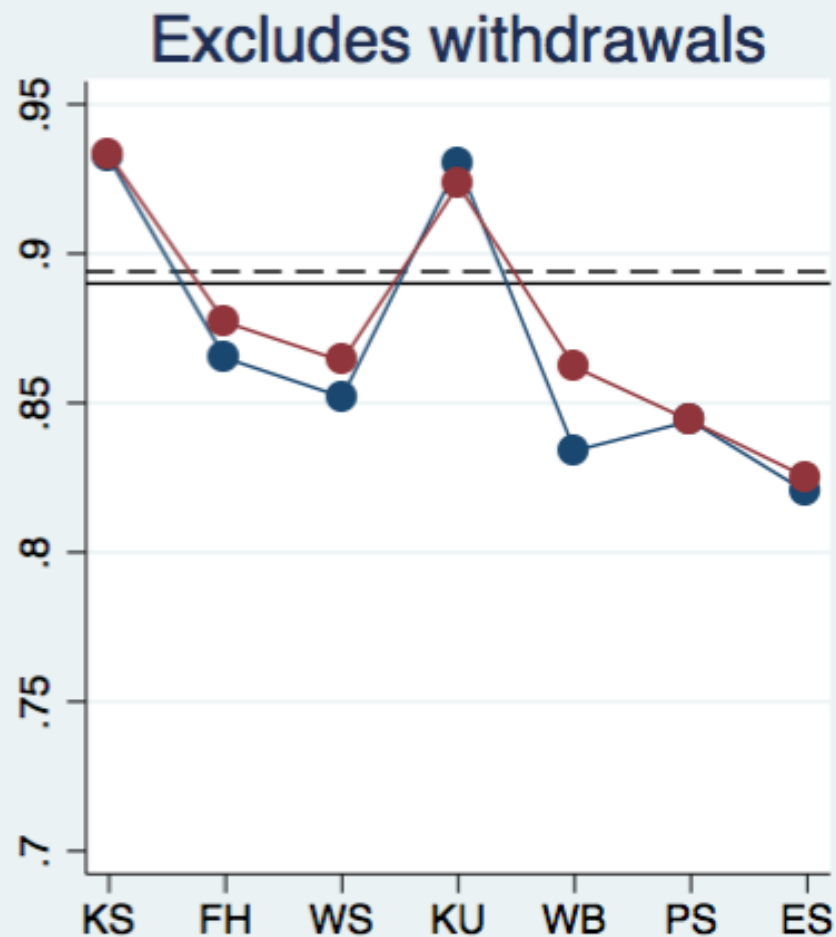
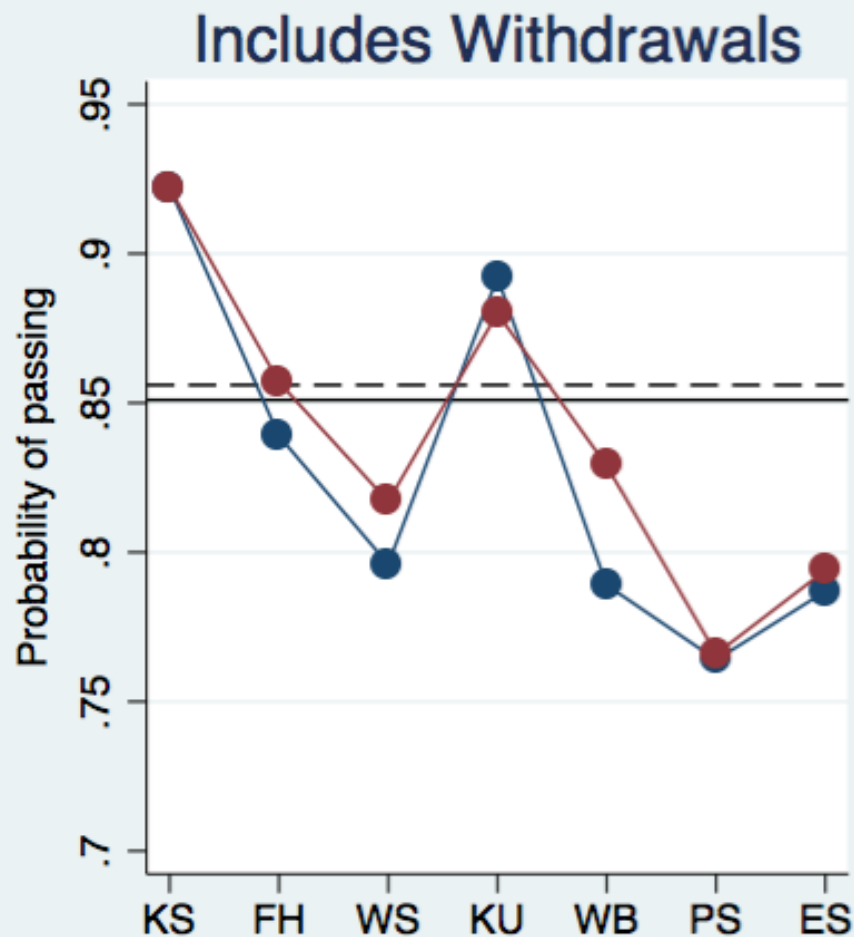


● Concurrent(NO)
 ● Concurrent(YES)
 ● asobserved

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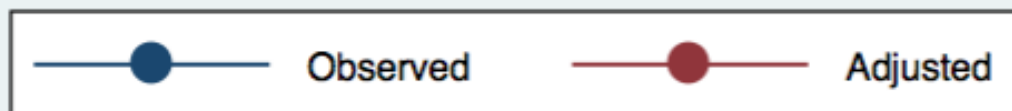
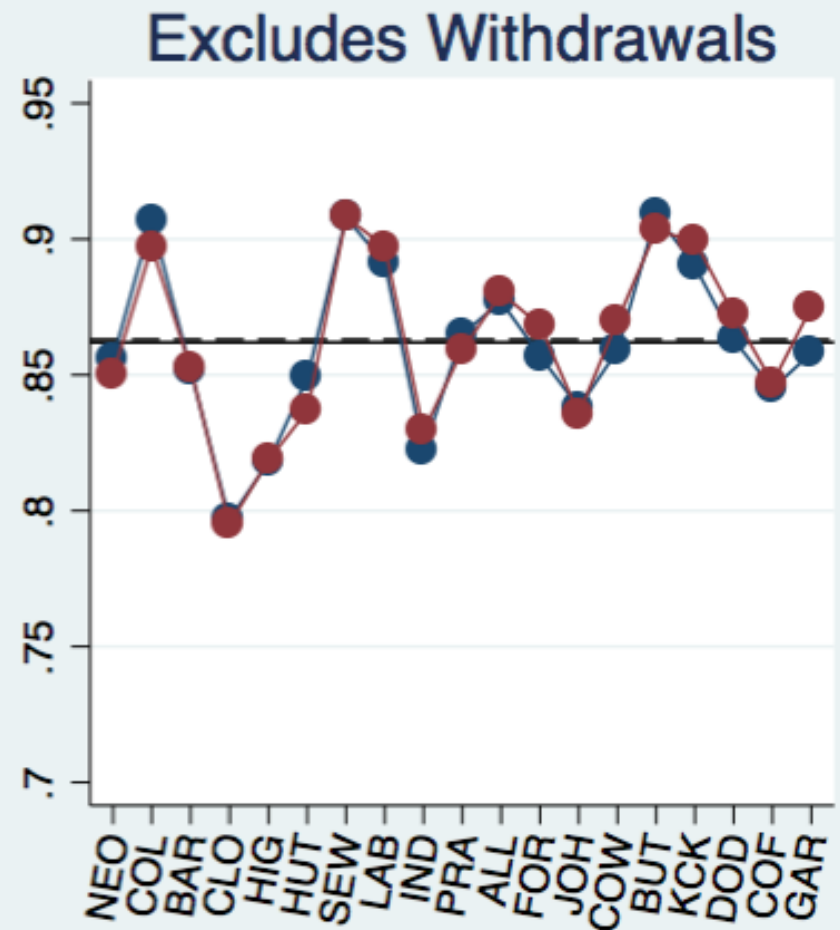
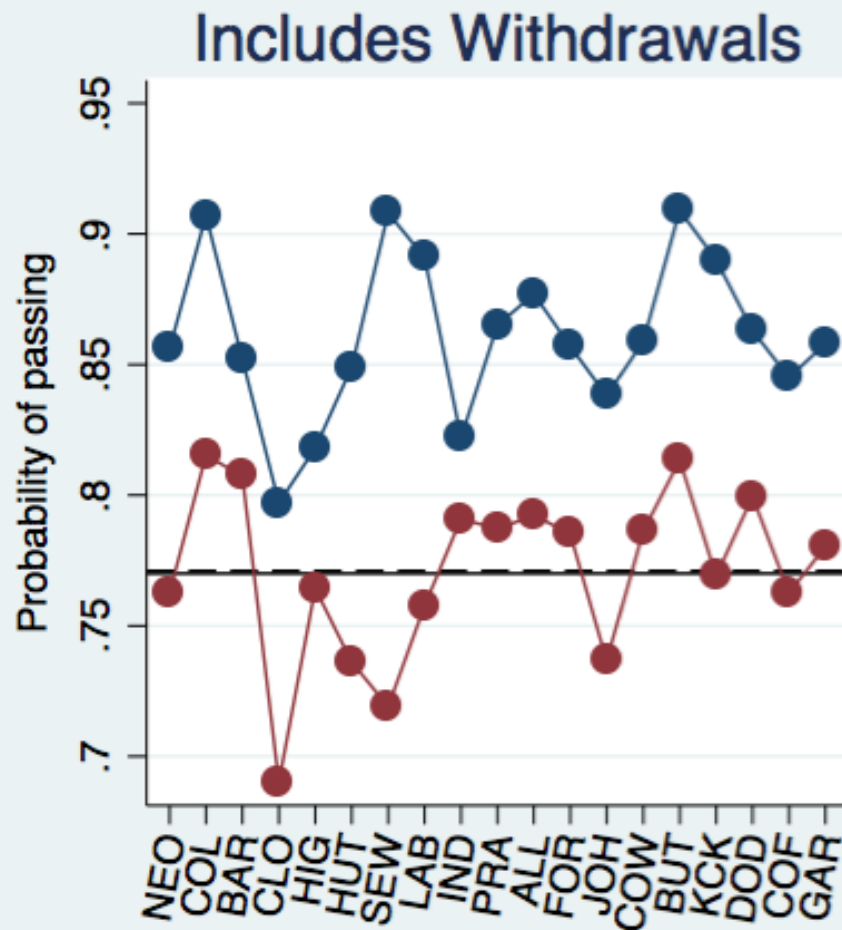
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