College and Career Readiness in Charlotte, NC: An Analysis on Academic Performance, Career Readiness, and Upward Mobility.

Khem Khadka, Cody Scott, and Joshua Hernandez

School of Data Science

University of North Carolina at Charlotte

DTSC 4301

Dr. Tianca Crocker and Dr. Mary Lou Maher

Feburary 27, 2022

College and Career Readiness in Charlotte, NC: An Analysis on Academic Performance, Career Readiness, and Upward Mobility.

Overview

Table 1

Codebook

Variable	Information		
	Years	Type	Description
agency_code	N/A		
school	N/A		
zip_code	N/A		
year	2011–2021		
2019_med_hh_inc	2019		
int_pubsr	2011–2020		
int_commcoll	2011–2020		
int_trdbusnrs	2011–2020		
AP_pass_pct	2014–2020		
AP_part_pct	2014–2020		
CTE_cred_pct	2018–2020		
CTE_enroll_pct	2018–2020		
enroll_Disadvantaged	2011–2019		

[a]See Table A4 & A5 for all subgroups.

[b]See Table A1 for all graduate intention definitions.

Hypotheses

Hypothesis 1 *As the number and quality of mentors increase, there will be an increase in academic performance and college acceptance rates for low-socioeconomic*

students.

Hypothesis 2 *As the quality and number of mentors increase, there will be an increase in obtained CTE Credentials by students within Charlotte Mecklenburg County Schools.*

Data Description

Analysis

Conclusion

Appendix A

Table A1

Intentions Dictionary

Intention Abbreviation	Intention Full
int_employ	Employment
int_military	Military
int_other	Other
int_commcoll	Community College
int_privjr	Private Junior Institution
int_privsr	Private Senior Institution
int_pubsr	Public Senior Institution
int_tradesch	Trade/Business School

Table A2

Codebook

Variable	Years	Type	Description
agency_code	N/A		
school	N/A		
zip_code	N/A		
year	2011–2021		
2019_med_hh_inc	2019		
int_pubsr	2011–2020		
int_commcoll	2011–2020		
int_trdbusnrs	2011–2020		
AP_pass_pct	2014–2020		
AP_part_pct	2014–2020		
CTE_cred_pct	2018–2020		
CTE_enroll_pct	2018–2020		
enroll_Disadvantaged	2011–2019		

[a]See Table A4 & A5 for all subgroups.

[b]See Table A1 for all graduate intention definitions.

Table A3

Identifier Variables

Identifier	Information		
	Type	Use	Description
		I.D. Variables	
School Name	String	Identify school by name	Full name of the high school
School Zip Code	String	Assign median household income	Five-digit postal code
School Agency Code	String	Join separate data	Six-digit DPI code
Year	String	Join separate data	Year of the data
Household Median Income	Integer	Identify low-income areas	Median income of the zip code for the year 2019

Table A4

Summary Statistics

Variable	Statistics					
	Count	Mean	Std	Min	Max	Missing
AP_pass_pct	136.0	0.43	0.23	0.05	0.84	0.04
AP_part_pct	138.0	0.22	0.13	0.0	0.57	0.03
total_counselors	142.0	440.77	46.77	361.0	508.0	0.0
int_employ	142.0	11.24	2.66	8.3	15.0	0.0
int_military	142.0	2.6	0.3	2.2	3.0	0.0
int_other	142.0	1.75	0.81	1.0	3.1	0.0
int_commcoll	142.0	33.81	1.92	31.3	36.9	0.0
int_privjr	142.0	0.33	0.11	0.2	0.5	0.0
int_privsr	142.0	8.75	0.63	7.8	9.5	0.0
int_pubsr	142.0	40.58	1.48	38.4	43.4	0.0
int_tradesch	142.0	0.9	0.15	0.7	1.1	0.0

Table A5

Summary Statistics

Variable	Statistics					
	Count	Mean	Std	Min	Max	Missing
enroll_All	42.0	0.63	0.17	0.34	0.95	0.7
enroll_AmericanIndian	0.0	nan	nan	nan	nan	1.0
enroll_Asian	31.0	0.52	0.31	0.06	0.95	0.78
enroll_Black	88.0	0.41	0.21	0.06	0.95	0.38
enroll_Disadvantaged	63.0	0.36	0.19	0.07	0.85	0.56
enroll_EnglishLearners	12.0	0.3	0.16	0.05	0.55	0.92
enroll_Female	91.0	0.48	0.19	0.15	0.92	0.36
enroll_Hispanic	65.0	0.25	0.19	0.05	0.7	0.54
enroll_Male	87.0	0.4	0.18	0.11	0.84	0.39
enroll_Twoormore	13.0	0.65	0.21	0.05	0.93	0.91
enroll_PacificIslander	0.0	nan	nan	nan	nan	1.0
enroll_Disabilities	16.0	0.39	0.12	0.24	0.66	0.89
enroll_White	63.0	0.52	0.25	0.05	0.91	0.56
CTE_cred_pct	19.0	16.26	14.95	0.0	54.0	0.87
CTE_enroll_pct	69.0	65.91	14.8	22.12	97.99	0.51

Appendix B

Figure B1

AP Participation Percent over Time
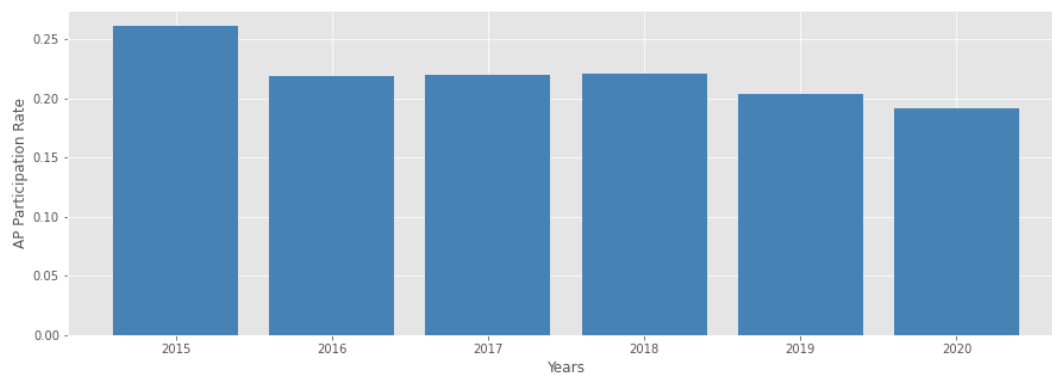

Figure B2

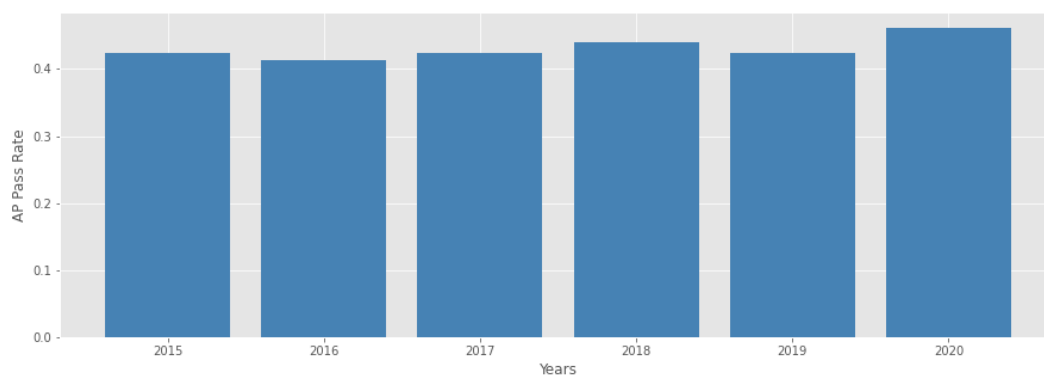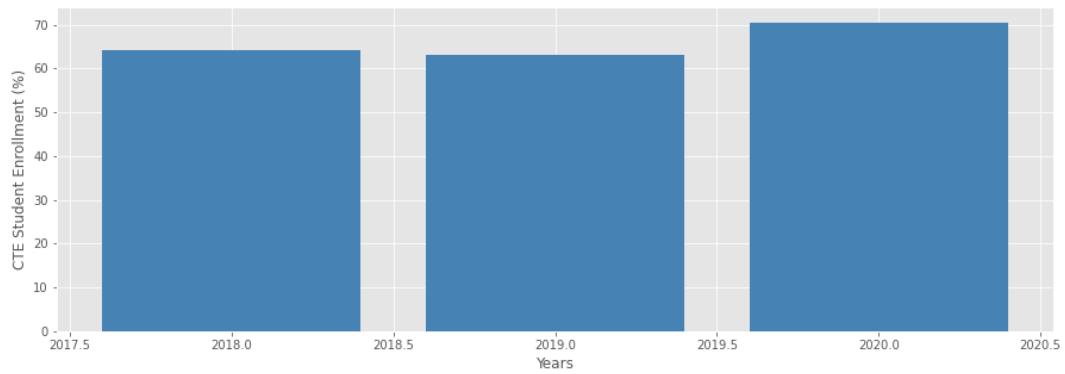*AP Pass Rate over Time*

Figure B3

CTE Student Enrollment over Time

Figure B4

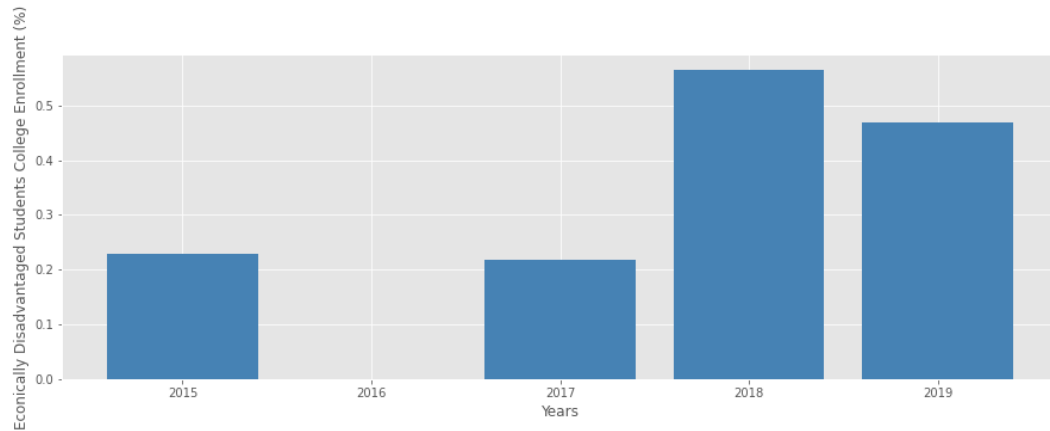*Economically Disadvantaged Students College Enrollment over Time*

Figure B5

Number of Counselors at District Level