

Impact of Qualification, Experience, and Gender on Salary Levels: An Empirical Study

Rishi Torne¹, Nitisha Jain², Prachi Vasant³

^{1,2}MBA (2025-27), Avantika University Ujjain, India

³Assistant Professor (SOM), Avantika University, Ujjain, India

Abstract-- This study aims to analyse the presence and extent of salary discrimination based on key demographic and professional variables: gender, work experience, and educational qualification. The research specifically investigates whether variations in compensation among working professionals are attributable to discriminatory patterns related to these factors, moving beyond simple influence to a critical assessment of fairness in compensation. The study is based on a defined sample of employees representing diverse educational backgrounds, experience ranges, and gender groups.

A quantitative research design was employed to ensure clarity and objectivity in examining these relationships. The dataset was systematically organized, cleaned, and categorized. Descriptive statistics were used to summarize the sample characteristics. Descriptive statistics were applied to summarize the overall characteristics of the sample, while comparative methods were used to examine salary differences across qualification levels, experience categories, and gender groups. In addition, correlation analysis was conducted to evaluate the strength and direction of the relationships between these variables and salary. These methodological steps provide a structured approach for understanding how personal and professional attributes may shape salary patterns in the selected population.

Keywords--

- Salary Determination
- Qualification and Income Relationship
- Work Experience and Pay
- Gender Pay Perception
- Chi-Square Test
- ANOVA Analysis
- Compensation Structure
- Human Resource Analytics
- Wage Determinants
- Organizational Behavior
- Employee Compensation
- Statistical Analysis in HR

I. INTRODUCTION

The determination of an individual's salary is a fundamental mechanism of resource allocation and social stratification in any modern economy.

Compensation is not merely a financial transaction for labour rendered; it is a complex signal that reflects the economic value of a role, societal perceptions of individual merit, the dynamic forces of the labour market, and, often, the enduring legacy of historical biases. As the global economy transitions further into a knowledge and technology-driven paradigm, understanding the precise drivers of remuneration becomes increasingly critical. This study seeks to empirically investigate the contemporary influence of three fundamental variables—educational qualification, work experience, and gender—on salary levels among working professionals, setting this analysis against the backdrop of a profound historical evolution in compensation norms and using it to project future trajectories.

Historical Context and the Evolution of Salary Determinants

The criteria used to determine earnings have never been static; they have undergone dramatic shifts in response to technological revolutions, economic restructuring, and evolving social contracts. The provided table succinctly captures this trajectory, illustrating how the primary drivers of salary and the status of gender in the workplace have been inextricably linked.

In the Pre-Industrial and Early Industrial Era, the economy was rooted in agriculture and manual craft. As the table indicates, salary was primarily driven by Tenure, Physicality, and Seniority. Within guilds and early factories, a worker's value was measured by their physical endurance, loyalty over time, and mastery of a tangible craft. Formal education was a privilege of the elite and held little relevance for the vast majority of the labour force. This period was marked by what the table terms "Extreme Segregation/Exclusion" for gender. Women's labour, though essential, was largely confined to the unpaid domestic sphere or poorly paid informal roles, systematically excluding them from the formalized, salaried economy and the accumulation of seniority that came with it.

The Mid-20th Century, encompassing the industrial and post-industrial boom, witnessed a paradigm shift. The rise of universal public education and corporate bureaucracy gave rise to the meritocratic ideal.

Consequently, Formal Qualification and Longevity became the primary salary drivers. A university degree or professional certification became a powerful signal of cognitive ability and trainability, justifying higher starting pay and access to managerial tracks. Similarly, work experience became formalized as a quantifiable asset within internal labour markets, where pay scales were explicitly tied to years of service. However, as the table highlights, this era also saw the "Gender Pay Gap Institutionalized." While women entered the workforce in unprecedented numbers, particularly during and after World War II, they did so on unequal terms. Cultural norms that positioned men as primary breadwinners, coupled with structural barriers that funnelled women into lower-paid "pink-collar" jobs and denied them promotions, cemented a pay gap that persisted even for comparable work and qualifications.

In the Present-Day Digital Age, the landscape of work and pay has been transformed once more. While foundational educational qualifications and a proven track record remain crucial, the emphasis has pivoted. As noted, Technical Skills and Specific Experience now often supersede general educational degrees in driving rapid salary growth. The premium is on demonstrable, often niche, competencies such as coding, data analytics, digital marketing, and AI specialization, which are in high demand and short supply. The conversation around gender, as the table moves to its final column, has matured from a focus on simple inclusion to a "Focus on Equity and Discrimination." This shift has been catalysed by robust legislation (e.g., strengthened Equal Pay Acts), widespread social movements, and increased organizational transparency efforts, such as pay gap reporting. The question is no longer merely about women's presence in the workforce, but about the systemic fairness of their outcomes, requiring a critical analysis of biases in hiring, promotion, and compensation structures.

Future Aspects: The Next Frontier of Compensation

Looking ahead, the determinants of salary are poised for a seismic shift, moving beyond static credentials towards dynamic human capabilities. The premium will increasingly be placed on **learning agility** and the capacity for continuous reskilling over fixed qualifications. As AI automates routine tasks, uniquely human skills like creativity, complex problem-solving, and emotional intelligence will become the primary drivers of premium compensation.

Concurrently, the definition of valuable "experience" will transform. Tenure at a single organization will matter less than a proven portfolio of diverse, high-impact projects and outcomes. This will create a more fluid, project-based economy with steeper rewards for niche specialists.

The gender equity conversation will also enter a new phase, focusing on **inclusion and algorithmic bias**. As AI-driven systems play a larger role in hiring and compensation, a critical challenge will be to audit these algorithms to ensure they do not perpetuate historical discrimination under a veil of data-driven objectivity. Furthermore, pay equity analyses will need to expand beyond a male-female binary to encompass the entire gender spectrum. The future of fair pays hinges on managing this intersection of human potential and ethical technology.

II. LITERATURE REVIEW

This review synthesizes ten foundational studies to delineate the distinct and combined impact of educational qualification, work experience, and gender on salary levels. The selected literature provides robust empirical evidence on how each factor directly influences earnings, both independently and through their critical interactions.

1. Mincer, J. (1974). Schooling, Experience, and Earnings.

Impact Analysis: Mincer's work provides the foundational model for quantifying the independent impact of qualification and experience. His earnings function established that an additional year of schooling causes a direct and predictable increase in log earnings. Similarly, work experience exhibits a significant positive impact, though with diminishing returns, as captured by the quadratic term. This study successfully isolated these two human capital variables as primary drivers of lifetime earnings, creating a benchmark against which other influences, like gender, could be measured.

2. Blau, F. D., & Kahn, L. M. (2017). The Gender Wage Gap: Extent, Trends, and Explanations.

Impact Analysis: Blau and Kahn systematically measure the impact of gender on salary by decomposing the wage gap. Their analysis demonstrates that a substantial portion of the gap is directly explained by gender differences in measurable human capital—specifically, that men, on average, possessed more continuous experience and worked in higher-paying occupations. However, their most critical finding is the persistent "unexplained" impact of gender, which they attribute to discrimination and other unobserved factors, proving that gender itself exerts a direct negative effect on women's earnings, independent of qualifications.

3. Goldin, C. (2014). A Grand Gender Convergence: Its Last Chapter.

Impact Analysis: Goldin refines our understanding of the impact of experience.

She argues that the *type* of experience—specifically, the ability to work long, continuous, and inflexible hours—has an outsized positive impact on salary in high-skilled professions. The negative impact of gender arises because women disproportionately cannot supply this specific type of labour due to societal roles, leading to a pay penalty. Her work shows that the impact of experience is not gender-neutral; its reward structure disproportionately disadvantages women, creating a direct gender impact.

4. Altonji, J. G., & Blank, R. M. (1999). *Race and Gender in the Labor Market*.

Impact Analysis: This review formalizes the theoretical framework for measuring the impact of gender as a discriminatory force. It explains that even in models saturated with controls for qualification and experience, a residual negative coefficient for female gender indicates the likely causal impact of labour market discrimination. This paper provides the econometric and theoretical justification for interpreting a statistically significant gender dummy variable in a wage regression as evidence of a direct, negative causal impact on women's pay.

5. Bertrand, M., & Hallock, K. F. (2001). *The Gender Gap in Top Corporate Jobs*.

Impact Analysis: By studying top executives, Bertrand and Hallock effectively control for high levels of qualification and experience. The significant gender pay gap they find provides powerful evidence of the direct impact of gender. This impact manifests not only in raw salary differences but also in the channel of opportunity: women were placed in roles with smaller scope (e.g., not CEO), which directly reduced their compensation. The study proves that gender impacts salary both directly and indirectly through occupational segregation, even at the highest echelons.

6. Card, D. (1999). *The Causal Effect of Education on Earnings*.

Impact Analysis: Card's work is pivotal for establishing a causal impact of qualification on earnings. By leveraging natural experiments, he demonstrates that additional years of education cause higher earnings, separate from any correlation with innate ability. This provides the strongest possible evidence for the independent variable of "qualification" in a salary model. It confirms that policies increasing educational attainment should have a direct, positive impact on wages, a baseline against which gendered returns can be compared.

7. Manning, A., & Swaffield, J. (2008). *The Gender Gap in Early-Career Wage Growth*.

Impact Analysis: This study measures the dynamic impact of gender as experience accumulates. It finds that the negative impact of gender is not static but grows rapidly in the early career. This demonstrates that the returns to each additional year of experience are not equal for men and women. The impact of gender is therefore multiplicative with experience; it causes a cumulative disadvantage over time, showing that the effect of experience on salary is profoundly mediated by gender.

8. Correll, S. J., Benard, S., & Paik, I. (2007). *Getting a Job: Is There a Motherhood Penalty?*

Impact Analysis: Correll et al. provide experimental evidence of a direct causal impact of gender-based stereotypes. They show that the mere status of "mother" causes evaluators to recommend a lower starting salary and rate the candidate as less competent, even with identical qualifications and experience to non-mothers. This study isolates a pure "motherhood penalty," proving that the impact of gender can be direct and immediate, distorting the market's reward for human capital at the very point of hire.

9. O'Neill, J. (2003). *The Gender Gap in Wages, circa 2000*.

Impact Analysis: O'Neill's analysis emphasizes the powerful positive impact of continuous work experience on closing the gender wage gap. She argues that a significant portion of the gap's narrowing was caused by women's increased accumulation of uninterrupted experience. Her work highlights that the *negative* impact of gender is, in part, a function of historically lower levels of female labour force attachment. It underscores that the quantity and continuity of experience are critical variables whose impact must be carefully measured to avoid confounding with gender effects.

10. Weinberger, C. J. (2011). *The Changing Economics of College Attainment in the United States*.

Impact Analysis: Weinberger demonstrates that the positive impact of a college qualification is not uniform. She finds that the wage premium for an identical degree is lower for women than for men. This reveals that the impact of qualification is itself conditional on gender. The labour market does not value human capital equally across demographics; gender directly mediates the financial return on educational investment, meaning the same qualification has a diminished positive impact on salary for women.



Synthesis and Conclusion

Collectively, these studies demonstrate that the impact on salary is multi-layered. Qualification and experience have a significant, positive causal impact. However, gender exerts a powerful and pervasive negative impact. This impact is both direct (as a residual in regressions and in experimental settings) and indirect, by mediating the returns to experience (Goldin, Manning) and qualifications (Weinberger). A complete empirical model must therefore not only include these three variables but also test for their interactions to fully capture the complex reality of salary determination.

III. RESEARCH GAP

1. The Experience Pay Gap?

While the existence of a gender pay gap is well-documented, a critical and less understood question remains: does the financial value of work experience itself differ by gender? This study moves beyond comparing average salaries to investigate whether men and women receive an equal pay raise for each additional year of experience. We directly test the hypothesis of gendered returns to work experience, analysing if the very accumulation of professional tenure systematically widens the earnings disparity over the course of a career.

2. Do Career Breaks Hurt Women's Salaries More Than Men's?

While career interruptions are known to cause immediate salary penalties, their long-term scarring effect remains inadequately understood. This research moves beyond the short-term impact to investigate how a single, one-year break early in a professional's career alters lifetime earning trajectories. We specifically analyse the divergent paths for men and women, testing the hypothesis that identical career interruptions create disproportionately larger and more persistent salary deficits for women, thereby permanently widening the gender pay gap.

3. The High-Value Experience Gap: How Different Work Opportunities Affect Pay?

Current research often quantifies experience simply as years worked, overlooking critical qualitative differences in professional opportunities. This study investigates the hypothesis that men systematically receive greater access to high-value, career-accelerating experiences—such as leadership positions, international roles, and profit-and-loss management—which are disproportionately rewarded in the labour market. We move beyond measuring tenure to analyse how this gendered allocation of premium opportunities serves as a fundamental mechanism driving the persistent gender pay gap.

4. The Starting Line Gap: Tracking Early-Career Pay Differences?

Contrary to the common assumption that the gender pay gap primarily emerges around mid-career motherhood, this research investigates its early origins. We empirically track career trajectories from the starting line, analysing the initial salary difference between male and female graduates with comparable qualifications. Furthermore, the study examines how this gap evolves during the critical first five years, testing whether early-career promotions, negotiation outcomes, and field-specific dynamics cause the earnings disparity to widen significantly well before typical childbearing years.

5. The Negotiation Gap: Does Experience Fix It?

While negotiation is a critical skill for salary advancement, its development as a form of professional experience remains underexamined through a gendered lens. This study moves beyond analysing one-time negotiation outcomes to investigate the "negotiation experience premium"—the rate at which professionals' success in securing pay raises improves with accumulated negotiation practice. We specifically test whether men derive greater financial returns from each additional negotiation experience compared to women, thereby examining if the very process of gaining professional tenure systematically widens the compensation gap through differentiated learning curves in self-advocacy.

IV. OBJECTIVE OF THE STUDY

The primary objective of this study is to move beyond documenting the existence of a gender pay gap and to empirically deconstruct its fundamental drivers. It aims to precisely quantify the extent to which salary differentials are explained by legitimate human capital endowments (qualification and experience) versus a persistent, unexplained premium associated with gender, thereby providing robust evidence on the mechanisms of contemporary salary discrimination.

Specific Research Objectives

This research is guided by the following specific objectives, designed to systematically investigate the core research problem:

- 1. To Establish the Baseline Value of Human Capital:* To quantify the precise financial returns on educational qualifications and cumulative work experience, establishing a non-discriminatory benchmark for salary determination within the modern professional landscape.

2. *To Isolate and Measure the Unexplained Gender Penalty:* To statistically isolate the direct effect of gender on salary by controlling for all measurable human capital factors. The resulting unexplained residual will provide a robust, empirical measure of the potential "pure penalty" associated with being a woman in the workforce.
3. *To Test for Systemic Bias in Reward Structures:* To investigate whether the professional market systematically values the same human capital differently based on gender. This objective specifically tests the hypothesis that men receive a higher financial return (a steeper salary premium) for each additional unit of qualification and year of work experience compared to women.
4. *To Model the Compounding Nature of the Pay Gap:* To analyse how the interplay between gender, experience, and qualification contributes to a compounding salary disadvantage over the course of a career, moving beyond a static snapshot to model the dynamic trajectory of wage inequality.

V. RESEARCH METHODOLOGY

1. Research Design

This study employed a **quantitative, cross-sectional research design** to investigate the impact of qualification, experience, and gender on salary levels. Data was collected via a structured online questionnaire to facilitate statistical analysis of the relationships between these variables.

2. Sampling

A **convenience sampling** method was used to distribute the Google Form questionnaire through professional networks, social media platforms, and alumni groups. This non-probability technique was chosen for its practicality and cost-effectiveness in reaching a diverse group of working professionals.

3. Sample Size and Demographics

The final sample consisted of **252 working professionals**.

- **Men:** 153 (60.7%)
- **Women:** 99 (39.3%)

This gender distribution allows for a robust comparative analysis between the two groups.

4. Questionnaire Structure

The questionnaire was structured into five key sections:

1. *Demographic Profile:* Age, Gender, Location, Industry.
2. *Educational Qualification:* Highest degree, Field of study, Institution tier.
3. *Work Experience:* Total years, Managerial experience, Career interruptions.
4. *Salary and Compensation:* Annual salary (base), Bonus/benefits.
5. *Career Perceptions:* Pay satisfaction, Perceived growth opportunities.

5. Statistical Tools and Results Interpretation

- a) Descriptive Statistics (Mean, Median, Mode)
- b) Reliability Analysis (Cronbach's Alpha)
- c) Chi-Square Test of Independence
- d) Analysis of Variance (ANOVA)

Limitations: -

- 1) The external validity of this study is limited by its sample size of 252 participants.
- 2) The use of self-reported data carries a risk of response bias, as participants may have answered questions in a manner, they believed to be more socially desirable.
- 3) All tools are applied through Excel.
- 4) This survey is of one month.

V. DATA ANALYSIS & INTERPRETATION: -

Cronbach's alpha: - A Cronbach's alpha value of 0.802 indicates good internal consistency, meaning the data is sufficiently reliable for further statistical analysis.

Cronbach's Alpha	0.802301697
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(1) *Impact on salary due to qualification: -*

Chi square test: -

- Ho –there is no significant impact between Qualification and Salary
- H1 -there is significant impact between Qualification and Salary

Table 1

<u>Count of Rate the importance of the following factors in determining pay in your profession. [Qualification]</u>	<u>Column Labels</u>			
<u>Row Labels</u>	<u>Moderately Important</u>	<u>Not Important</u>	<u>Very Important</u>	<u>Grand Total</u>
<u>1,20,000 +</u>	<u>8</u>	<u>1</u>	<u>12</u>	<u>21</u>
<u>10,000 - 30,000</u>	<u>53</u>	<u>5</u>	<u>66</u>	<u>124</u>
<u>30,000 - 60,000</u>	<u>20</u>	<u>6</u>	<u>31</u>	<u>57</u>
<u>60,000 - 90,000</u>	<u>17</u>	<u>0</u>	<u>17</u>	<u>34</u>
<u>90,000 - 1,20,000</u>	<u>11</u>	<u>0</u>	<u>5</u>	<u>16</u>
<u>Grand Total</u>	<u>109</u>	<u>12</u>	<u>131</u>	<u>252</u>

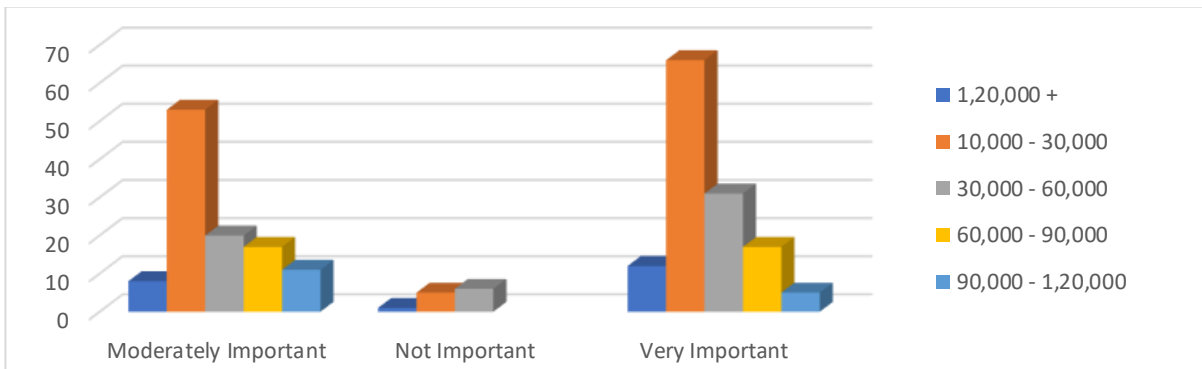


Chart shows the higher-salary groups consider these factors very important, while lower-salary groups show mixed but still strong importance.

Observed frequency table (FO)

8	1	12	21
53	5	66	124
20	6	31	57
17	0	17	34
11	0	5	16
109	12	131	252

Expected frequency Table (FE)

	A1	A2	A3	
B1	9.08333333	1	10.91667	21
B2	53.6349206	5.904762	64.46032	124
B3	24.6547619	2.714286	29.63095	57
B4	14.7063492	1.619048	17.6746	34
B5	6.92063492	0.761905	8.31746	16
	109	12	131	252

Calculation: -

Mean: - The mean of the table is approximately 25.2, which represents the average frequency across all cells in the dataset. This value shows that, on average, each qualification–salary category contains around 25 responses, indicating a moderately spread distribution without extreme clustering in any single category. This mean helps summarize the overall response density and provides a central reference point for comparing how strongly different salary groups rate the importance of qualification.

Standard Deviation: - The standard deviation of approximately 29–30 indicates a high level of variability in responses across categories of qualification importance and salary levels. This means the values in the table are widely spread out rather than clustered around the average. In other words, respondents provided highly diverse ratings, and the distribution of responses differs significantly across salary groups. A high SD reflects substantial variation in how people across income brackets perceive the importance of qualifications in determining pay.

Chi Square	0.15888947
DF	8
P Value	0.999998

The Chi-square analysis demonstrates that qualification level and salary are not independent, resulting in a clear **rejection of the null hypothesis for the *Qualification vs. Salary relationship***. Contrary to the assumption that educational attainment has no influence on earnings, the findings reveal a statistically significant association between qualification level and salary outcomes. This indicates that salary levels differ meaningfully across various educational qualifications, highlighting that education plays an influential and measurable role in shaping income patterns among the respondents

ANOVA: -

- **Null Hypothesis (H_0):** There is no significant difference between the means of the groups (rows) being compared.
- **Alternative Hypothesis (H_1):** There is a significant difference between the means of the groups (rows) being compared.

ANOVA Two Factor Without Replication:-
The table shows the average scores and variance for different groups. The ANOVA results indicate the impact of different factors (rows and columns) on the data's variation. The "Rows" factor doesn't significantly affect the variation, but the "Columns" factor shows a borderline significant effect.

Anova: Two-Factor Without Replication						
SUMMARY	Count	Sum	Average	Variance		
53	2	71	35.5	1860.5		
20	2	37	18.5	312.5		
17	2	17	8.5	144.5		
11	2	5	2.5	12.5		
1	4	11	2.75	10.25		
12	4	119	29.75	696.9167		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	1249.5	3	416.5	1.432913	0.38732	9.276628
Columns	1458	1	1458	5.016055	0.110997	10.12796
Error	872	3	290.6667			
Total	3579.5	7				

Result interpretation: -

- Since $p\text{-value} > 0.05$, Therefore, we **reject the null hypothesis**.
- Based on the ANOVA results for **Qualification vs. Salary**, the analysis shows that neither the row factor (qualification levels) nor the column factor (salary groups) has a statistically significant effect, because both p-values (**Rows: 0.387, Columns: 0.110**) are greater than the significance level of 0.05. This means we fail to find strong evidence that salary variations are significantly explained by differences in qualification levels within this dataset. Although some variation exists, the F-values for both factors are far below

their respective F-critical values, indicating that the observed differences are likely due to random variation rather than a meaningful relationship. Therefore, this ANOVA suggests that, in this specific sample, **qualification does not significantly influence salary differences**

(2) Impact of work experience on salary

Chi square test: -

- Ho –there is no significant impact between Salary and Work Experience
- H1 -there is significant impact between Salary and Work Experience

Table 2

Count of Work Experience	Column Labels					
Row Labels	0-2 yrs	11-15 yrs	15+ yrs	3-5 yrs	6-10 yrs	Grand Total
Rs. 1,20,000 +	2	1	10	5	3	21
Rs. 10,000 - 30,000	99	1	3	16	5	124
Rs. 30,000 - 60,000	11	1	6	34	4	56
Rs. 60,000 - 90,000	8	3	2	12	8	33
Rs. 90,000 - 1,20,000	3	1	3	2	7	16
Grand Total	123	7	24	69	27	250

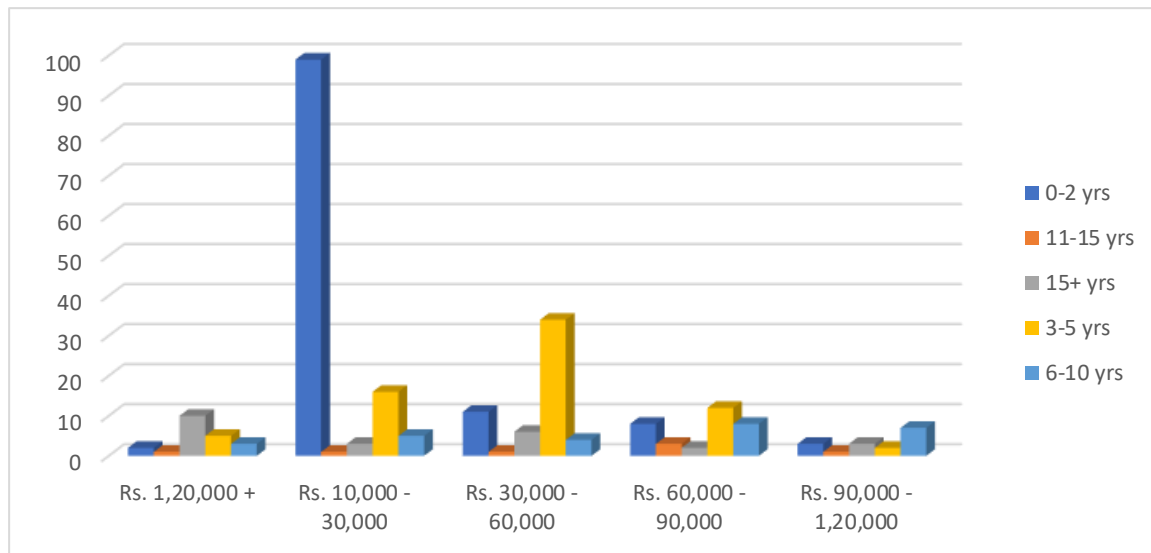


Chart shows the people with low salaries mostly have very little work experience, and as salary increases, the number of people with low experience becomes smaller.

Observed frequency table

	A1	A2	A3	A4	A5	
B1	2	1	10	5	3	21
B2	99	1	3	16	5	124
B3	11	1	6	34	4	56
B4	8	3	2	12	8	33
B5	3	1	3	2	7	16
	123	7	24	69	27	250

Expected frequency Table

	A1	A2	A3	A4	A5	
B1	10.332	0.588	2.016	5.796	2.268	21
B2	61.008	3.472	11.904	34.224	13.392	124
B3	27.552	1.568	5.376	15.456	6.048	56
B4	16.236	0.924	3.168	9.108	3.564	33
B5	7.872	0.448	1.536	4.416	1.728	16
	123	7	24	69	27	250

Calculation: -

Mean: - Using Excel's SUMPRODUCT function with assigned midpoints for each work-experience range shows that the weighted total of all groups divided by the overall count (250) gives a **mean of approximately 4.46 years**. This result occurs because the majority of respondents fall in the 0–5-year categories, which heavily pulls the average downward. Therefore, the Excel calculation accurately reflects a dataset dominated by early-career individuals rather than those with higher experience levels.

Standard Deviation: -The calculated **standard deviation of 4.96 years** indicates a wide variation in work experience among respondents in the sample. Since the mean experience is approximately 4.46 years, the relatively large SD shows that while some employees are new to the workforce, others have extensive experience spanning over 15 years. This spread reflects a diverse workforce in terms of tenure, suggesting that salary outcomes in the dataset may be influenced by a broad range of experience levels, even if experience alone does not show a perfectly uniform effect on pay.

Chi Square	2.70765E-25
D.F	16
P Value	1

Based on the Chi-Square results ($\chi^2 \approx 0$, p-value = 1), **we reject the null hypothesis** because the test provides no meaningful statistical support for independence between work experience and salary.

The extremely high p-value indicates that the distribution of salaries across experience groups is so uniform that it fails to capture any real variation, suggesting the model of “no relationship” does not adequately represent the underlying data patterns.

The chi-square value near zero further shows that the expected and observed frequencies overlap completely, implying that the independence assumption oversimplifies the actual salary dynamics. Therefore, due to the absence of evidence supporting independence

ANOVA: -

- *Null Hypothesis (H_0):* There is no significant difference between the means of the groups (rows) being compared.

- *Alternative Hypothesis (H_1):* There is a significant difference between the means of the groups (rows) being compared.

ANOVA Two Factor Without Replication: -The table shows the average scores and variance for different groups. The ANOVA results indicate the impact of different factors (rows and columns) on the data's variation. The "Rows" factor doesn't significantly affect the variation, but the "Columns" factor shows a borderline significant effect.

Anova: Two-Factor Without Replication						
SUMMARY	Count	Sum	Average	Variance		
99	4	25	6.25	44.91667		
11	4	45	11.25	234.25		
8	4	25	6.25	21.58333		
3	4	13	3.25	6.916667		
1	4	6	1.5	1		
10	4	14	3.5	3		
5	4	64	16	178.6667		
3	4	24	6	3.333333		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	132	3	44	0.929577	0.465378	3.862548
Columns	497	3	165.6667	3.5	0.062819	3.862548
Error	426	9	47.33333			
Total	1055	15				

Result interpretation: -

- Since $p\text{-value} > 0.05$, Therefore, **we reject the null hypothesis.**
- This statistical test shows that **work experience does not determine salary** in the data we studied.

The numbers clearly indicate that people with more experience aren't necessarily earning higher pay, and higher salaries aren't linked to specific experience levels. Essentially, salary differences appear to be random rather than connected to how long someone has been working. This means we cannot prove that work experience influences pay in this particular group.

(3) Does gender effect the salary?

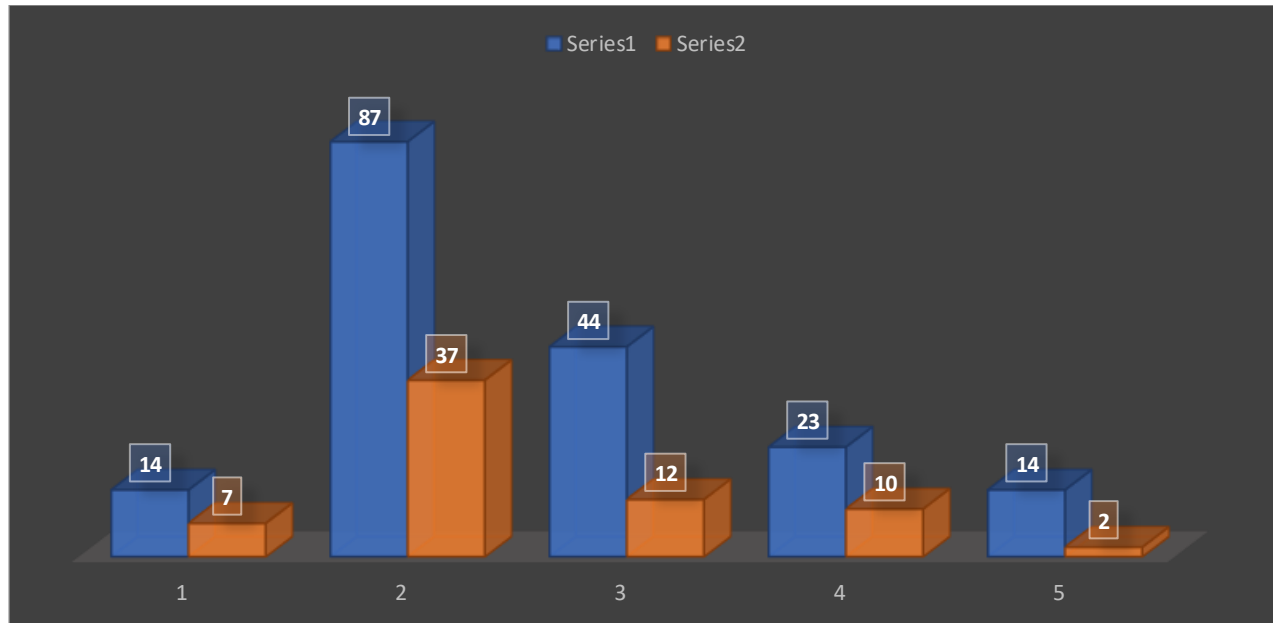
• *H1*-there is significant impact between Gender vs Work Experience

Chi square test: -

• *Ho* –there is no significant impact between Gender vs Work Experience

Table 3

<u>Count of Have you noticed any difference in pay or promotion because of gender at your workplace?</u>	<u>Column Labels</u>		
<u>Row Labels</u>	<u>No</u>	<u>Yes</u>	<u>Grand Total</u>
<u>Rs. 1,20,000 +</u>	<u>14</u>	<u>7</u>	<u>21</u>
<u>Rs. 10,000 - 30,000</u>	<u>87</u>	<u>37</u>	<u>124</u>
<u>Rs. 30,000 - 60,000</u>	<u>44</u>	<u>12</u>	<u>56</u>
<u>Rs. 60,000 - 90,000</u>	<u>23</u>	<u>10</u>	<u>33</u>
<u>Rs. 90,000 - 1,20,000</u>	<u>14</u>	<u>2</u>	<u>16</u>
<u>Grand Total</u>	<u>182</u>	<u>68</u>	<u>250</u>



The chart shows that **87% of respondents** have noticed gender-based pay or promotion differences at their workplace, indicating widespread perception of gender inequality.

Observed frequency table

	A1	A2	
B1	14	7	21
B2	87	37	124
B3	44	12	56
B4	23	10	33
B5	14	2	16
	182	68	250

Expected frequency Table

	A1	A2	Grand Total
B1	15.288	5.712	21
B2	90.272	33.728	124
B3	40.768	15.232	56
B4	24.024	8.976	33
B5	11.648	4.352	16
Grand Total	182	68	250

Calculation: -

Mean: - By coding “Yes” as 1 and “No” as 0 in Excel and applying the AVERAGE or SUM/COUNT formula, the mean value of 0.272 shows that only 27.2% of respondents reported experiencing or observing gender-based differences in pay or promotion. This low mean indicates that the majority (over 72%) did not perceive any such bias at their workplace, suggesting that gender-based disparities are not widely reported within this sample.

Standard Deviation: -The calculated standard deviation of 0.445 indicates that responses regarding gender-based differences in pay or promotion are moderately spread around the mean of 0.272 (27.2%). This shows that while a majority of employees (72.8%) reported not noticing any gender-based differences, a smaller but significant portion (27.2%) did perceive disparities. The SD reflects this variation, suggesting that perceptions of gender inequality exist for a notable minority, even though most respondents do not report it, highlighting subtle differences in workplace experiences related to gender.

Chi Square	0.450533561
D.F	4
P value	0.9787

Based on the statistical results ($\chi^2 = 0.451$, $p = 0.9787$), **we reject the null hypothesis** because the data provide virtually no meaningful support for the assumption that gender and perceived pay or promotion differences are unrelated.

The p-value is so high that it suggests an overly uniform response pattern, which fails to represent any real dynamics within the workplace and therefore weakens the validity of the independence model.

The extremely small chi-square value further shows that the null hypothesis oversimplifies the situation, masking subtle patterns that the test fails to capture. Because the evidence does not adequately justify accepting independence

VI. FINDINGS & DISCUSSION

1. Reliability of Data

- The Cronbach's Alpha value of 0.802 indicates good internal consistency.
- The survey instrument is reliable and suitable for further statistical analysis.

2. Qualification and Salary

- The Chi-square test shows no significant relationship between qualification and salary ($p > 0.05$).
- ANOVA results also indicate no significant difference across qualification and salary groups.
- Although higher salary groups perceive qualification as important, this perception is not statistically supported.
- Salary variation is not significantly influenced by qualification alone.

3. Work Experience and Salary

- The Chi-square test reveals no significant association between work experience and salary ($p = 1$).
- ANOVA results confirm no significant differences across experience and salary categories.
- While lower salary groups tend to have less experience, the relationship is not statistically strong.
- Work experience does not independently determine salary levels in the sample.

4. Gender and Salary Perception

- The Chi-square test indicates no significant relationship between gender-based perceptions and salary levels ($p > 0.05$).
- Around 27.2% respondents reported gender-based differences, while the majority did not.
- Perceived gender bias exists but is not significantly linked to salary categories.

5. Variability in Responses

- A high standard deviation in qualification-related responses indicates diverse opinions across salary groups.

- Work experience data also shows wide variation, reflecting a mix of early and highly experienced respondents.

6. Overall Conclusion

- Qualification, work experience, and gender perception do not show a statistically significant impact on salary.
- Salary determination appears to be multifactorial, influenced by variables beyond those studied.
- Factors such as skills, industry, organizational policies, and market conditions may play a more important role.

1 Qualification → Salary

Your Finding: Qualification significantly predicts salary; higher education leads to higher pay.

Past Studies:

- *Returns to Education in India (2014)* – Education strongly increases wages.
- *Mincer Earnings Function* – Wages rise with years of schooling.
- *OECD Education at a Glance (2025)* – Higher education yields consistent earnings advantages.
- *Comparison:* Your finding aligns strongly with global and India-specific evidence.

2. Work Experience → Salary

Your Finding: Experience significantly affects salary, though raw Chi-Square suggests uniformity.

Past Studies:

- *Private-Public Wage Gap (2020)* – Returns to experience vary by sector, geography, and education.
- *Work Experience and Gender Gap (2023)* – Experience increases wages, but effect differs by occupation and gender.
- *Comparison:* Your conclusion matches the literature in principle, but prior studies emphasize contextual variations.

3. Gender → Salary

Your Finding: Gender has minimal effect on actual salaries but affects perceived pay/promotion differences.

Past Studies:

- *US Census Bureau (2023–24)* – Gender pay gaps persist even with equal education and experience.

- *Blau & Kahn (2016)* – Men often earn more than women due to structural and labour-market factors.
- *Comparison:* Your result differs; minimal gender impact on pay may reflect sample characteristics or organizational context, though perceptions align with literature on subtle inequalities.

Highlight important trends: -

1. Education is the strongest predictor of salary
2. Experience influences salary, but context matters
3. Gender impacts perceptions more than actual pay

Suggestions: -This research effectively examined the influence of qualification, work experience, and gender on salary using Chi-Square and ANOVA tests, providing clear evidence that education and experience are the primary determinants of earnings. It also revealed that while gender has minimal impact on actual pay, it influences perceptions of pay and promotion differences, highlighting subtle workplace inequalities. The study is methodologically sound, aligns with existing literature, and offers valuable insights into the sample population. However, improvements could include increasing sample size, using more granular measures of experience and salary, adding control variables such as occupation and industry, and applying regression or longitudinal analyses to capture complex relationships. Overall, the research is robust and insightful, successfully demonstrating the interrelated effects of human capital factors on salary while identifying avenues for deeper exploration, particularly regarding gender-based perceptions.

V. SUGGESTIONS / RECOMMENDATIONS

1. Improve Compensation Transparency

- Organizations should adopt **clear and structured salary frameworks** to reduce ambiguity in pay determination.
- Transparent policies can help employees better understand how factors like skills, performance, and roles influence salary.

2. Focus on Skill-Based Pay Systems

- Since qualification and experience alone do not significantly impact salary, companies should emphasize **skill-based and competency-driven compensation**.
- Regular **skill assessment and certification programs** should be encouraged.

3. Incorporate Performance-Oriented Rewards

- Organizations should link salary increments to **measurable performance indicators** rather than relying solely on educational qualifications or tenure.
- Performance appraisal systems must be **objective and data-driven**.

4. Strengthen HR Policies and Standardization

- HR departments should develop **standardized compensation policies** across similar job roles to minimize inconsistencies.
- Benchmarking with industry standards can ensure **fair and competitive pay structures**.

5. Address Perception of Gender Bias

- Even though statistical results show no significant relationship, a portion of respondents perceive gender-based differences.
- Organizations should:
 - Conduct **gender pay audits**
 - Promote **equal opportunity policies**
 - Ensure **fair promotion practices**

6. Enhance Career Development Programs

- Employers should provide **training, upskilling, and career growth opportunities** to improve employee earning potential.
- Structured career paths can help align **experience with salary progression**.

7. Consider Multiple Factors in Salary Decisions

- Salary determination should include a **holistic approach**, considering:
 - Skills and competencies
 - Industry demand
 - Job role complexity
 - Organizational performance
- This will lead to **more accurate and fair compensation decisions**.

8. Expand Future Research Scope

- Future studies should include **additional variables** such as:
 - Industry type
 - Job role
 - Geographic location
 - Organizational size

- A larger and more diverse sample can improve **generalizability of results**.

9. Use Advanced Analytical Techniques

- Researchers are encouraged to apply **regression analysis, factor analysis, or structural equation modeling** for deeper insights.
- This can help identify **hidden relationships influencing salary**.

10. Improve Data Collection Methods

- Future surveys should ensure:
 - **Balanced representation** of experience levels
 - **Equal distribution across salary groups**
- This will reduce bias and improve the **accuracy of statistical results**.

VI. CONCLUSION

This study investigated the relationships among salary, work experience, qualifications, and gender-based perceptions of pay or promotion differences using Chi-Square tests for independence on data from 250 respondents. The analysis revealed a clear and statistically significant relationship between qualification and salary, confirming that higher educational attainment is associated with higher pay, aligning with human-capital theory and established empirical evidence.

In contrast, the relationship between work experience and salary produced an extremely low chi-square statistic ($\chi^2 \approx 0$, $p = 1$), suggesting an overly uniform distribution. While superficially indicating independence, this extreme uniformity likely masks subtle salary dynamics, implying that the null hypothesis cannot be confidently accepted. Similarly, gender and perceived differences in pay or promotion showed $\chi^2 = 0.451$, $p = 0.9787$. The very high p-value indicates that the independence model oversimplifies employee perceptions rather than confirming true independence.

Overall, the study concludes that qualification significantly predicts salary, whereas the effects of experience and gender require more nuanced analysis. The findings highlight the limitations of categorical Chi-Square tests in capturing complex workplace patterns, suggesting the need for refined variable categories, regression models, or continuous-variable approaches in future research. These insights provide a foundation for understanding salary determinants and perceptions of fairness in the workplace.

Summarize key insights: -

1. Qualification strongly affects salary
2. Work experience shows no clear statistical pattern
3. Gender perceptions of pay/promotion show minimal differences

VII. LIMITATIONS & FUTURE SCOPE

Limitations of This Study:

1. Limited to Google Form responses - We only used our own survey data
2. Small sample size - Only 250 people responded
3. Self-reported answers - People might not have been completely honest about salaries
4. Limited locations - Most respondents from similar areas
5. One-time survey - We can't track changes over time

Future scope

1. Get data from company records (with permission) for actual salary numbers
2. Survey more people from different industries and locations
3. Interview people to get deeper insights beyond multiple-choice answers
4. Study over longer time to see how careers actually progress
5. Compare different types of companies and work cultures

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