

New York City Local Law 144 “Bias Audit” for HireVue for Adaptability for Intern or new college graduate jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

The “bias audit” reported here is consistent with the use case wherein historical data from multiple employers using the same automated employment decision tool (AEDT) are used as the basis of the audit. This audit and report address the requirements of the New York City (NYC) Local Law 144 that regulates the use of AEDTs in accordance with the final rules published by the NYC Department of Consumer and Worker Protection (DCWP) on April 6, 2023.

About DCI Consulting Group (DCI)

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer's implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC's Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

The law further specifies that the demographic groups need to be compared in three specific ways:

1. Gender comparison (i.e., Male, Female).
2. Race/ethnicity comparison (i.e., Hispanic or Latino, White, Black or African American, Native Hawaiian or Pacific Islander, Asian, Native American or Alaska Native, Two or More Races).
3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\textit{selection rate of demographic (focal) group}}{\textit{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

- Data were analyzed separately per implementation because the context around using the AEDT, the jobs for which they were used, the normative samples, and the composition of the specific applicant pools vary and cannot be assumed to be equivalent, nor can they be collapsed across implementations.
- Within an aggregation group, a single, consistent comparator group must be identified for all implementations of the AEDT to be able to produce interpretable aggregate impact ratios.
- Two factors are balanced when determining the aggregation comparator group: 1) selection rate and 2) statistical coverage. The comparator has the highest selection rate amongst those demographic groups with sufficient statistical coverage across implementations.³
- For all viable implementations analyzed in the aggregation group, aggregated values are calculated using recommended professional practices.^{4,5}

Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

Finally, as specified by NYC for this law, each table contains a footnote specifying the number of applicants from the viable implementations analyzed for an aggregation group for whom demographic information is unavailable. Each page containing report tables also provides additional notes for the reader to bear in mind when viewing the results.

¹ A number of the requirements specific to NYC Local Law 144 are not aligned to contemporary adverse impact analysis practices (e.g., Morris and Dunleavy, Adverse impact analysis: Understanding data, statistics, and risk, 2017). However, these analyses were conducted as stipulated by NYC for the sole purpose of meeting the specific requirements of Local Law 144.

² Due to this balancing of factors, there may be some instances where aggregated impact ratios reported in a table will exceed 1.0.

³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

⁴ Sufficient data for a demographic group to be analyzed for an implementation requires that group comprise at least two-percent of the sample, and that there be at least three applicants above the threshold and three applicants below the threshold in the demographic group.

⁵ When aggregating the number of applicants, results from each implementation in the aggregation group are summed; when aggregating the selection rate, results from each implementation are averaged; when aggregating the impact ratio, results from each implementation analysis must first be converted to a natural logarithm, averaged, and then exponentiated to yield the average ratio value.

HireVue Aggregate “Bias Audit” Analysis for Adaptability for Intern or new college graduate jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	2061	0.84	Comparator Group		2061	0.50	0.95
Female	2491	0.83	0.98		2491	0.53	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 467 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 467 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	630	0.83	1.03		687	0.55	Comparator Group
White	2018	0.84	1.03		2206	0.49	0.92
Black or African American	637	0.85	1.07		680	0.54	0.93
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	727	0.81	Comparator Group		747	0.47	0.79
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	84	0.67	0.82		167	0.46	0.77

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 571 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 582 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Adaptability for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	263	0.81	1.12		232	0.58	1.04
Male White	795	0.81	1.09		736	0.54	1.00
Male Black or African American	175	0.83	1.27		221	0.54	1.02
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	285	0.80	1.07		323	0.38	0.74
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	16	0.50	1.67		17	0.47	0.86
Female Hispanic or Latino	288	0.83	0.96		311	0.56	1.03
Female White	1128	0.79	Comparator Group		1182	0.53	Comparator Group
Female Black or African American	345	0.86	0.99		377	0.54	1.06
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	333	0.84	0.94		381	0.56	1.00
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	42	0.86	0.94		56	0.52	0.95

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 569 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 593 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

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NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	3030	0.78	0.97		3524	0.48	0.94
Female	2732	0.81	Comparator Group		2931	0.51	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 481 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 509 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	771	0.76	0.96		868	0.49	Comparator Group
White	2840	0.78	Comparator Group		3289	0.49	0.96
Black or African American	737	0.76	0.97		808	0.45	0.89
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	937	0.73	0.87		1126	0.45	0.81
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	167	0.75	0.99		200	0.45	0.94

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 612 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 697 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

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HireVue Aggregate “Bias Audit” Analysis for Communication for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	417	0.73	0.96		381	0.51	0.91
Male White	1516	0.77	Comparator Group		1576	0.54	0.92
Male Black or African American	302	0.73	0.96		322	0.42	0.76
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	494	0.73	0.89		585	0.43	0.70
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	39	0.61	0.97		51	0.51	1.05
Female Hispanic or Latino	305	0.81	0.98		305	0.48	0.91
Female White	1261	0.79	0.96		1419	0.57	Comparator Group
Female Black or African American	372	0.80	0.94		409	0.51	0.98
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	387	0.78	0.94		477	0.51	0.81
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	42	0.90	1.08		56	0.55	1.09

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Note: There were 651 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 726 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

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Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	3217	0.71	0.95		3286	0.40	0.96
Female	2740	0.74	Comparator Group		2817	0.42	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 473 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 475 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	790	0.73	Comparator Group		817	0.40	Comparator Group
White	2995	0.69	0.95		3033	0.35	0.83
Black or African American	720	0.65	0.90		778	0.38	1.00
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	964	0.66	0.91		1028	0.35	0.85
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	198	0.68	0.97		174	0.35	0.81

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 642 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 648 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

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Male Hispanic or Latino	411	0.70	1.02		358	0.47	1.07
Male White	1590	0.69	0.99		1452	0.43	0.92
Male Black or African American	305	0.70	1.02		302	0.40	0.93
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	531	0.64	0.91		557	0.34	0.76
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	61	0.67	1.17		36	0.58	1.34
Female Hispanic or Latino	305	0.74	1.00		305	0.39	1.16
Female White	1328	0.71	Comparator Group		1374	0.44	0.94
Female Black or African American	377	0.70	0.93		398	0.42	1.06
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	387	0.70	0.92		444	0.45	Comparator Group
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	56	0.81	1.10		56	0.40	1.13

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 679 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 684 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

New York City Local Law 144 “Bias Audit” for HireVue for Personality - Agreeableness for All jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

The “bias audit” reported here is consistent with the use case wherein historical data from multiple employers using the same automated employment decision tool (AEDT) are used as the basis of the audit. This audit and report address the requirements of the New York City (NYC) Local Law 144 that regulates the use of AEDTs in accordance with the final rules published by the NYC Department of Consumer and Worker Protection (DCWP) on April 6, 2023.

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer’s implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC’s Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

The law further specifies that the demographic groups need to be compared in three specific ways:

1. Gender comparison (i.e., Male, Female).
2. Race/ethnicity comparison (i.e., Hispanic or Latino, White, Black or African American, Native Hawaiian or Pacific Islander, Asian, Native American or Alaska Native, Two or More Races).
3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\textit{selection rate of demographic (focal) group}}{\textit{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

- Data were analyzed separately per implementation because the context around using the AEDT, the jobs for which they were used, the normative samples, and the composition of the specific applicant pools vary and cannot be assumed to be equivalent, nor can they be collapsed across implementations.
- Within an aggregation group, a single, consistent comparator group must be identified for all implementations of the AEDT to be able to produce interpretable aggregate impact ratios.
- Two factors are balanced when determining the aggregation comparator group: 1) selection rate and 2) statistical coverage. The comparator has the highest selection rate amongst those demographic groups with sufficient statistical coverage across implementations.³
- For all viable implementations analyzed in the aggregation group, aggregated values are calculated using recommended professional practices.^{4,5}

Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

Finally, as specified by NYC for this law, each table contains a footnote specifying the number of applicants from the viable implementations analyzed for an aggregation group for whom demographic information is unavailable. Each page containing report tables also provides additional notes for the reader to bear in mind when viewing the results.

¹ A number of the requirements specific to NYC Local Law 144 are not aligned to contemporary adverse impact analysis practices (e.g., Morris and Dunleavy, Adverse impact analysis: Understanding data, statistics, and risk, 2017). However, these analyses were conducted as stipulated by NYC for the sole purpose of meeting the specific requirements of Local Law 144.

² Due to this balancing of factors, there may be some instances where aggregated impact ratios reported in a table will exceed 1.0.

³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

⁴ Sufficient data for a demographic group to be analyzed for an implementation requires that group comprise at least two-percent of the sample, and that there be at least three applicants above the threshold and three applicants below the threshold in the demographic group.

⁵ When aggregating the number of applicants, results from each implementation in the aggregation group are summed; when aggregating the selection rate, results from each implementation are averaged; when aggregating the impact ratio, results from each implementation analysis must first be converted to a natural logarithm, averaged, and then exponentiated to yield the average ratio value.

HireVue Aggregate “Bias Audit” Analysis for Personality - Agreeableness for All jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	7058	0.64	Comparator Group		6990	0.29	Comparator Group
Female	11620	0.63	0.97		11523	0.27	0.86

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 3636 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 3636 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	5190	0.70	1.07		5216	0.36	Comparator Group
White	3519	0.69	1.04		3551	0.33	0.87
Black or African American	7009	0.65	Comparator Group		7009	0.25	0.70
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	757	0.60	0.92		747	0.32	0.96
Native American or Alaska Native	6	0.50	0.84		0	—	—
Two or More Races	1106	0.66	1.03		1068	0.34	0.99

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 4175 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 4181 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Personality - Agreeableness for All jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	2004	0.66	1.02		2020	0.35	Comparator Group
Male White	1681	0.66	1.01		1655	0.30	0.88
Male Black or African American	2134	0.65	Comparator Group		1916	0.28	0.83
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	394	0.59	0.97		387	0.36	1.17
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	119	0.57	0.92		84	0.37	1.18
Female Hispanic or Latino	3137	0.74	1.15		3052	0.38	1.19
Female White	1808	0.69	1.06		1623	0.27	0.75
Female Black or African American	4791	0.66	1.03		4222	0.27	0.74
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	84	0.88	1.10		91	0.51	1.95
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	656	0.73	1.06		591	0.37	1.03

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 4227 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 4175 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

New York City Local Law 144 “Bias Audit” for HireVue for Personality - Openness for All jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

The “bias audit” reported here is consistent with the use case wherein historical data from multiple employers using the same automated employment decision tool (AEDT) are used as the basis of the audit. This audit and report address the requirements of the New York City (NYC) Local Law 144 that regulates the use of AEDTs in accordance with the final rules published by the NYC Department of Consumer and Worker Protection (DCWP) on April 6, 2023.

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer’s implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC’s Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

The law further specifies that the demographic groups need to be compared in three specific ways:

1. Gender comparison (i.e., Male, Female).
2. Race/ethnicity comparison (i.e., Hispanic or Latino, White, Black or African American, Native Hawaiian or Pacific Islander, Asian, Native American or Alaska Native, Two or More Races).
3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\text{selection rate of demographic (focal) group}}{\text{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

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- Two factors are balanced when determining the aggregation comparator group: 1) selection rate and 2) statistical coverage. The comparator has the highest selection rate amongst those demographic groups with sufficient statistical coverage across implementations.³
- For all viable implementations analyzed in the aggregation group, aggregated values are calculated using recommended professional practices.^{4,5}

Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

Finally, as specified by NYC for this law, each table contains a footnote specifying the number of applicants from the viable implementations analyzed for an aggregation group for whom demographic information is unavailable. Each page containing report tables also provides additional notes for the reader to bear in mind when viewing the results.

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² Due to this balancing of factors, there may be some instances where aggregated impact ratios reported in a table will exceed 1.0.

³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

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HireVue Aggregate “Bias Audit” Analysis for Personality - Openness for All jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	7058	0.67	0.91		7058	0.38	0.86
Female	11620	0.72	Comparator Group		11620	0.43	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 3636 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 3636 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	5154	0.69	1.04		5190	0.40	0.86
White	3496	0.70	1.03		3642	0.42	Comparator Group
Black or African American	7009	0.70	Comparator Group		7009	0.40	0.91
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	737	0.67	1.02		783	0.43	0.99
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	1074	0.76	1.04		1106	0.52	1.18

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 4175 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 4186 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Personality - Openness for All jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	1957	0.66	0.95		1972	0.41	0.89
Male White	1767	0.66	0.94		1623	0.42	1.15
Male Black or African American	2055	0.63	0.85		2123	0.41	Comparator Group
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	387	0.61	0.84		386	0.38	1.13
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	84	0.60	0.95		113	0.43	1.13
Female Hispanic or Latino	3126	0.72	1.02		3144	0.42	1.08
Female White	1889	0.69	Comparator Group		1751	0.44	1.11
Female Black or African American	4777	0.66	0.97		4798	0.47	1.15
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	105	0.71	1.13		84	0.31	0.98
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	646	0.79	1.08		656	0.52	1.24

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 4237 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 4189 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

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New York City Local Law 144 “Bias Audit” for HireVue for Problem Solving for Intern or new college graduate jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

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Purpose

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer's implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC's Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

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3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\text{selection rate of demographic (focal) group}}{\text{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

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Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

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HireVue Aggregate “Bias Audit” Analysis for Problem Solving for Intern or new college graduate jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	3230	0.63	0.98		3191	0.34	0.93
Female	1288	0.64	Comparator Group		1359	0.35	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 232 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 234 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	522	0.64	Comparator Group		569	0.38	Comparator Group
White	2225	0.62	0.97		2349	0.37	0.89
Black or African American	466	0.57	0.83		493	0.36	0.99
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	821	0.61	0.96		888	0.34	0.97
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	122	0.52	0.82		127	0.31	0.92

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 347 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 361 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Problem Solving for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	367	0.61	1.12		420	0.41	Comparator Group
Male White	1560	0.64	1.12		1626	0.39	0.83
Male Black or African American	313	0.62	Comparator Group		299	0.37	0.92
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	536	0.65	1.12		524	0.28	0.81
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	61	0.66	1.22		51	0.43	1.25
Female Hispanic or Latino	74	0.64	0.88		41	0.41	0.85
Female White	524	0.61	1.10		550	0.37	0.96
Female Black or African American	165	0.72	1.05		170	0.42	1.08
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	232	0.58	0.95		263	0.37	0.87
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	0	—	—		0	—	—

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 367 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 377 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

New York City Local Law 144 “Bias Audit” for HireVue for Relationship Building for Intern or new college graduate jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

The “bias audit” reported here is consistent with the use case wherein historical data from multiple employers using the same automated employment decision tool (AEDT) are used as the basis of the audit. This audit and report address the requirements of the New York City (NYC) Local Law 144 that regulates the use of AEDTs in accordance with the final rules published by the NYC Department of Consumer and Worker Protection (DCWP) on April 6, 2023.

About DCI Consulting Group (DCI)

DCI is a human resources consulting firm headquartered in Washington, D.C. Since 2001, DCI has provided expert solutions to hundreds of organizations on complex issues, with particular emphasis on equal employment opportunity analytics, employee selection and assessment, independent third-party reviews, and litigation support work. DCI's team of Industrial/Organizational Psychologists and Labor Economists are recognized for their applied experience in complex quantitative analytics, adverse impact measurement, pay equity, job analysis, validation research and job-relatedness evaluations, and routinely perform work in the context of affirmative action plans under the jurisdiction of the Department of Labor's Office of Federal Contract Compliance Programs compliance evaluations, Equal Employment Opportunity Commission systemic investigations, and expert witness work on matters related to Title VII, Executive Order 11246, the Age Discrimination in Employment Act, and the Americans with Disabilities Act.

“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer's implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC's Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

The law further specifies that the demographic groups need to be compared in three specific ways:

1. Gender comparison (i.e., Male, Female).
2. Race/ethnicity comparison (i.e., Hispanic or Latino, White, Black or African American, Native Hawaiian or Pacific Islander, Asian, Native American or Alaska Native, Two or More Races).
3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\textit{selection rate of demographic (focal) group}}{\textit{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

- Data were analyzed separately per implementation because the context around using the AEDT, the jobs for which they were used, the normative samples, and the composition of the specific applicant pools vary and cannot be assumed to be equivalent, nor can they be collapsed across implementations.
- Within an aggregation group, a single, consistent comparator group must be identified for all implementations of the AEDT to be able to produce interpretable aggregate impact ratios.
- Two factors are balanced when determining the aggregation comparator group: 1) selection rate and 2) statistical coverage. The comparator has the highest selection rate amongst those demographic groups with sufficient statistical coverage across implementations.³
- For all viable implementations analyzed in the aggregation group, aggregated values are calculated using recommended professional practices.^{4,5}

Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

Finally, as specified by NYC for this law, each table contains a footnote specifying the number of applicants from the viable implementations analyzed for an aggregation group for whom demographic information is unavailable. Each page containing report tables also provides additional notes for the reader to bear in mind when viewing the results.

¹ A number of the requirements specific to NYC Local Law 144 are not aligned to contemporary adverse impact analysis practices (e.g., Morris and Dunleavy, Adverse impact analysis: Understanding data, statistics, and risk, 2017). However, these analyses were conducted as stipulated by NYC for the sole purpose of meeting the specific requirements of Local Law 144.

² Due to this balancing of factors, there may be some instances where aggregated impact ratios reported in a table will exceed 1.0.

³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

⁴ Sufficient data for a demographic group to be analyzed for an implementation requires that group comprise at least two-percent of the sample, and that there be at least three applicants above the threshold and three applicants below the threshold in the demographic group.

⁵ When aggregating the number of applicants, results from each implementation in the aggregation group are summed; when aggregating the selection rate, results from each implementation are averaged; when aggregating the impact ratio, results from each implementation analysis must first be converted to a natural logarithm, averaged, and then exponentiated to yield the average ratio value.

HireVue Aggregate “Bias Audit” Analysis for Relationship Building for Intern or new college graduate jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	333	0.75	0.91		333	0.45	0.83
Female	1572	0.82	Comparator Group		1572	0.53	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 275 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 275 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	299	0.85	0.97		299	0.50	0.72
White	940	0.82	0.94		940	0.51	0.74
Black or African American	288	0.84	0.97		288	0.60	0.87
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	238	0.72	0.82		238	0.42	0.61
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	71	0.87	Comparator Group		71	0.69	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 336 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 336 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Relationship Building for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	68	0.82	0.95		68	0.40	0.50
Male White	127	0.78	0.91		127	0.51	0.68
Male Black or African American	49	0.80	0.90		49	0.59	0.83
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	53	0.62	0.70		53	0.24	0.31
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	0	—	—		0	—	—
Female Hispanic or Latino	231	0.85	0.99		231	0.52	0.69
Female White	812	0.82	0.96		812	0.51	0.68
Female Black or African American	228	0.86	Comparator Group		228	0.61	0.82
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	181	0.75	0.87		181	0.48	0.64
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	42	0.93	1.06		56	0.75	Comparator Group

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 343 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 343 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

New York City Local Law 144 “Bias Audit” for HireVue for Think - Digitspan, Shapedance for Intern or new college graduate jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

The “bias audit” reported here is consistent with the use case wherein historical data from multiple employers using the same automated employment decision tool (AEDT) are used as the basis of the audit. This audit and report address the requirements of the New York City (NYC) Local Law 144 that regulates the use of AEDTs in accordance with the final rules published by the NYC Department of Consumer and Worker Protection (DCWP) on April 6, 2023.

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer's implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC's Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

The law further specifies that the demographic groups need to be compared in three specific ways:

1. Gender comparison (i.e., Male, Female).
2. Race/ethnicity comparison (i.e., Hispanic or Latino, White, Black or African American, Native Hawaiian or Pacific Islander, Asian, Native American or Alaska Native, Two or More Races).
3. An intersectional comparison that is the combination of gender and race/ethnicity (e.g., Hispanic or Latino Male, Hispanic or Latino Female, White Male, White Female).

The NYC law impact ratio has been defined by the DCWP's published rules and is calculated as:

$$\text{NYC Law Impact Ratio} = \frac{\textit{selection rate of demographic (focal) group}}{\textit{selection rate of most selected (comparator) demographic group}}$$

Results Aggregation Methodology

For each AEDT implementation where sufficient data were available to analyze, the number of applicants, number of applicants selected, number of applicants not selected, selection rate, and impact ratio for each demographic group were calculated. These results were then aggregated to produce the tables in this report. To be able to aggregate results meaningfully across a range of implementations for the AEDT, there are a number of specific, nuanced issues that must be considered that are not required when conducting a bias audit in a singular implementation. These aggregation considerations and related decisions are as follows:

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- For all viable implementations analyzed in the aggregation group, aggregated values are calculated using recommended professional practices.^{4,5}

Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

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² Due to this balancing of factors, there may be some instances where aggregated impact ratios reported in a table will exceed 1.0.

³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

⁴ Sufficient data for a demographic group to be analyzed for an implementation requires that group comprise at least two-percent of the sample, and that there be at least three applicants above the threshold and three applicants below the threshold in the demographic group.

⁵ When aggregating the number of applicants, results from each implementation in the aggregation group are summed; when aggregating the selection rate, results from each implementation are averaged; when aggregating the impact ratio, results from each implementation analysis must first be converted to a natural logarithm, averaged, and then exponentiated to yield the average ratio value.

HireVue Aggregate “Bias Audit” Analysis for Think - Digitspan, Shapedance for Intern or new college graduate jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	1188	0.80	Comparator Group		1080	0.29	Comparator Group
Female	409	0.77	0.95		403	0.27	0.90

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 17 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 17 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	248	0.80	Comparator Group		244	0.27	0.84
White	621	0.76	0.96		643	0.29	0.91
Black or African American	270	0.69	0.86		257	0.26	0.88
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	200	0.80	1.01		220	0.32	Comparator Group
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	40	0.77	0.95		53	0.29	0.93

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 41 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 46 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Think - Digitspan, Shapedance for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	188	0.78	Comparator Group		201	0.27	1.00
Male White	467	0.77	1.00		550	0.28	Comparator Group
Male Black or African American	139	0.71	0.91		163	0.24	0.91
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	102	0.77	1.02		134	0.32	1.24
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	16	0.69	0.87		41	0.35	1.23
Female Hispanic or Latino	17	0.76	0.88		35	0.20	0.78
Female White	54	0.79	0.95		138	0.30	1.09
Female Black or African American	37	0.76	1.03		85	0.32	1.25
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	24	0.88	1.01		72	0.35	1.21
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	0	—	—		0	—	—

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 47 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 65 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

New York City Local Law 144 “Bias Audit” for HireVue for Willingness to Learn for Intern or new college graduate jobs

Conducted by DCI Consulting Group (DCI)

Analysis Information

- Summary produced on: July 5, 2024
- Data analyzed were based on nationwide applicants who were assessed between 2022 to 2024
- The assessment assigns applicants to one of three tiers (i.e., Bottom Tier, Middle Tier, Top Tier), yielding 2 threshold comparisons for analysis (i.e., the threshold between Top/Middle Tier and Bottom Tier and the threshold between Top Tier and Middle/Bottom Tier)

Purpose

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“Bias Audit” Analysis Methodology ¹

The analyses conducted for this audit are based on data from multiple employers using the AEDT in one or more different implementations as part of their selection processes. Analyses were conducted separately for each employer's implementation(s) (hereafter these individual, or de-aggregated, analyses will be referred to as “by implementation”) and then results were aggregated to provide the tables in this report (referred to as “aggregated”). Before describing the aggregation process, a foundational understanding of the methodology used for analysis (related to a singular implementation of the AEDT by an employer) is required. As noted in the Analysis Information above, the AEDT assigns an applicant to a tier based on their performance. NYC's Local Law 144 and the rules published by the DCWP stipulate specific requirements for conducting the required analyses. Where the AEDT assigns applicants to tiers, an 'impact ratio' must be calculated for each demographic group for each threshold separating the tiers.² Note that NYC specifies this calculation to be the Focal Demographic Group selection rate divided by the Comparator Demographic Group selection rate. This analysis is conducted separately for each implementation of the AEDT in the dataset provided to DCI.

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Results Tables

Aggregated results are presented in tables, each of which provides an indication of the demographic group (i.e., gender, race/ethnicity, or both), the aggregated number of applicants that comprise the demographic group, the aggregated selection rate for the demographic group, and the aggregated NYC law impact ratio. In each analysis table, the comparator group is identified. Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

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³ Selection rates and impact ratios calculated for the tables in this report are based on the thresholds between tiers. This may or may not reflect employer-specific operational use of the AEDT with respect to making selection process decisions.

⁴ Sufficient data for a demographic group to be analyzed for an implementation requires that group comprise at least two-percent of the sample, and that there be at least three applicants above the threshold and three applicants below the threshold in the demographic group.

⁵ When aggregating the number of applicants, results from each implementation in the aggregation group are summed; when aggregating the selection rate, results from each implementation are averaged; when aggregating the impact ratio, results from each implementation analysis must first be converted to a natural logarithm, averaged, and then exponentiated to yield the average ratio value.

HireVue Aggregate “Bias Audit” Analysis for Willingness to Learn for Intern or new college graduate jobs

NYC Law Impact Ratios for Gender

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male	3524	0.69	Comparator Group		3524	0.38	Comparator Group
Female	2931	0.68	0.95		2931	0.36	0.97

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 509 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 509 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

NYC Law Impact Ratios for Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Hispanic or Latino	831	0.64	0.97		844	0.40	0.98
White	3289	0.68	Comparator Group		3225	0.40	Comparator Group
Black or African American	821	0.63	0.94		808	0.32	0.74
Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Asian	1143	0.66	0.90		1103	0.38	0.83
Native American or Alaska Native	0	—	—		0	—	—
Two or More Races	151	0.63	0.89		153	0.45	1.02

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 697 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 694 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.

HireVue Aggregate “Bias Audit” Analysis for Willingness to Learn for Intern or new college graduate jobs

NYC Law Impact Ratios for the Combination of Gender and Race/Ethnicity

Demographic Group	Number of Applicants	Selection Rate for Top + Middle Tier vs Bottom Tier	Impact Ratio for Top + Middle Tier vs Bottom Tier		Number of Applicants	Selection Rate for Top Tier vs Middle + Bottom Tier	Impact Ratio for Top Tier vs Middle + Bottom Tier
Male Hispanic or Latino	460	0.62	0.95		380	0.45	0.98
Male White	1840	0.69	Comparator Group		1539	0.45	1.00
Male Black or African American	373	0.62	0.94		302	0.38	0.73
Male Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Male Asian	634	0.63	0.86		608	0.35	0.73
Male Native American or Alaska Native	0	—	—		0	—	—
Male Two or More Races	53	0.63	0.95		34	0.52	1.29
Female Hispanic or Latino	305	0.67	0.88		304	0.42	0.93
Female White	1411	0.73	0.95		1411	0.44	Comparator Group
Female Black or African American	409	0.68	0.93		377	0.40	0.90
Female Native Hawaiian or Other Pacific Islander	0	—	—		0	—	—
Female Asian	438	0.68	0.90		477	0.39	0.86
Female Native American or Alaska Native	0	—	—		0	—	—
Female Two or More Races	56	0.77	0.95		56	0.35	0.64

A cell with “—” indicates insufficient data to calculate this aggregate statistic.

Note: There were 743 applicants with unknown or missing gender information for Top/Middle Tier vs Bottom Tier analyses; there were 707 applicants with unknown or missing gender information for Top Tier vs Middle/Bottom Tier analyses; data from applicants with missing demographic data are not included in the calculations for this table.

Please note that, due to the methods required to aggregate results, methods or analyses intended for singular implementations cannot be applied to the aggregated values in the table. Additionally, this means that the aggregated impact ratios reported in the tables cannot be computed directly from the aggregated selection rates appearing in the tables.