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Bloomberg L.P.

**Bias Audit for
Automated
Employment
Decision Tools
as Required by
New York City's
Local Law 144**

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1. Resolution Economics LLC is an independent auditor for the purposes of Local Law 144

Resolution Economics LLC provides economic and statistical analysis, investigations and advisory services, tailored technology, and analytical solutions as well as expert testimony to law firms, companies, and government agencies.

Our expert analysts provide independent bias audits that assess whether use of the AI-enabled/Automated tools results in adverse impact on the basis of race, sex, ethnicity, and/or intersectional identities.

2. Bloomberg L.P. has jobs located in New York City

Bloomberg L.P. has several job requisitions for positions located in New York City where an automated employment decision tool, the PLUM Assessment Tool, is used in the hiring process during the time period analyzed in this report. Bloomberg L.P. has used the PLUM Assessment Tool since on or around August 2019.

3. Bias Audit of the Pass/Fail Designations Generated by the PLUM Assessment Tool

3.1. Data

PLUM Assessment data for requisitions for positions in New York City from December 1, 2021 through November 23, 2022 are analyzed in this report. Bloomberg chose this time period due to the January 2023 original effective date of Local Law 144 and the need to analyze a representative sampling of selections. All the applications to these requisitions are required to take the PLUM Assessment test as part of the employment application process. The data file contains information on each applicant, application, requisition, PLUM Assessment score information, and a prescreen reject indicator.

The applicant information includes a unique identifier for each applicant as well as the applicant's name, sex, and race/ethnicity. The application information includes a unique identifier for each application, the creation date of the application, and the current stage of an application.



The requisition information indicates the location of the position (limited to New York City), title of the position, and a unique job requisition identifier.

The PLUM Assessment information contains the cutoff score associated with each requisition (each requisition has only one cutoff value), the PLUM Assessment score an applicant received after taking the PLUM Assessment test, and the prescreen reject indicator showing whether an applicant's PLUM Assessment score for an application did not exceed the cutoff score.¹

3.2. Impact Ratio Tables

As required by Local Law 144, three sets of impact ratios² associated with the PLUM Assessment Tool's pass/fail designations are calculated separately to compare sex categories, race/ethnicity categories, and the intersection of sex and race/ethnicity categories. These are reported in Tables 1 through 3 below:

Table 1. Impact Ratios of Pass/Fail Selection Rates by Sex Categories

Sex	# of Applications	# of Selected ³	Selection Rate ⁴	Impact Ratio
Female	2,793	2,440	87%	1.00
Male	5,187	4,425	85%	0.98

Note: The PLUM Assessment Tool was used to assess 813 applications with an unknown sex. These applications are not included in the calculations above, as permitted by the Local Law 144 rules.

¹ One application had a PLUM Assessment score equal to their cutoff score, but they were not "pre-screen rejected". This application is considered to have passed the test.

² The "impact ratio" is the selection rate of a demographic category divided by the selection rate of the most selected category. "Selection rate" measures the rate at which the applications of a demographic category pass the PLUM Assessment test and continue the hiring process.

³ "Selected" in this report means that an application passes the prescreen and moves onto the next steps of the hiring process if their PLUM Assessment score is greater than the cutoff score.

⁴ The selection rate is calculated for each demographic category as the ratio of the number of selected applications to the number of total applications in that category. As prescribed by the Local Law 144 rules, the demographic category with the highest selection rate is designated as the reference category, and then the impact ratio is calculated as the ratio of the selection rate of a demographic group divided by the selection rate of the reference category.

Table 2. Impact Ratios of Pass/Fail Selection Rates by Race/Ethnicity Categories

Race/Ethnicity	# of Applications	# of Selected	Selection Rate	Impact Ratio
Asian	3,543	3,162	89%	1.00
Black or African American	678	542	80%	0.90
Hispanic or Latino	937	759	81%	0.91
Two or More Races	264	235	89%	1.00
White	2,274	1,934	85%	0.94

Note 1: The PLUM Assessment Tool was used to assess 1,075 applications with an unknown race/ethnicity category. These applications are not included in the calculations above, as permitted by the Local Law 144 rules.

Note 2: The following categories are excluded from the above table because they are less than 2% of total applications, as permitted by the Local Law 144 rules: a) 11 applications where race/ethnicity is American Indian or Alaska Native (with a selection rate of 91%) and b) 11 applications where race/ethnicity is Native Hawaiian or Pacific Islander (with a selection rate of 91%).

Table 3. Impact Ratios of Pass/Fail Selection Rates by Intersection of Sex and Race/Ethnicity Categories

Sex	Race/Ethnicity	# of Applications	# of Selected	Selection Rate	Impact Ratio
Female	Asian	1,531	1,396	91%	1.00
Female	Black or African American	250	189	76%	0.83
Female	Hispanic or Latino	290	237	82%	0.90
Female	White	582	492	85%	0.93
Male	Asian	1,996	1,751	88%	0.96
Male	Black or African American	425	350	82%	0.90
Male	Two or More Races	200	177	89%	0.97
Male	Hispanic or Latino	645	520	81%	0.88
Male	White	1,682	1,432	85%	0.93

Note 1: The PLUM Assessment Tool was used to assess 1,111 applications with unknown sex or race/ethnicity. These applications are not included in the calculations above, as permitted by the Local Law 144 rules.

Note 2: The following intersectional categories were excluded from the above table because they are less than 2% of total applications, as permitted by the Local Law 144 rules: a) 1 Female American Indian or Alaska Native application (with a selection rate of 100%), b) 3 Female Native Hawaiian or Pacific Islander applications (with a selection rate of 100%), c) 59 Female Two or More Races applications (with a selection rate of 92%), d) 10 Male American Indian or Alaska Native applications (with a selection rate of 90%), and e) 8 Male Native Hawaiian or Pacific Islander applications (with a selection rate of 88%).

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The calculations presented in this report are based upon the information available to me at this time. If additional information becomes available, then this report is subject to update.

Signed this 3rd day of July 2023

A handwritten signature in black ink that reads "Paul F. White". The signature is written in a cursive style with a large, looped initial 'P'.

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