**Headcount VS New Hire Assessment**

*Assume:*

*1. You are working with the CHRO of IBM to draft the 2021 diversity goals for enterprise. You have the headcount file for IBM and the New Hire file. Please share your data analysis, approach and the overall diversity % target basis the same. What's the story you would tell about this data? Share whatever other assumptions you make.  
  
2. Share a root cause analysis based on your observations.  
  
3. Share your recommendation plan for IBM to reach the diversity target you stated.*

Shared Keys Between 2 tables:

* Geography
* Country (hc[‘Country ID’] needs to be renamed)
* Region
* Work Location Name
* Sex (nh[‘Sex Short ID’] and hc[‘Sex Code’] needs to be renamed)
* Hire Date (nh[‘Month ID’] needs to be renamed and hc[‘Hire Date’] needs to be converted to month/year)
* Salary Band Code
* Primary Job Role
* Pri Job Category Name
* Sec Job Category Name
* URM
* Is Tech Job Role
* Grouping Code 1
* Hire Type
  + nh[‘Movement Group 2 ID’] needs to be renamed to ‘Hire Type’

Bias

* Diversity is the important factor for alignment (focusing on Sex for purpose of this task but will include small portion of URM)
* Removed columns due to too many null values, redundant, and/or irrelevant to analysis:
  + Grouping\_Code\_2
  + Movement\_Group\_1\_ID
  + Status
  + BP\_CNUM
  + Work\_Location\_Code
  + Salary\_Band\_Movement\_Up
  + *Other combined/renamed columns*

Data Analysis

* URM
  + New Hire

Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated

*Among New Hires, 6 people are considered URM (8.8%) and 62 people are not URM (91.2%).*

* + Head Count

Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated

*Among Head Count, 565 people are considered URM (7.0%) and 7561 are not URM (93.0%)*

* + Total

*Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated*

*In total, 571 people are considered URM (7%) and 7623 people are not URM (93%). So although head count already expresses a low URM representation, only 6 of 68 new hires are URM.*

* Sex
  + New Hire

*Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated*

*Among New Hires, 54 people are Male (79.4%) and 14 people are Female (20.6%)*

* + Head Count

Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated

*Among Head Count, 6422 people are Male (79%) and 1704 people are Female (21.%)*

* + Total

Chart, bar chart

Description automatically generatedChart, pie chart

Description automatically generated

*In total, there are 6476 Males (79%) and 1718 Females (21%)*

* Primary Job Category vs Sex

Chart, waterfall chart

Description automatically generatedChart, box and whisker chart

Description automatically generated

*Among Primary Job Categories, most head count and new hires fall under Software Development & Support. The least amount is in Research and Data Science, and Females are scarce to none in practically every category besides SD&S. According to the graphs above, headcount already shows an overwhelming amount of employees in SD&S, but new hires does not reflect an attempt to fill the gaps; in fact, Design & Offering management, HW Development & Support, and Research are categories that were not hired for at all. This may reflect the company’s/department’s business focus.*

* Region vs Sex

Chart, bar chart

Description automatically generatedChart, bar chart

Description automatically generated

*When looking at the relationship between Region and Sex, US, Canada, and UKI reflect similar hiring trends compared to head count. In all regions, females represent little to none (especially compared to their counter-part), except in ISA; ISA has hired an equal number of females as of males. These charts may be able to express hiring preference trends depending on regions.*

* Hire Date vs Sex

Chart

Description automatically generated

*As seen on a timeline, Male hires have seen significant spike since 1984, particularly in Jan 2018. There have been no significant increase, in comparison, in Female hires.*

Results Based on Sex

It is apparent that there are trends in regard to the number of females in both head count and new hires. Looking at the Job Category role, there doesn’t seem to be significant gender bias when comparing the Female-to-Male ratio across the board, however that does present opportunity to hire more females in low head count categories to help make up the overall gender gap. Providing accessible educational and training resources to encourage more females into the other job categories may be helpful.

Upon inspecting Region bias, there is significant trend over the years to hiring in US, UKI, and Canada, and all predominately Male. Again, this may present an opportunity to hire more females in other countries to help make up the gender gap across the board, but if overall hiring is mostly done in US, UKI, and Canada, then there should be more promotion for female presence in these areas. Some ways this can be done may be through community inspiration from existing female head count in these regions, such as Women in Tech, or providing accessible educational resources. Re-skilling headcount for those not currently in tech is also a suggestion.

There are more factors that may contribute to this gender gap and are worth exploring. Ultimately, I believe it is crucial for organizations to prioritize diversifying their gender ratio. Compared to February 2020 data, women’s employment rate is down 9% while men’s employment rate is down 7.8%. Female unemployment between ages 20-24 is almost double that of women aged 25-54. It’s even estimated that about 58% of workers in the most at-risk occupations are women, which is why it is important to re-skill more women into less at-risk occupations (like technical roles) and to encourage more women into job categories that are already needing more head count (cited: https://www.catalyst.org/research/women-in-the-workforce-united-states/) .