

a.

b.

- i. Increased complexity in fairness metrics and evaluation: In order to comply with each protected attribute and to use the fairness metrics that do binary comparison i.e. compares 2 groups at a time. The amount of comparisons to be done grows exponentially. The fairness metrics become more complex and multidimensional. Simple binary fairness metrics like demographic parity or equalized odds would need to be extended to account for all eight attributes simultaneously. This introduces challenges in defining and measuring fairness across multiple intersectional subgroups.
- ii. Limited data and potential discriminatory proxies: Ensuring fairness with respect to eight attributes requires having sufficient data on each attribute for all applicants. However, collecting sensitive personal data related to religion, marital status, or public assistance income may be challenging or restricted due to privacy concerns and regulations.