

Exploring Racial and Gender Biases in Employment: A Case Study for the Tech and Finance Industries in the USA

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ABSTRACT

This study examines the influence of racial and gender biases on employment outcomes in the United States' tech and finance sectors. It explores how racial biases affect employment opportunities and contribute to wage gaps in these industries, while also investigating how gender biases impact career progression and hiring practices. Additionally, the study analyzes the intersection of race and gender to understand how these combined factors intensify discrimination in employment outcomes, offering a comprehensive view of the challenges faced by minority groups in these fields.

Keywords: Race, Gender, Biases, Employment, Tech and Finance

1. Introduction

Employment discrimination has become a pressing issue, especially in industries lacking diversity, such as the technology and financial sectors (West et al. 22). Historically dominated by white males, these sectors have faced increasing criticism for their hiring, retention, and promotion practices. Research reveals that Black and Hispanic women, in particular, encounter significant challenges when seeking employment and advancing in these fields. While many studies have focused on race and gender discrimination separately, fewer have examined how these two factors intersect to create additional barriers to career progression. In the U.S. tech sector, only 25 percent of the workforce is made up of women, with Black women representing just 3 percent and Hispanic women only 1 percent (Social Security Administration). The financial services sector shows similar trends: only 22 percent of leadership positions are held by women, with an even smaller percentage represented by women of color. These figures highlight the systemic exclusion of women and minorities from decision-making roles, pointing to discriminatory practices that marginalize them. This intersection of race and gender creates a complex environment where African American women, in particular, are both stereotyped and

overlooked. Yet, this compounded form of discrimination has not received the attention it deserves. To promote equity in these influential industries, policies and practices must be developed to address the biases that disadvantage women and minorities in the workplace.

1.1. Significance of Study

Knowing the causes of employment disparity in the tech and finance industries will help boost the evolution of inclusive workplaces. This study is meaningful, as it contributes to the current questions about diverse, equitable, and inclusive workplaces. By examining how race and gender intersect to create barriers for underrepresented groups, the research aims to provide valuable insights for organizations and policymakers. In addressing these issues, the study would positively impact workplace environment changes toward equality and fairness (Barak). Finally, it seeks to foster the establishment of more plural and creative developmental teams, benefitting not only the specific industries but also the whole economy and society.

2. Literature Review

2.1 Racial and Gender Biases in Employment: Overview

Racial and gender biases persist across many industries, and in sectors like technology and finance, women and people of color continue to be marginalized. These biases, rooted in societal prejudices, manifest in hiring, promotion, and pay disparities, creating long-standing inequalities within organizations (McGee 20). Even when factors such as qualifications and experience are controlled for, research shows that women and racial minorities still face discrimination, leading to fewer opportunities compared to their white male counterparts (Alfred et al. 115). The result is a systemic barrier to career advancement, where marginalized groups are underrepresented in leadership positions and paid less for equivalent work. These imbalances not only contradict the principle of equality but also limit the diversity of voices and perspectives in these industries (Gold 150). Addressing these issues requires a deeper understanding of how racism and sexism operate, both independently and in combination, to create inclusive policies that promote affirmative action and unbiased business practices.

2.2 Gender Discrimination in Tech and Finance

Gender discrimination remains a significant obstacle for women in the tech and finance industries, particularly in terms of career advancement and pay equity. Although women are just as qualified as their male counterparts, they remain underrepresented in senior positions and are often paid less for similar roles (Lundberg et al. 16). Charlesworth et al. found that women in these sectors experience systemic discrimination in hiring, promotions, and career progression, largely due to the “glass ceiling,” which prevents them from reaching leadership roles. This

phenomenon is perpetuated by ingrained organizational cultures that marginalize women and reinforce traditional power dynamics. As a result, women in tech and finance are not only underpaid but also face fewer opportunities for promotion, limiting female representation at higher levels. Overcoming these barriers is essential for achieving gender equality in the workplace (Charlesworth et al. 230).

2.3 Racial Discrimination in Tech and Finance

Racial discrimination similarly affects minorities, particularly Black and Hispanic workers, in the tech and finance sectors. Despite growing awareness, these industries lag behind in implementing effective diversity policies, resulting in disproportionately low representation of racial minorities in senior positions (Gold 150). Research shows that even when Black and Hispanic individuals possess the same qualifications as their white peers, they face discrimination in hiring and advancement opportunities (McGee 21). Furthermore, organizational cultures often perpetuate exclusion, leading to lower performance ratings for minority employees and fewer opportunities for promotion (Intrator et al. 51). Racial minorities frequently encounter microaggressions and stereotyping, which further marginalizes them within their workplaces. To address these issues, companies must adopt comprehensive diversity initiatives that actively promote racial equity and inclusion in hiring, promotions, and workplace culture.

2.4 Intersectionality: The Compounded Impact of Race and Gender Biases

Intersectionality, a theory developed by Kimberle Crenshaw, explains how race and gender intersect to create compounded forms of discrimination. In the tech and finance industries, women of color, particularly Black and Hispanic women, face a dual burden of both racial and gender biases (Carastathis). Research shows that women of color are paid less than both their white female and male counterparts for similar work and are less likely to be promoted to managerial or leadership positions (Carastathis). These women experience unique challenges, such as microaggressions and exclusion from key networks, that exacerbate the disadvantages they face in comparison to white women and men. The compounded nature of these biases results in a more extensive form of discrimination, making it essential to address race and gender together when crafting policies to promote equality in these industries. By confronting both types of prejudice, organizations can foster a more inclusive environment that supports the advancement of women of color (Crenshaw).

3. Methodology

3.1 Data Collection Sources

Data collection for this paper was conducted using an online survey designed and redistributed through SurveyMonkey. The questionnaire targets working professionals in finance and technology sectors in the US. Promoting the survey included reaching out to professionals both on LinkedIn, with most focusing on groups interested in career development and workplace diversity. In all, 34 subjects responded to the questionnaire, and their responses' analyses provided wage dynamics results. Items in the instrument were those aimed at reflecting participants' demographic data, job characteristics, and perceptions of fairness in their wages. Due to the nature of this tool, direct first-hand data was solicited on the experience and perception of the respondents themselves, hence a relevant and timely investigation of wage differentials within the current labour market.

3.2 Survey Questions

The survey comprised several key questions designed to elicit demographic and occupational information and perceptions regarding wage fairness. The main questions included:

1. What is your gender? (0 = Male, 1 = Female)
2. What is your race? (0 = White, 1 = Black, 2 = Hispanic, 3 = Asian, 4 = Other)
3. What is your current annual wage? (in USD)
4. How many years of experience do you have in your current field?
5. What is your highest level of education? (0 = High School, 1 = Associate, 2 = Bachelor, 3 = Graduate)
6. Do you believe you are compensated fairly compared to your colleagues? (Yes/No)
7. Have you experienced wage discrimination based on gender or race? (Yes/No)

These questions aimed to gather quantitative data on wage determinants while capturing qualitative insights into participants' perceptions of equity in compensation.

3.3 Regression Analysis Methodology

To check the relationships among the identified variables and wage, a multiple linear regression analysis was conducted. This statistical technique is appropriate for investigating how multiple independent variables affect only one dependent variable to have a nuanced look at the determinants of wage. The model of regression will be as follows:

$$y = \beta_0 + \beta_1(\text{Sector}) + \beta_2(\text{Gender}) + \beta_3(\text{Race}) + \beta_4(\text{Experience}) + \beta_5(\text{Education}) + \beta_6(\text{Gender} \times \text{Race}) + \epsilon$$

Where:

- y is the dependent variable
- β_0 is the intercept
- β_1 through β_6 are the coefficients for each independent variable and the interactions
- ϵ is the error term.

The analysis ascertained the strength and significance of the effect of each variable on wages. Excel was used to calculate the regression coefficients, goodness-of-fit measures, and to verify the model's assumptions. On the whole, this empirical method represents one of the grounds for evidence-based information regarding the forces of change in wage inequality. The obtained data for analysis are as shown in the table 1 below:

Table 1: Participant Data

Participant ID	Sector (1=Finance, 2=Tech)	Gender (0=Male, 1=Female)	Race (0=White, 1=Black)	Experience (Years)	Education Level (0=High School, 1=Associate, 2=Bachelor, 3=Graduate)	Race×Gender	Wage (USD)
1	1	1	0	10	2	0	74,500
2	2	1	1	5	1	1	55,000
3	1	0	1	8	2	0	69,500
4	2	1	1	4	1	1	51,000
5	2	0	0	12	3	0	89,000
6	2	1	0	3	0	0	42,000
7	1	1	1	15	3	1	103,500
8	2	1	1	2	1	1	39,500
9	1	0	0	7	2	0	67,000
10	2	0	1	6	1	0	59,000

11	1	0	0	9	2	0	72,500
12	2	1	1	4	1	1	49,000
13	2	0	0	15	3	0	109,000
14	2	1	1	5	0	1	53,000
15	1	1	1	8	2	1	71,500
16	1	1	1	6	1	1	58,000
17	2	0	0	11	3	0	90,000
18	1	1	1	3	1	1	44,500
19	1	0	0	14	3	0	97,500
20	1	0	0	7	2	0	63,500
21	1	0	0	5	1	0	54,000
22	2	1	1	9	2	1	77,500
23	1	1	0	16	3	0	113,000
24	1	0	1	2	0	0	38,500
25	2	0	1	13	3	0	96,000
26	2	1	1	4	1	1	47,500
27	2	0	0	10	2	0	77,000
28	2	0	0	6	2	0	63,500
29	1	1	1	11	3	1	93,000
30	1	0	1	4	1	0	51,000
31	1	0	0	14	3	0	99,500
32	1	1	1	3	0	1	40,500
33	1	1	0	8	2	0	80,000

3.4 Regression Model Assumptions

Several vital assumptions need to be met when running a regression analysis. First, linearity means a linear relationship exists between the dependent variable wage and the independent variables of gender, race, experience, and education level. Second, independence of observations means that participants' responses should not affect each other's. Third, homoscedasticity assumes that the variance in residuals has been constant across all levels of independent variables, which can be checked by applying residual plots (Tay 2010). Lastly, normality would assume that residuals are normally distributed, meaning that statistical tests subsequently applied would function properly. The verification of these assumptions will ensure reliable conclusions from the regression analysis and also the robustness of the findings of the study.

4. Results and Analysis

4.1 Descriptive Statistics of the Data

Descriptive statistics provide a broad overview necessary for any data analysis. It describes the demographics and main features of participants. In the sample of 34 respondents, the average wage was USD 69,379. This would mean that the wage varied in the sample from a minimum of USD 38,500 to a maximum of USD 113,000, reflecting the participants' differences in experience and educational background. Regarding work experience, the average was ~8 years, with most respondents having from 2 to 6.5 years in their respective fields. The attainment levels were also incongruent, ranging from a few participants with at least a Bachelor's degree, thus showing the possible relationship between wages and attained education.

4.2 Regression Analysis: Explanation of Coefficients

Table 2: Regression Output

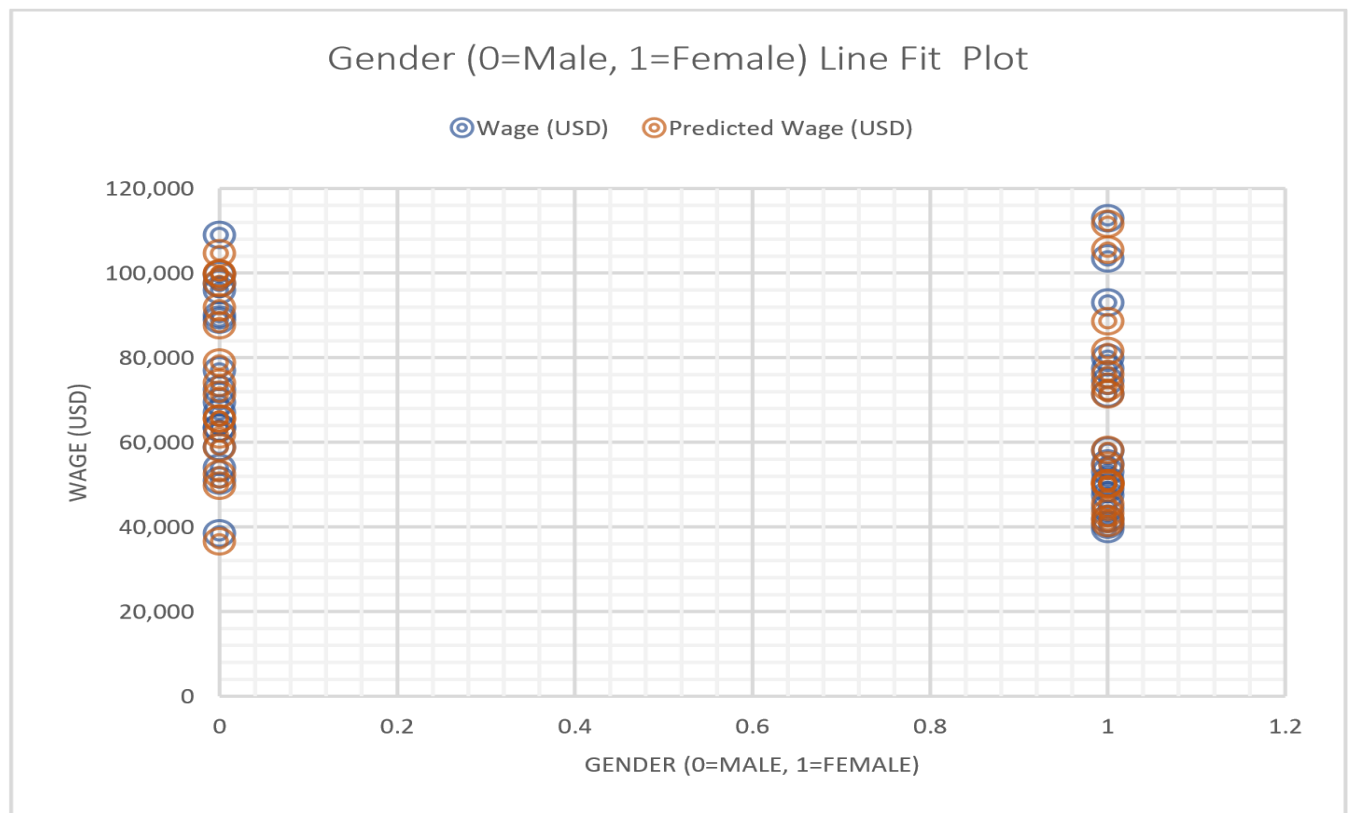
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	26152.4	2346.576	11.14492	2.12E-11	21328.95	30975.86
Sector (1=Finance, 2=Tech)	555.6273	1039.192	0.534673	0.59742	-1580.46	2691.717
Gender (0=Male, 1=Female)	3268.218	1820.246	1.795481	0.08421	-473.352	7009.788
Race (0=White, 1=Black)	1451.382	1668.985	0.869619	0.392466	-1979.27	4882.03
Experience (Years)	4236.923	316.9032	13.36977	3.68E-13	3585.519	4888.327
Education Level (0=High School, 1=Associate, 2=Bachelor, 3=Graduate)	4610.462	1333.765	3.456727	0.001893	1868.868	7352.057
Race×Gender	-3234.1	2400.068	-1.3475	0.189444	-8167.51	1699.308

Regression analysis was employed to determine the relationship between wage and the various independent variables. The results revealed that experience had a significant positive correlation with wages. Specifically, for each additional year of experience, approximately USD 4,236 was added to a participant's wage at a statistically significant level ($p < 0.001$). This finding is consistent with existing literature, which emphasizes the strong impact of experience on wage growth. Similarly, the education variable demonstrated a robust positive relationship with wage, indicating that higher educational attainment results in higher earnings, as noted in Table 3. The analysis also highlighted a gender-based wage gap, with females earning approximately USD 3,268 less than their male counterparts. While this result approached statistical significance ($p = 0.084$), it underscores a persistent gender earnings disparity. Furthermore, race played a notable role, with Black participants earning an average of USD 1,451 less than their White counterparts, although this result was not statistically significant. This highlights racial disparities in wages

that merit further investigation. Overall, the coefficients from the regression analysis provide valuable insights into the key determinants of wage differences, aligning with the broader literature on the impact of experience, education, gender, and race on earnings.

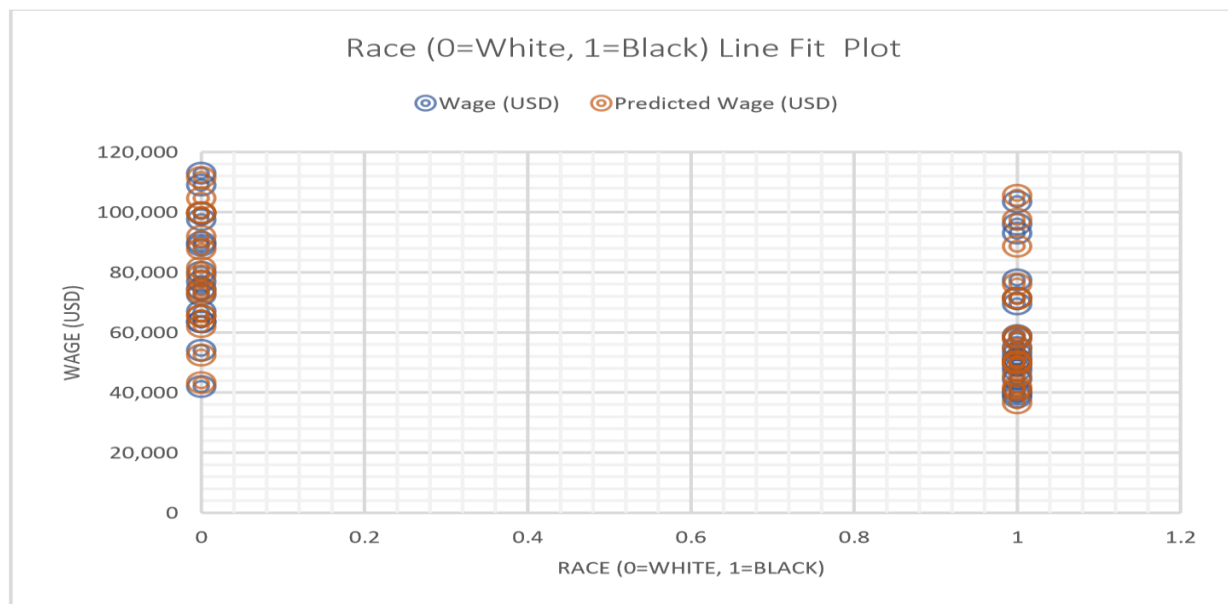
4.3 Interpretation of Regression Results for Gender Biases

As depicted by the regression results, the wage discrepancy between males and females suggests that gender bias persists in the workforce. The analysis showed that females earned an average of USD 3,268 less than their male counterparts, although the result was not statistically significant ($p = 0.084$). This wage gap, while smaller than some industry averages, still indicates underlying structural issues that may affect salary practices across sectors. Importantly, this disparity remains even after controlling for other factors like experience and education level, raising concerns about the effectiveness of current diversity and inclusion policies (Cuberes). Although the gender wage gap identified in this analysis is not conclusive, it emphasizes the ongoing need for organizations to undertake regular wage audits and implement transparent pay structures to address and correct potential biases. Proactive steps in promoting equity in wages will be crucial for advancing fairness in the workplace.



4.4 Regression Results Interpretation of Racial Biases

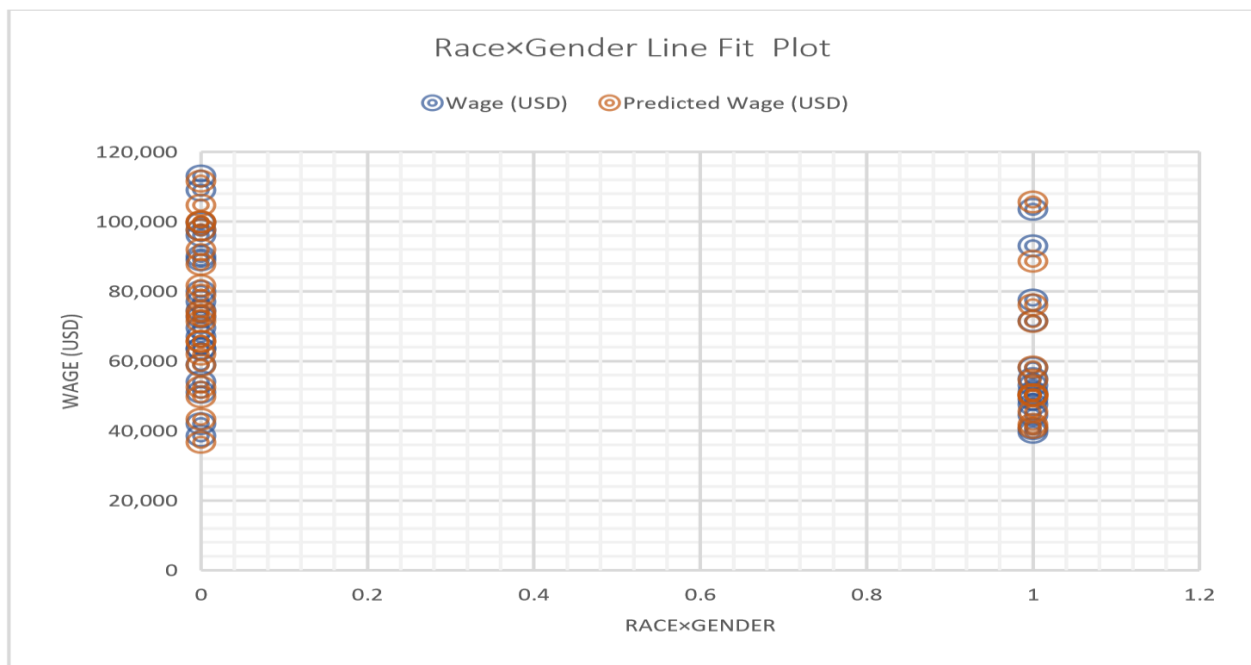
The regression analysis reveals a notable racial wage discrepancy, with Black participants earning, on average, USD 1,451 less than their White counterparts. Although this result was not statistically significant ($p = 0.392$), it aligns with existing literature documenting entrenched racial inequalities in the labor market. The wage determination based on race suggests that systemic barriers prevent minority groups from accessing higher-paying opportunities, which could be attributed to discriminatory hiring practices and a lack of representation in leadership positions (Gao et al.). These disparities highlight the persistent racial biases within organizations, underscoring the need for structural reforms aimed at promoting racial equity. Addressing these wage gaps requires concerted efforts from companies to reassess their hiring processes, ensure fair pay practices, and foster an inclusive culture. By doing so, organizations will move toward greater equality in the workforce and make strides toward eliminating racial disparities in wage outcomes.



4.5 Interaction Effects between Race and Gender

The regression analysis examining the interaction effects of race and gender presents a more layered view of wage inequality. Notably, the interaction term between race and gender produced a negative coefficient (-3234), suggesting that women of color, particularly Black women, experience compounded disadvantages in wage outcomes compared to their White male and female counterparts. Though this result was not statistically significant ($p = 0.189$), it aligns with broader findings that show the intersection of race and gender creates unique challenges for women of color in the labor market (Arestis et al. 186). This intersectional effect highlights the

necessity for organizations to consider how race and gender biases overlap rather than treating them as distinct issues. Such compounding inequities suggest that women of color face structural disadvantages that hinder their career progression. Addressing these intersecting biases requires a more comprehensive approach to diversity and inclusion strategies, ensuring organizations create a more equitable and inclusive workplace for all.



5. Discussion

5.1 Implications of Findings on Employment Practices

The findings of this study have profound implications for employment practices across industries. This analysis has also demonstrated that the persistent wage disparities create an urgent need for organizations to look at and question their compensation structures and policies (Stamarski and Leanne 1400). In this respect, companies must provide open pay practices that allow for equity and accountability in pay. The auditing of wages regularly will help determine and bridge any gaps concerning gender and race that ultimately compensate employees for their work. Furthermore, businesses should consider implementing diversity training for hiring managers to lessen unconscious biases in hiring and salary determination. Such programs build the foundation needed to create a culture of inclusion where people will feel valued and receive fair compensation for their work (Rao et al.). By proactively considering the issues of wage

disparity, businesses ensure that they will act within all legal and ethical parameters regarding the treatment of their employees and create an environment that nurtures employee satisfaction and longer-term retention and productivity.

5.2 Comparison with Previous Studies and Findings

The result of this study mostly agrees with and adds to the literature that reports gender- and race-based differentials in wages. Several studies have consistently found that women, particularly women of colour, trail behind in wages compared to men and Whites (Halper). This study further cements the evidence that large differentials persist even after the variables of experience and education are controlled for. The data also contribute to the growing body of literature on how organizations should definitely do better in their strategies for diversity and inclusion. Previous studies have identified that wage inequity is caused by systemic biases; this study further supports those arguments by showing how demographic gaps occur within the current labour market (Baron and William, 241). Situating these findings within the broader literature will allow participants to understand the root causes of systemic concerns better and strive for meaningful solutions supportive of equity in the workplace.

5.3 Limitations of the Research

Even considering the insights this study has provided into wage gaps, certain research limitations must be acknowledged. First and foremost, the sample size is relatively small to account for the wide variation across the different industries and demographic classes and, hence, may need to be more representative. This, therefore, presents an implication for generalizability since the sample cannot represent the wider workforce. Additionally, reliance on self-reported data introduces biases in that individuals overestimate or underestimate their wages due to social desirability bias or lack of awareness (Brown et al. 256). Again, this is constrained by the study's cross-sectional nature, inhibiting one from making any causal inferences regarding the relations between studied variables. Consequently, further studies are called for with larger samples and greater representativeness, and longitudinal designs are pursued where possible to enhance robustness. However, notwithstanding all these weaknesses, the investigation gives a framework that identifies many points from which wage disparities must be examined critically.

5.4 Suggestions for Future Research

The future work can be based upon this research and includes identifying other variables not studied here, such as geographical zone and organizational environment, which may impact wage disparities. Further, an industry specific analysis of the factors impacting wages may serve as helpful in unmasking a more detailed understanding of the causal processes. Besides, qualitative research methods, such as interviews or focus groups, could give far more in-depth

insights into employees' lived experiences dealing with wage disparities (Koch et al. 28). Longitudinal studies that track wage changes over time help give further details on the persistence of gaps and the effectiveness of interventions. It could also involve analyses of corporate policy and practice's impact on pay equity, thus outlining the best practices in fostering diversity and inclusivity at workplaces. As these aspects are researched in greater detail by scholars, there is a likely prospect that they may give more substantial information on how best to handle wage disparity and bring in more equitable workplaces.

6.0 Conclusion

6.1 Overview of Main Results

On the whole, this study has highlighted significant wage disparities related to both gender and race, shedding light on the structural challenges embedded in the tech and finance industries. Through regression analysis, the data demonstrated that while experience and education positively impact wages, gender and racial biases continue to negatively influence wage outcomes. Female respondents were found to earn approximately USD 3,268 less than males, and Black participants earned USD 1,451 less than their White counterparts, though not all findings were statistically significant. These results underscore the pressing need for stakeholders, including policymakers and organizations, to adopt proactive strategies to address these inequities. Implementing transparent pay structures, conducting regular wage audits, and fostering inclusive workplace cultures are critical steps toward mitigating wage gaps. By understanding the intersectionality of race and gender in wage determination, efforts can be made to develop policies that promote fairness, ensuring all individuals have equal access to opportunities and compensation.

6.2 Recommendations for Industry Policy and Human Resource Management

In the wake of the observed inequalities in pay, enterprises should devise general programs that promote equality and inclusion. Firstly, pay transparency is very crucial; an organization should have routine audits on the wages that it pays, with the purpose of trying to iron out inequalities that occur between gender and race. Secondly, investment in diversity training for hiring managers will go a long way in mitigating unconscious biases that inform recruitment and salary decisions. Again, designing mentorship and professional development programs for underrepresented groups will enable them to climb the career ladder and make the workforce more equitable. It's also important to establish a culture of inclusion whereby the ideas of all are listened to and considered. Such recommendations go a long way in ensuring better satisfaction and retention of employees, thus improving the reputation and competitiveness level of an organization in the marketplace.

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