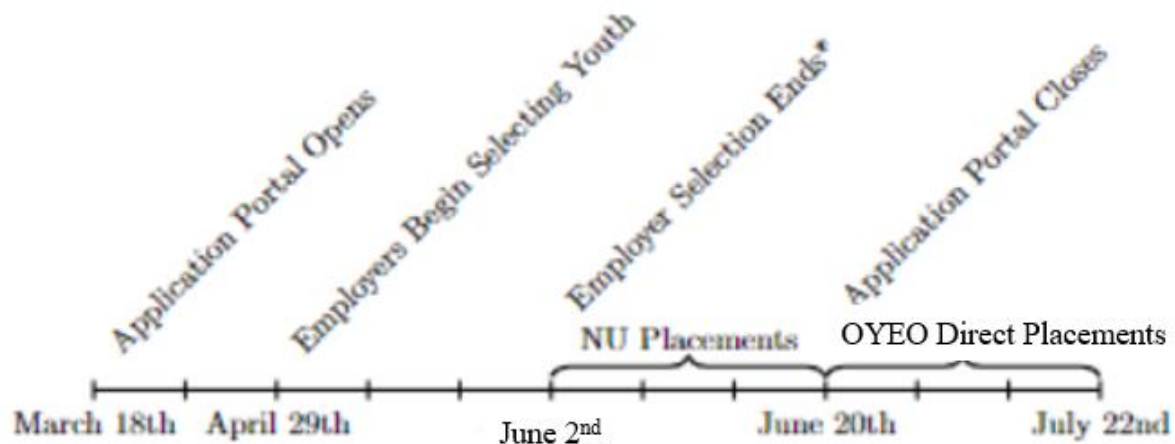


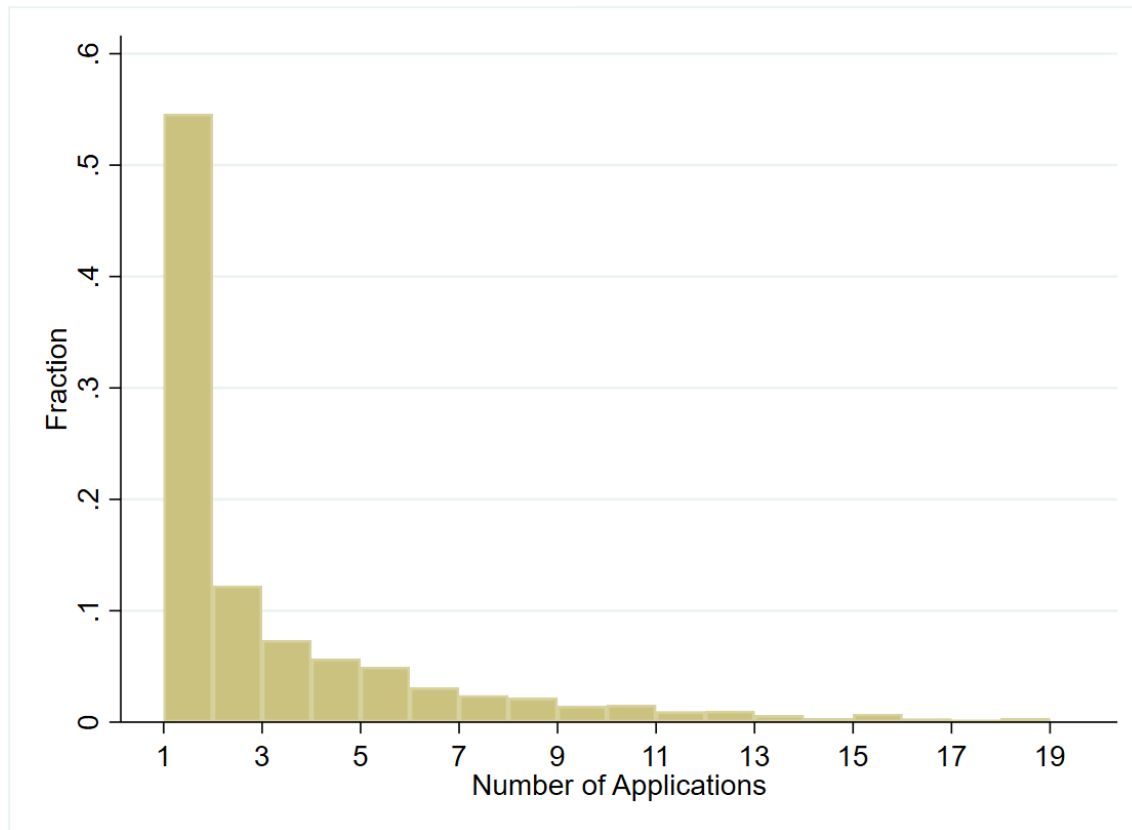
Figure 1: DYEE Job Application Timeline, Summer 2022



Source: Authors' depiction based on information regarding the application, screening, and hiring process for "direct" employer partners from the City of Boston's Office of Youth Employment and Opportunity.

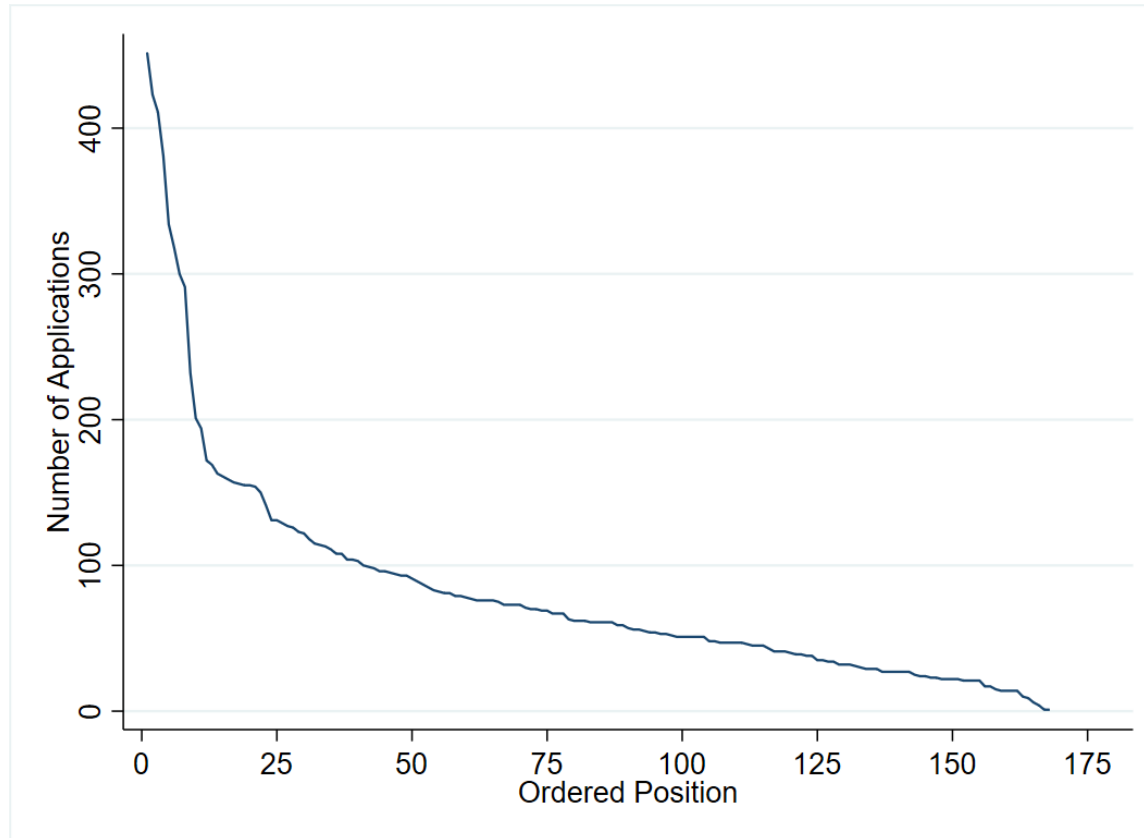
Notes: *Some employers were allowed to make selections after the June 2nd deadline. These included STRIVE Madison, STRIVE Wentworth Training Program, BCYF - SOAR Boston, Hawthorne Youth and Community Center, WriteBoston, STRIVE: Document Imaging Service Center, and Boston Parks and Recreation departments.

Figure 2: Histogram of Number of Applications Submitted per Youth, Summer 2022



Source: Authors' calculations based on data from the City of Boston's Office of Youth Employment and Opportunity.
Note: The histogram shows the distribution of youth by the number of job applications they submitted as of June 15th.

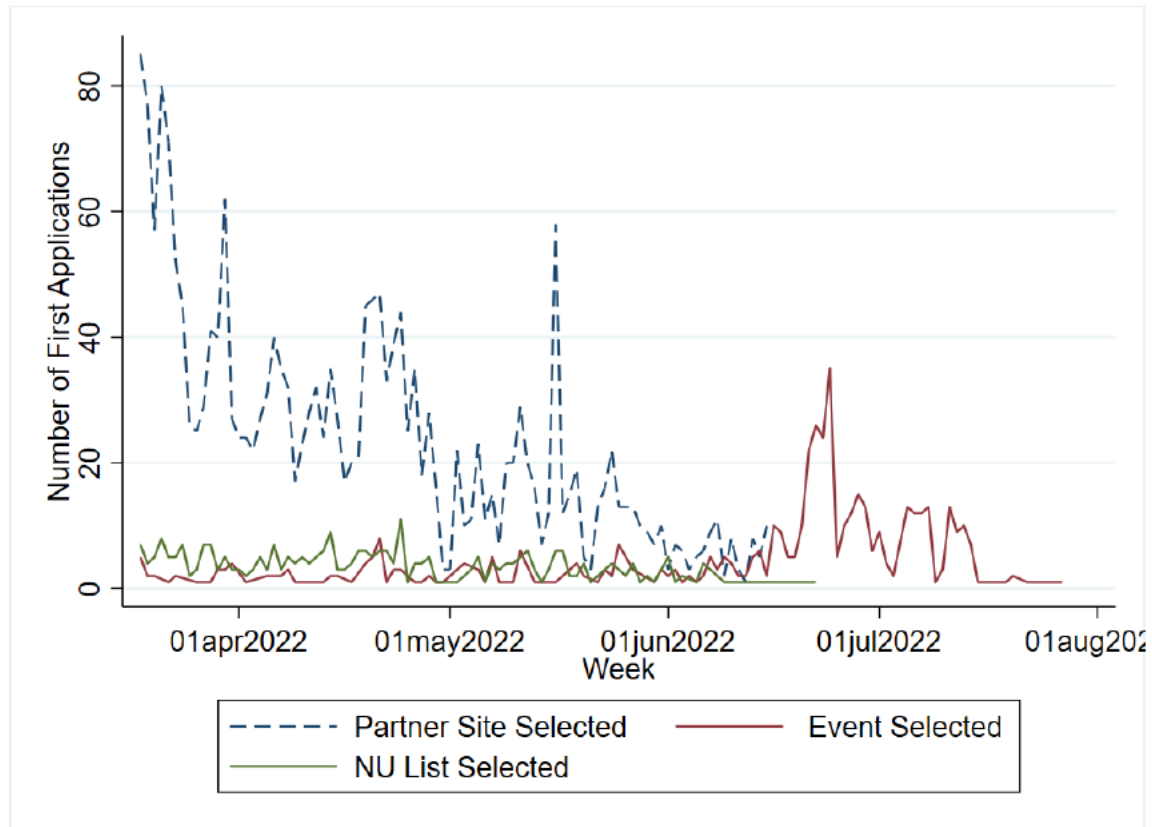
Figure 3: Distribution of Number of Youth Applications per Job Slot



Source: Authors' calculations based on data from the City of Boston's Office of Youth Employment and Opportunity.

Note: As of June 15th, the top 6 partner sites who received the greatest number of applications were YMCA Dorchester (354), YMCA Roxbury (344), Boy & Girls Clubs of Dorchester (324), YMCA Hyde Park (312), YMCA West Roxbury (259), and Zoo New England (234). The bottom 6 sites who received the least number of applications were STRIVE: DISC (4), WriteBoston (1), Boston Public Library Roxbury (1), Immigrant Family Services Institute (0), Boston Public Library Codman Square (0), and Boston Public Library Parker Hill (0).

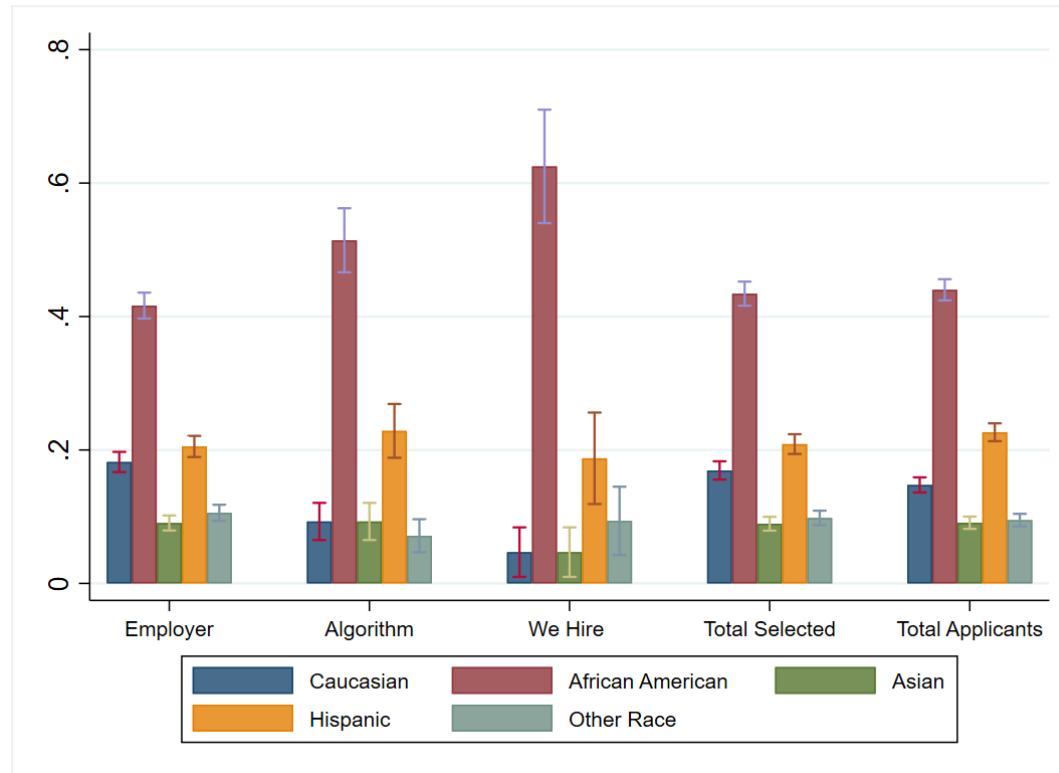
Figure 4: Number of Youth Applying to the Program by Date of First Application



Source: Authors' calculations based on data from the City of Boston's Office of Youth Employment and Opportunity.

Note: The dashed blue line represents youth selected by an employer, the green solid line represents those selected by the research team's job matching algorithm, and the red solid line represents those selected at the City's "We Hire" event.

Figure 5: Racial Composition of Selected Youth by Employer versus DYEE versus Total Applicants



Source: Authors' calculations based on data from the City of Boston's Office of Youth Employment and Opportunity.
 Note: The sample includes youth who submitted a valid application by June 15th.

Table 1: Estimated Number of City of Boston SuccessLink Jobs Left Unfilled each Summer

	2017	2018	2019	2020
Number of Positions Available	3133	3189	3025	4057
Number of Positions Filled	2848	2587	2637	3477
Number of Positions Unfilled	285	602	388	580
Percent of Positions Unfilled	9.1%	18.9%	12.8%	14.3%

Source: Office of Youth Employment and Opportunity.

Table 2: Difference in the Racial Distribution of Youth Applicants versus Hires for SuccessLink Jobs

	Percentage Point Difference: Share of hiring pool minus share of applicant pool			
	2017	2018	2019	2020
White (Not Hispanic or Latino)	5.47	4.01	3.75	2.56
Asian (Not Hispanic or Latino)	-1.51	-1.77	-0.61	1.99
Black or African American (Not Hispanic or Latino)	0.15	1.40	-0.85	-1.77
Hispanic or Latino	-3.53	-3.26	-1.71	-2.46
Two or More Races (Not Hispanic or Latino)	0.13	-0.06	-0.27	0.00

Source: Office of Youth Employment and Opportunity.

Table 3: Descriptive Statistics for Youth who have Completed at Least One Valid Job Application

	Mean	Std. Dev.	Count
Age	16.7	1.366	3,727
African American	0.44	0.496	3,761
White	0.15	0.355	3,761
Hispanic or Latino	0.23	0.419	3,761
Asian	0.091	0.288	3,761
Other Race	0.095	0.293	3,761
Female	0.49	0.500	3,761
Fluent in Another Language	0.33	0.469	3,652
First Language English	0.84	0.363	3,652
Attends Exam School	0.23	0.420	3,418
Continuing Candidate	0.097	0.296	3,762
Previously Participated	0.26	0.440	3,762
Number of Applications	3.04	3.744	3,762
Avg Num of Other Apps Per Slot	8.92	12.32	3,762
Earliest App Submitted in March	0.28	0.447	3,762
Earliest App Submitted in April	0.36	0.479	3,762
Earliest App Submitted in May	0.23	0.420	3,762
Earliest App Submitted in June	0.14	0.346	3,762
Recorded Resume Response	0.53	0.499	3,762
Avg Resume Character Length	5976.8	3629.1	3,027
Avg Work Question Length	308.4	280.4	3,143

Source: Authors' calculations based on data from the City of Boston's Office of Youth Employment and Opportunity.

Note: This sample includes youth who submitted at least one valid application by June 15th. Counts vary across variables reported as some variables are missing for youth.

Table 4: Relationship between Youth Characteristics and Number of Applications Submitted

	(1)	(2)	(3)	(4)
Age 15	-0.48*	-0.50*	-0.51*	-0.54*
	(-1.73)	(-1.78)	(-1.81)	(-1.92)
Age 16	-0.83***	-0.85***	-0.80***	-0.81***
	(-2.95)	(-3.02)	(-2.80)	(-2.82)
Age 17	-1.28***	-1.29***	-1.21***	-1.25***
	(-4.43)	(-4.47)	(-4.12)	(-4.18)
Age 18	-1.38***	-1.39***	-1.30***	-1.35***
	(-4.57)	(-4.59)	(-4.16)	(-4.28)
Age 19	-1.53***	-1.50**	-1.43**	-1.35**
	(-2.62)	(-2.56)	(-2.39)	(-2.21)
Age 20 or Older	-1.32**	-1.28**	-1.22**	-1.21*
	(-2.20)	(-2.12)	(-1.97)	(-1.90)
African American	1.12***	1.22***	1.20***	1.20***
	(6.12)	(6.44)	(6.29)	(5.51)
Hispanic or Latino	0.95***	1.05***	1.02***	1.02***
	(4.39)	(4.73)	(4.55)	(4.21)
Asian	0.68**	0.61**	0.58**	0.74**
	(2.54)	(2.25)	(2.16)	(2.55)
Other Race	1.42***	1.48***	1.47***	1.50***
	(5.65)	(5.86)	(5.76)	(5.56)
Female	0.40***	0.38***	0.38***	0.38***
	(3.31)	(3.14)	(3.14)	(3.08)
Fluent in Another Language	-0.09	-0.09	-0.10	-0.07
	(-0.60)	(-0.65)	(-0.66)	(-0.45)
Enrolled in School		0.63	0.64	0.53
		(0.85)	(0.86)	(0.69)
Attends Exam School		0.33*	0.33*	0.27
		(1.95)	(1.95)	(1.58)
Previously Participated			-0.26*	-0.26*
			(-1.69)	(-1.65)
Continuing Candidate			0.19	0.18
			(0.61)	(0.59)
Constant	2.39	2.33	2.36	2.11
	(0.64)	(0.62)	(0.63)	(0.39)
Observations	3,762	3,762	3,762	3,762
Postal Code Controls	No	No	No	Yes

Source: Authors' calculations based on data from the Boston Office of Youth Employment and Opportunity.

Note: Age fourteen or younger, male, and white are omitted categorical variables. Although not reported here, we also include the following variables as controls: a dummy variable for whether or not the youth reported their gender and race (columns 1-4), a dummy variable if the youth chose to opt out of reporting their gender (columns 1-4), a dummy variable indicating if the youth recorded a secondary language (columns 1-4), a dummy variable indicating if the youth recorded their school enrollment status (columns 2-4), a dummy variable indicating if the youth recorded their school name (columns 2-4), a dummy variable indicating if the youth recorded previous SYEP status (columns 3-4), a set of dummy variables for earliest application date (columns 1-4), and a set of dummy variables for youth ZIP code (column 4).

Table 5: Relationship between Youth Characteristics and Likelihood of being Selected by an Employer

	(1)	(2)	(3)	(4)	(5)	(6)
African American	-0.15*** (-5.64)	-0.15*** (-5.57)	-0.13*** (-4.84)	-0.12*** (-4.55)	-0.12*** (-4.46)	-0.08*** (-3.29)
Hispanic or Latino	-0.17*** (-6.23)	-0.18*** (-5.98)	-0.16*** (-5.33)	-0.15*** (-4.95)	-0.13*** (-4.47)	-0.08*** (-2.94)
Asian	-0.17*** (-5.12)	-0.18*** (-4.98)	-0.20*** (-5.49)	-0.19*** (-5.28)	-0.17*** (-5.01)	-0.13*** (-3.93)
Other Race	-0.05* (-1.66)	-0.05 (-1.56)	-0.04 (-1.27)	-0.05 (-1.38)	-0.05* (-1.66)	-0.03 (-0.91)
Age 15	0.03 (0.97)	0.03 (0.95)	0.03 (0.83)	0.03 (0.84)	0.07** (2.02)	0.07** (2.14)
Age 16	0.08** (2.16)	0.08** (2.17)	0.07** (1.96)	0.04 (1.19)	0.10*** (2.94)	0.11*** (3.26)
Age 17	0.09** (2.39)	0.09** (2.41)	0.08** (2.25)	0.04 (1.20)	0.11*** (3.20)	0.12*** (3.57)
Age 18	0.10*** (2.71)	0.10*** (2.68)	0.10** (2.55)	0.05 (1.30)	0.11*** (3.03)	0.11*** (3.12)
Age 19	0.30*** (4.36)	0.22*** (3.05)	0.22*** (2.98)	0.17** (2.26)	0.24*** (3.33)	0.26*** (3.79)
Age 20 or Older	0.30*** (4.70)	0.16** (2.06)	0.16** (2.06)	0.11 (1.38)	0.17** (2.32)	0.21*** (2.88)
Female	-0.00 (-0.15)	0.00 (0.02)	-0.00 (-0.29)	-0.01 (-0.40)	-0.00 (-0.08)	0.00 (0.26)
Fluent in Another Language		0.00 (0.04)	-0.00 (-0.00)	-0.00 (-0.02)	-0.00 (-0.24)	-0.01 (-0.31)
Enrolled in School		0.21** (2.28)	0.18** (1.97)	0.17* (1.82)	0.11 (1.25)	0.08 (0.93)
Attends Exam School			0.07*** (3.28)	0.07*** (3.32)	0.07*** (3.38)	0.06*** (3.32)
Previously Participated				0.10*** (5.37)	0.09*** (5.12)	0.06*** (3.49)
Number of Applications					0.02*** (10.54)	0.02*** (10.44)
Avg Num of Other Apps Per Slot					-0.01*** (-13.98)	-0.01*** (-12.76)
Recorded Resume Response						-0.28*** (-8.90)
Avg Resume Character Length						0.00*** (10.04)
Avg Resume Flesch Score						0.01*** (14.54)
Avg Work Question Length						0.00*** (2.83)
Avg Work Question Flesch Score						-0.00 (-0.01)
Constant	0.29 (0.44)	0.08 (0.13)	0.11 (0.17)	0.07 (0.10)	-0.06 (-0.09)	1.00 (1.62)
Observations	3,762	3,762	3,762	3,762	3,762	3,762

Source: Authors' calculations based on data from the Boston Office of Youth Employment and Opportunity.

Note: The sample includes youth who submitted at least one complete and valid job application prior to the employer selection deadline. The dependent variable is equal to one if the youth was selected for employment by at least one employer and is equal to zero otherwise. Omitted categorical variables are youth aged fourteen, white, and male. The ‘other race’ category includes American Indian or Alaska Native, Native Hawaiian or Pacific Islander, two or more races, or opt out of reporting race. Although not reported here, we include the following as controls in the regression: a dummy variable indicating if the youth reported their birth date, their gender and race, their enrollment status, their school name, their previous SYEP status, being fluent in a secondary language, their earliest application date, whether they completed the open-ended text question. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Descriptive Statistics by Selection Method: Employer versus NU Job Matching Algorithm

	(1) Employer Selected	(2) NU Selected	(3) Employer + NU Selected	(4) Total Applicants	(5) Diff. Employer and NU	(6) Diff. Selected and Applied
Age	16.8 (1.392)	16.8 (1.181)	16.8 (1.370)	16.7 (1.366)	0.088 (0.083)	0.121*** (0.034)
White	0.18 (0.386)	0.094 (0.292)	0.17 (0.378)	0.15 (0.355)	0.088*** (0.023)	0.025** (0.009)
African American	0.42 (0.493)	0.52 (0.500)	0.43 (0.495)	0.44 (0.496)	-0.108*** (0.030)	-0.012 (0.012)
Asian	0.091 (0.287)	0.087 (0.283)	0.090 (0.287)	0.091 (0.288)	0.003 (0.017)	-0.001 (0.007)
Hispanic or Latino	0.21 (0.404)	0.25 (0.431)	0.21 (0.407)	0.23 (0.419)	-0.041 (0.025)	-0.017 (0.010)
Other Race	0.11 (0.308)	0.049 (0.215)	0.100 (0.299)	0.095 (0.293)	0.057** (0.018)	0.005 (0.007)
Female	0.48 (0.500)	0.47 (0.500)	0.48 (0.500)	0.49 (0.500)	0.012 (0.030)	-0.005 (0.012)
Attends Exam School	0.26 (0.437)	0.22 (0.415)	0.25 (0.435)	0.23 (0.420)	0.038 (0.028)	0.025* (0.011)
Fluent in Another Language	0.31 (0.462)	0.34 (0.475)	0.31 (0.464)	0.33 (0.469)	-0.034 (0.028)	-0.012 (0.012)
Number of Applications	3.33 (4.188)	3.62 (3.088)	3.37 (4.082)	3.04 (3.744)	-0.288 (0.246)	0.325*** (0.097)
Avg. Num of Other Apps Per Slot	6.65 (7.165)	9.82 (9.598)	7.00 (7.536)	8.92 (12.32)	-3.178*** (0.451)	-1.924*** (0.263)
Earliest App Submitted in March	0.31 (0.462)	0.23 (0.421)	0.30 (0.458)	0.28 (0.447)	0.078** (0.028)	0.023* (0.011)
Earliest App Submitted in April	0.36 (0.479)	0.43 (0.496)	0.37 (0.482)	0.36 (0.479)	-0.073* (0.029)	0.009 (0.012)
Earliest App Submitted in May	0.19 (0.395)	0.29 (0.454)	0.20 (0.403)	0.23 (0.420)	-0.094*** (0.024)	-0.025* (0.010)
Earliest App Submitted in June	0.14 (0.348)	0.052 (0.222)	0.13 (0.337)	0.14 (0.346)	0.089*** (0.020)	-0.008 (0.009)
Recorded Resume Response	0.51 (0.500)	0.58 (0.495)	0.52 (0.500)	0.53 (0.499)	-0.065* (0.030)	-0.014 (0.012)
Completed Work Question	0.81 (0.393)	0.87 (0.333)	0.82 (0.387)	0.83 (0.373)	-0.064** (0.023)	-0.016 (0.009)
Avg. Resume Character Length	5493.0 (3071.4)	7271.6 (4124.6)	5721.8 (3279.6)	5977.0 (3629.3)	-1.8e+03*** (201.884)	-255.287** (96.621)
Avg. Resume Flesch Score	-9.14 (40.11)	-37.3 (47.55)	-12.8 (42.20)	-18.5 (44.77)	28.156*** (2.575)	5.725*** (1.212)
Avg. Work Question Length	333.8 (289.1)	310.4 (313.1)	331.0 (292.1)	308.4 (280.4)	23.384 (18.919)	22.608** (7.833)
Avg. Work Question Flesch Score	67.9 (29.48)	66.0 (37.82)	67.7 (30.58)	68.3 (27.57)	1.892 (1.981)	-0.669 (0.793)
Observations	2,495	309	2,804	3,762		

Source: Authors' calculations based on data from the Boston Department of Youth Engagement and Employment.

Note: This sample includes youth who applied before the deadline of June 15th. Column 1 reports the averages for youth who were selected for employment by at least one employer. Column 2 reports the averages for youth who were selected by the NU job matching algorithm and were not selected by an employer partner.. Column 3 reports the averages of youth selected either by an employer partner or by the NU job matching algorithm. Column 4 contains the averages of all youth who applied before the deadline of June 15th. Column 5 reports the differences in averages between employer selected youth and the NU job matching algorithm selected youth. Column 6 contains the differences in averages between column 3 (employer partner and NU selected youth) and column 4 (all applicants). Standard errors are reported below in parentheses. This sample conditions on those who have submitted at least one valid application by the cut-off date of June 15th. * p<0.1, ** p<0.05, *** p<0.01

Table 7: Comparison of Descriptive Statistics by Timing of Application

	Early Applicants	Late Applicants	Very Late Applicants	Diff in Means	Std.Err. in Diff	p-value
Age	16.62	16.82	16.2	0.200	(0.046)	0.0000
African American	0.43	0.46	0.57	0.039	(0.017)	0.0199
White	0.17	0.10	0.08	-0.065	(0.012)	0.0000
Hispanic or Latino	0.22	0.25	0.22	0.029	(0.014)	0.0421
Asian	0.10	0.08	0.03	-0.020	(0.010)	0.0376
Other Race	0.00	0.11	0.01	0.017	(0.010)	0.0807
Female	0.47	0.52	0.45	0.059	(0.017)	0.0005
Fluent in Another Language	0.32	0.34	0.30	0.026	(0.016)	0.1170
First Language English	0.85	0.82	0.86	-0.029	(0.013)	0.0208
Attends Exam School	0.25	0.18	0.15	-0.065	(0.015)	0.0000
Previously Participated	0.29	0.21	0.12	-0.084	(0.015)	0.0000
Number of Applications	3.55	2.73	2.81	-0.818	(0.132)	0.0000
Avg Num of Other Apps Per Slot	8.38	10.17	8.35	1.792	(0.417)	0.0000
Recorded Resume Response	0.46	0.60	0.47	0.137	(0.017)	0.0000
Avg Resume Character Length	5828.2	6208.18	6622.4	379.982	(134.743)	0.0048
Avg Resume Flesch Score	-20.22	-16.33	-27.80	3.886	(1.663)	0.0195
Avg Work Question Length	318.23	288.12	244.8	-30.114	(10.559)	0.0044
Avg Work Question Flesch Score	68.05	68.86	69.50	0.810	(1.039)	0.4359
Selected by Employer	0.69	0.59	0.00	-0.100	(0.016)	0.0000
Selected by Northeastern University List	0.12	0.10	0.01	-0.026	(0.011)	0.0139
We Hire Event Selected	0.05	0.09	0.44	0.033	(0.008)	0.0001
Observations	737	1,382	2,380			

Source: Authors' calculations based on data from the Boston Office of Youth Employment and Opportunity.

Notes: The sample includes youth who submitted at least one valid job application. Youth who submitted at least one valid application in either March or April are categorized as 'Early Applicants' while youth whose earliest application was submitted in May or up to June 15th are categorized as 'Late Applicants'. Those who submitted a job application after the June 15th deadline are categorized as 'Very Late Applicants'. Column 4 contains the difference in means between column 2 and column 3. Column 5 contains the standard error in differences. Column 5 contains the p-value for the two-sample t-test.

Table 8. Descriptive Statistics by Selection Method: Employer versus We Hire Event

	Employer Selected Mean	We Hire Mean	Difference	p value
Age	16.84	16.24	0.607	0.000
White	0.18	0.06	0.126	0.000
African American	0.42	0.60	0.185	0.000
Asian	0.09	0.03	0.061	0.000
Hispanic or Latino	0.21	0.20	0.005	0.781
Other Race	0.11	0.11	0.006	0.652
Female	0.48	0.46	0.025	0.277
Attends Exam School	0.26	0.14	0.120	0.000
Fluent in Another Language	0.31	0.27	0.044	0.042
Number of Applications	3.34	1.86	1.477	0.000
Avg Num of Other Apps Per Slot	6.75	7.53	0.777	0.022
Earliest App Submitted in March	0.31	0.10	0.210	0.000
Earliest App Submitted in April	0.36	0.13	0.230	0.000
Earliest App Submitted in May	0.19	0.12	0.076	0.000
Earliest App Submitted in June	0.14	0.46	0.316	0.000
Recorded Resume Response	0.50	0.41	0.089	0.000
Completed Work Question	0.81	0.85	0.037	0.040
Avg Resume Character Length	5491.28	6580.61	1089.325	0.000
Avg Resume Flesch Score	9.22	25.35	16.126	0.000
Avg Work Question Length	333.71	242.06	91.659	0.000
Avg Work Question Flesch Score	67.91	68.24	0.331	0.825

Source: Authors' calculations based on data from the Boston Office of Youth Employment and Opportunity.

Notes: The sample includes youth who submitted at least one valid job application.

**Table 9: Relationship between Youth Characteristics and Hired Status
Conditional on Selection**

	(1)	(2)	(3)
African American	-0.12*** (-4.61)	-0.11*** (-3.93)	-0.04** (-2.09)
Hispanic or Latino	-0.16*** (-5.85)	-0.14*** (-4.72)	-0.06** (-2.55)
Asian	-0.05 (-1.57)	-0.04 (-1.14)	0.01 (0.37)
Other Race	-0.03 (-0.77)	-0.01 (-0.36)	-0.03 (-1.21)
Female	-0.04*** (-2.84)	-0.04*** (-2.60)	-0.03** (-2.46)
Earliest App Submitted in March	-0.32*** (-8.96)	-0.31*** (-8.63)	-0.09*** (-2.86)
Earliest App Submitted in April	-0.32*** (-9.16)	-0.31*** (-8.82)	-0.08*** (-2.60)
Earliest App Submitted in May	-0.26*** (-7.49)	-0.25*** (-7.28)	-0.03 (-1.17)
Earliest Onboarding in April	0.36*** (5.17)	0.35*** (4.91)	0.20*** (3.68)
Earliest Onboarding in May	0.29*** (4.29)	0.27*** (4.02)	0.17*** (3.17)
Earliest Onboarding in June	0.22*** (3.24)	0.20*** (3.07)	0.15*** (2.91)
Selected by Northeastern University List	-0.28*** (-10.21)	-0.28*** (-10.26)	-0.15*** (-6.74)
We Hire Event Selected	0.00 (0.08)	0.00 (0.08)	0.02 (0.75)
Fluent in Another Language		-0.04** (-2.09)	-0.04** (-2.34)
Enrolled in School		0.32*** (2.71)	0.14 (1.53)
Attends Exam School		0.03 (1.26)	0.04** (2.16)
Previously Participated			0.07*** (4.59)
Continuing Candidate			0.45*** (14.44)
Constant	0.71 (1.16)	0.57 (0.92)	1.79*** (3.64)
Observations	2,884	2,884	2,884
Application Controls	No	No	Yes

Source: Authors' calculations based on data from the Boston Office of Youth Employment and Opportunity.
Note: The sample includes youth who submitted at least one valid application * p<0.1, ** p<0.05, *** p<0.01.