



**August 16, 2024**

## **Bias Audit Following NYC Local Law 144 - Audit of Upwage's SuperSorter Tool**

### **1. Auditor's Statement**

Data Action Partners (DAP) has performed an independent and impartial bias audit of Upwage's SuperSorter tool following the guidelines defined in NYC Local Law 144, which establishes compliance and disclosure standards for Automated Employment Decision Tools (AEDTs). DAP makes no determination as to whether or not Upwage's tool is an AEDT or subject to NYC Local Law 144. DAP's findings are limited to the scope of the law, concerning the identification of statistically significant disparities in group-differentiated selection rates according to classification of interviewees to gender, race/ethnicity, and intersectional gender and race/ethnicity categories. The calculations and findings presented in this audit are based on information available at the time and represented as accurate by Upwage. If additional information becomes available, DAP will update or correct this report as warranted.

### **2. System Description**

Upwage provides an AI-driven chat interview experience for job applicants which in turn provides employers with candidate evaluations suitable for informing or supplementing screening decisions. Data subject to this audit were generated by candidates interacting with Upwage's AI Screener, which produces candidate interview transcripts. Those transcripts were then assessed by Upwage's SuperSorter tool. The SuperSorter tool sorts candidates, based on their interview transcripts, according to employer-defined competencies and evaluation methods. Ratings are classified into three tiers – High, Medium, and Low. Typical employer practice is to prioritize candidates rated High and Medium for subsequent evaluation before considering candidates rated Low. Accordingly, we define "selection rate" as the ratio of candidates scoring "High" or "Medium" to the size of the total candidate pool for that group.

### **3. Bias Audit**

DAP's audit analyzed selection rates of candidates with respect to race/ ethnicity, gender, and intersectional race/ ethnicity and gender classifications to identify any disproportionate group-differentiated rates of selection that could indicate an underlying bias. DAP's analysis and discussion of findings follows.

**Table 1. Impact Ratios by Gender**

Classification	Samples	Selection Rate	Impact Ratio (Estimated Error)
Female	7223	95%	1.00 (0.00)
Male	5500	94%	0.99 (0.00)

Note: 1672 candidates were also assessed for whom gender was unknown. Those data are not included in the calculations above.

**Table 2. Impact Ratios by Race/ Ethnicity**

Classification	Samples	Selection Rate	Impact Ratio (Estimated Error)
White	8512	95%	1.00 (0.00)
Black	4158	94%	0.99 (0.00)
Hispanic	1434	94%	0.99 (0.01)
Asian**	172	92%	<i>Not computed</i>
Other**	9	100%	<i>Not computed</i>

Note: 110 candidates were also assessed for whom race/ethnicity was unknown. Those data are not included in the calculations above.

\*\* Sample sizes for these classifications are less than 2% of the overall sample size and are not subject to statutory audit. These groups were excluded from impact ratio calculations.

**Table 3. Impact Ratios by Intersectional Category – Gender and Race/ Ethnicity**

Classification	Samples	Selection Rate	Impact Ratio (Estimated Error)
Female - Black	2448	94%	0.99 (0.00)
Female - Hispanic	674	95%	1.00 (0.01)
Female - White	4018	95%	1.00 (0.00)
Male - Black	1208	92%	0.96 (0.01)
Male - Hispanic	626	93%	0.98 (0.01)
Male - White	3577	95%	1.00 (0.00)
Female - Asian**	63	94%	<i>Not computed</i>
Female - Other**	6	100%	<i>Not computed</i>
Male - Asian**	77	92%	<i>Not computed</i>
Male - Other**	3	100%	<i>Not computed</i>

Note: 1695 candidates were also assessed for whom race/ethnicity or gender was unknown. Those data are not included in the calculations above.

\*\* Sample sizes for these classifications are less than 2% of the overall sample size and are not subject to statutory audit. These groups were excluded from impact ratio calculations.

#### **4. Use of Test Data**

The foregoing analysis was performed using a test data set prepared by Upwage. The law provides for the use of a test data set in the event that actual historical screening data are not available. DAP understands that Upwage was not in possession of historical screening data that included race/ethnicity and gender classifications, so at this time it was not possible to conduct a bias audit using historical data. Upwage prepared a test data set based on actual screening outcomes where race/ethnicity and gender classifications were imputed by assigning the highest-probability classifications to each record based on other identifying factors available to Upwage. This methodology leveraged public data sets that provide probability distributions of gender and race/ethnicity based on names.

DAP believes that the methodology used to prepare the test data set provides a statistically sound basis for use in this audit. DAP further understands that Upwage plans to begin collecting race/ethnicity and gender information and will be able to furnish actual historical screening data for future audits.

#### **5. Discussion of Results**

DAP's analysis of impact ratios does not identify any instances of apparent disparate impact with respect to gender, race/ethnicity, and gender and race/ethnicity. Impact ratios, which would indicate group-differentiated variation in selection rate, are over 0.95 for all groups where a significant sample size is available (statutory guidelines state that groups with a sample size comprising less than 2% of the total sample size are not considered significant for the purposes of this audit).

#### **6. Recommendations**

##### **A. Use of historical data for future bias audits**

DAP recommends conducting future bias audits using actual gender and race/ethnicity data, provided sufficient historical data have been collected to represent a statistically significant sample size. This will satisfy the preferred methodology stated in NYC Local Law 144 and will enable Upwage to evaluate, verify, and confirm the accuracy of prior audits that relied on test data.

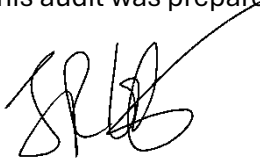
##### **B. Expansion of demographic categories for disparate impact analysis**

To the extent additional interviewee demographic data are available, consider expanding the scope of audits of disparate impact analysis to account for factors such as age, immigration or citizenship status, disability status, marital status, national origin, pregnancy status, religion/creed, and sexual orientation.

## 7. About Data Action Partners

Data Action Partners operates an end-to-end expert data practice with a specialization in data governance, analysis, and infrastructure in the context of public sector program operations and service delivery. DAP has extensive experience navigating and producing deliverables for federal, state, and municipal compliance rules and statutory reporting requirements. We routinely conduct internal and external audits and data quality assurance exercises to identify both technical system defects and program implementation concerns that may point to inequitable service delivery or program outcomes.

This audit was prepared and submitted by:

A handwritten signature in black ink, appearing to read 'J. Gergely', is written over a horizontal line. The signature is stylized and cursive.

John Gergely  
Principal  
Data Action Partners