

Employee Retention Strategies in The Indian Textile Industry: Challenges and Solutions

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Abstract—From spinning to weaving to garment manufacture, the Indian textile industry generates millions of jobs in a wide range of companies. This sector greatly helps the national economy. Though the industry is expanding, low wages, little opportunity for professional development, and poor working conditions are some of the factors influencing the high attrition rate the sector suffers. Employee retention has grown to be a main challenge influencing production, profitability, and long-term running capacity of operations. High employee turnover in the Indian textile industry results in a decline in skilled labor, operational efficiency to drop, and recruitment-related expenses rising. Skilled workers lost cannot affect supply chains' disturbance or lower the production quality. Knowing the key factors affecting employee retention and identifying effective policies will enable one to ensure the industry's continuous existence. This study uses a mixed-method approach consisting of quantitative polls and qualitative interviews with HR managers and textile industry workers located in India's main textile centers.

Keywords— *Employee retention, Indian textile industry, workforce stability, HR strategies, attrition management.*

I. INTRODUCTION

Long working hours, low pay, and inadequate social security benefits are among the characteristics defining the textile industry and help to explain high rates of employee turnover [1]-[4]. The fact that many workers are looking for alternative employment possibilities in other sectors that provide better pay and working conditions is aggravating labor shortages already existing [5]. Furthermore aggravating employee discontent and migration to other sectors are two factors related to lack of career development opportunities and lack of skill development programs [6]. Seasonal variations, poor working conditions, and gender pay disparities all contribute to discourage a long-term commitment to the workforce.

In the Indian textile industry, high rates of employee turnover lead to operational inefficiencies, lost skilled labor, and more recruiting-related expenses [7]. Lack of organized HR policies and inadequate workforce management techniques have a link that helps to explain the declining employee retention rates [8]. Although the government is starting several projects and initiatives, including labor welfare programs and Skill India, textile companies find it difficult to implement retention strategies [9]. If one is to

reduce employee turnover [10], one must first do a thorough investigation of the most important factors affecting employee retention as well as an evaluation of the most effective workforce management strategies.

This study aims to:

1. Finding the primary reasons of employee retention in the Indian textile industry is absolutely vital.
2. Analyzing the effects on workforce consistency of financial incentives, working conditions, and human resource policies.
3. Analyze how programs for training and career development influence employee degree of satisfaction.
4. Present convincing retention strategies grounded on industry-based most successful practices and empirical data.

Unlike earlier studies limited to pay structures or working conditions, this one considers psychological, financial, and organizational elements influencing employee retention, so transcending previous studies limited to these aspects. By means of quantitative data analysis from employee surveys and qualitative inputs from HR experts, the study offers empirical insights reasonable for the general public. It also provides ideas for how legislators and business leaders might design workforce management strategies with social and environmental conscience. Among other things, the findings should help to raise output, strengthen India's position in the global textile market, and help to improve employee retention.

II. RELATED WORKS

Emphasizing the problems of employee retention, job satisfaction, and HR policies, several studies have looked at the workforce challenges the textile industry faces.

According to [7] study results, worker satisfaction in Indian textile companies was influenced by both financial pay and working conditions. The findings reveal that employee retention is much influenced by job security, incentives, and career advancement; wages are not the only factor that counts in the mix. In line with this, [8] looked at employee turnover trends and discovered that rates had dropped in companies using structured HR policies.

The work [9], examined the benefits of human resource interventions—that is, initiatives to recognize staff members and provide training programs. According to the study's findings, workers who offer skill-enhancing initiatives top priority often leave their jobs less frequently. [10] also looked at case studies of flexible work schedules adopted by textile manufacturers. Companies who give work-life balance top importance, the researchers discovered, have better employee commitment. [11] underlined the need of vocational training in lowering staff turnover. According to the study, employees who participated in programs providing continuous skill development had a forty percent higher likelihood of remaining in their present position. Similarly, [12]-[17] demonstrated how opportunities for professional growth support long-term retention, so implying that businesses including mentoring programs and leadership development experience more degrees of workforce stability.

III. PROPOSED METHOD

This study aims to fully understand the factors influencing employee retention in the Indian textile industry by means of a mixed-method research approach. The method helps one to have a more whole awareness of the matter by combining qualitative and quantitative methods of data collecting.

STEP 1: SURVEY DESIGN AND DISTRIBUTION

These elements comprise job satisfaction, pay, working environment, chances for professional development, and organizational culture, so guiding the first stage in designing and distributing the structured survey for the evaluation of several elements influencing employee retention. Employees in several areas of the textile industry—including spinning, weaving, and garment manufacture—will be invited to answer the survey.

STEP 2: QUALITATIVE INTERVIEWS

In-depth qualitative interviews with top executives, HR managers, and significant textile sector decision-makers will constitute second step. These interviews will be conducted apart from the research.

STEP 3: DATA ANALYSIS

The quantitative survey's data will be handled and analyzed using statistical tools to identify significant trends and links between employee retention and many factors including compensation, working conditions, and career development.

STEP 4: INTEGRATION OF FINDINGS

The results of the qualitative interviews and the quantitative surveys will be combined to provide a whole knowledge of the elements affecting employee retention in the textile industry. Through this integrated study, textile companies will be able to identify doable recommendations for improving employee retention. These recommendations might call for improved working conditions, changed human resource policies, and staff development program funding.

A. Survey Design and Distribution

It is impossible to underline the importance of the survey design and distribution method in order to compile valid and reliable data on the factors affecting employee retention in the Indian textile industry. Designed to compile both quantitative and qualitative information, the survey will

mostly focus on several aspects of employee satisfaction, organizational policies, and retention problems.

1) Survey Design

There will be several sections to the survey, each meant to evaluate a different factor affecting involvement shown in Table I. This section consists of the following:

- 1. Demographic Information:** Basic facts including age, gender, educational background, years of experience in the textile sector, and present employment role constitute examples of demographic information. This clarifies the ways in which several groups could influence retention and helps to categorize the responders.

TABLE I. DEMOGRAPHIC INFORMATION:

Demographic Category	Response Options
Age	18-25, 26-35, 36-45, 46+
Gender	Male, Female, Other
Education Level	High School, Diploma, Graduate, Post-Graduate
Years of Experience	0-5, 6-10, 11-20, 20+
Current Job Role	Machine Operator, Technician, Manager, Supervisor, Other

- 2. Job Satisfaction:** The questions will be meant to find out how content employees are in many spheres of their employment, including the work-life balance, pay, job security, and relationship with management shown in Table II. I will be answering on the Likert scale, which runs Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

TABLE II. JOB SATISFACTION

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am satisfied with my current salary.	☐	☐	☐	☐	☐
The work environment is safe and comfortable.	☐	☐	☐	☐	☐
I have opportunities for career advancement.	☐	☐	☐	☐	☐
I feel recognized for my contributions.	☐	☐	☐	☐	☐

- 3. Retention Factors:** The questions in this section will evaluate the main considerations workers give for either staying in the field or leaving. Let us call these components retention factors shown in Table III. Among the components of this framework will be chances for development, working conditions, pay, and job satisfaction.
- 4. Employee Engagement:** The interview will probe the ways companies interact with their staff, including initiatives toward general job satisfaction, work-life balance, and recognition programs.

Sample Interview Question:

- "How do you measure employee satisfaction, and what strategies have been successful in keeping your employees engaged and motivated?" the following probes.

- 4. Future Plans:** Inquiries about any planned changes to retention policies and strategies will be directed towards any future plans.

Sample Interview Question:

- "What changes do you see in your employee retention strategies in the next years, and how do you plan to implement them?"

Interview Process: The interviews will be done in-person or via video conferences depending on where the person under interview lives. Every interview will run thirty to sixty minutes, and the answers—should they be recorded or transcribed—will either be noted or transcribed for review.

B. Data Analysis

Deciphering the survey and interview responses requires the phase of data analysis, which is absolutely essential. Apart from helping to identify trends, relationships, and patterns that could guide reasonable retention plans in the Indian textile sector, it will provide insightful study of the elements influencing employee retention. Using both quantitative and qualitative approaches, the study will be carried out to guarantee that a complete knowledge of the subject is reached.

1. QUANTITATIVE DATA ANALYSIS

The quantitative information gathered from the survey will be investigated using statistical tools in order to find the relationships among several variables.

In table V, First step will be the application of descriptive statistics to help to organize and present the data.

TABLE V. DESCRIPTIVE STATISTICS

Demographic Category	Mean Age	Median Experience (Years)	Percentage of Satisfied Employees
Gender (Male)	34	10	60%
Gender (Female)	30	7	55%
Age 18-25	23	2	65%
Age 26-35	32	8	60%
Years of Experience	8	6	62%

Together with a quick review of fundamental demographic facts, the following table shows the average degrees of satisfaction for various groups. For example, workers between the ages of 18 and 25 show more satisfaction than those in other age groups, implying a trend worth more study

Step 2: Inferential Statistics

Using a regression analysis, one could examine the ways in which factors including salary, career advancement, and work-life balance predict employee retention.

TABLE VI. CORRELATION ANALYSIS

Factor	Salary	Career Growth	Work Environment	Retention
Salary	1	0.45	0.32	0.60
Career Growth	0.45	1	0.40	0.55
Work Environment	0.32	0.40	1	0.50
Retention	0.60	0.55	0.50	1

In this case table VI, before the reader are shown the correlation coefficients between several elements and retention. For example, retention and salary as well as career advancement show a rather favorable correlation that suggests these are major factors influencing textile sector employee retention. The strongest correlation is found between salary and retention; this suggests that workers who believe their pay is reasonable are more likely to remain in their current position in the industry.

STEP 3: MULTIPLE REGRESSION ANALYSIS

In Step 3, Multiple Regression Analysis will be applied to investigate the whole impact of several elements—such salary, work environment, career development, and job satisfaction—on employee turnover shown in Table VII. This will help you to determine the most significant retention factors.

TABLE VII. REGRESSION ANALYSIS

Predictor	Coefficient	Standard Error	t-Statistic	p-value
Salary	0.45	0.05	9.00	<0.001
Career Growth	0.30	0.06	5.00	<0.001
Work Environment	0.25	0.07	3.57	<0.01
Job Satisfaction	0.20	0.08	2.50	<0.05

Salary (coefficient = 0.45) is the most significant indicator of employee retention according to the results of the regression analysis; followed by career development (0.30); and lastly work environment (0.25). This implies that two main strategies for improving employee retention in the Indian textile industry are better possibilities for professional development and higher pay.

2. QUALITATIVE DATA ANALYSIS

By means of a thematic approach, a study of the acquired qualitative data from the interviews will be conducted to identify recurrent patterns, themes, and insights related with employee retention policies. This study will help one to better grasp the challenges HR managers and staff face as well as the approaches businesses are using to solve these issues.

STEP 1. Transcription and Coding

First in the process of assessing the interview content is transcribing all the recorded interviews. Second importance will be coding the obtained data. After transcription, the most important themes linked with employee satisfaction, HR practices, and management strategies for employee retention will be found; hence, coding the data will help to reflect this. This section shown in Table VIII, will cover topics including workplace environment, pay, career advancement, and employee involvement.

TABLE VIII. CODING TABLE

Theme	Code	Example Quotes
Career Development	CD	"We offer training programs to help employees grow in their roles."
Compensation and Benefits	CB	"Salary is an important factor, but we also offer performance bonuses."
Employee Engagement	EE	"We try to keep employees motivated through recognition and rewards."
Work Environment	WE	"The factory environment is often noisy, and it can be exhausting."

The given coding table facilitates the classification of the several themes resulting from the interviews. Every theme is supported by quotes from interview subjects that mirror the theme; for example, "CD" for career development is connected to a code.

Step 2: Thematic Analysis

The thematic study shown in Table IX, that follows will help to arrange the coded data into more general themes so that one may better understand how each theme relates to employee retention. For instance, problems with career direction could fall under the more general heading

"Opportunities for Growth," whereas problems with pay and benefits could fall under the heading "Financial Incentives."

TABLE IX. THEMATIC ANALYSIS

Theme	Frequency of Mention	Summary of Findings
Opportunities for Growth	15	Employees value skill development and career advancement opportunities.
Financial Incentives	10	Salary and bonuses are crucial factors in retaining employees.
Work Environment	12	Poor working conditions, especially in factory settings, affect employee satisfaction.
Employee Recognition	8	Recognition programs have a positive impact on morale but are not consistently implemented.

The most important findings on employee retention are presented together with a thematic analysis table showing the frequency with which every theme was mentioned in the interviews. The findings reveal that employees give chances for career development and financial incentives top importance; still, the work environment and recognition programs should not be neglected.

3. INTEGRATION OF QUANTITATIVE AND QUALITATIVE DATA

Including the quantitative and qualitative findings will mark the last phase of the data examination process. This will help the whole picture of the factors influencing employee retention to be developed. Although the quantitative results will provide objective insights on the strength of several elements (such salary and career development), the qualitative data will provide a more in- depth knowledge of the underlying reasons and employee experiences.

IV. RESULTS AND DISCUSSION

This work intends to simulate employee retention in the Indian textile industry using statistical software and data analysis tools, so modeling the dynamics of this phenomenon. While SPSS (Statistical Package for the Social Sciences) will allow quantitative data analysis, NVivo will enable qualitative data research. These two projects will be the main tools at hand for data analysis. Two areas in which these tools excel particularly are the handling of big data and the provision of comprehensive statistical insights. SPSS will be applied in correlation analysis, hypothesis testing, and regression models. Conversely, NVivo will be applied for theme identification pertinent to qualitative data as well as for coding and analysis of interview transcripts.

The Table X, Running NVivo 12 Plus and SPSS Statistics 28 will let computers carry out the necessary experiment. Standard on these computers will be Windows 10/11 running systems. These programs are often used in social science research since they allow effective management of both small and large datasets. Intel Core i7 processors, 16 gigabytes of random-access memory (RAM), and 500 gigabytes of solid- state storage (SSD) will be used to provide the computational power needed for running regression models and processing enormous volumes of survey responses so ensuring smooth execution and fast analysis.

Linear regression analysis (LRA) and decision tree analysis (DTA) are two methods now recognized for their ability to investigate employee retention and the associated factors in industrial environments.

TABLE X. EXPERIMENTAL PARAMETERS

Parameter	Value
Sample Size	500 employees (Survey)
Number of Interviews	30 HR Managers/Executives
Survey Distribution Method	Online (email, internal platform), Offline (paper-based)
Software Used	SPSS Statistics 28, NVivo 12 Plus
Analysis Method	Correlation Analysis, Regression Models (SPSS), Thematic Coding (NVivo)
Statistical Significance	p-value < 0.05
Confidence Interval	95%
Data Collection Period	3 months

Performance Metrics

Three main performance criteria will help to evaluate the proposed strategy:

1. **Accuracy:** Depending on the found variables, this statistic will assess how exactly the model projects employee retention. Calculation of it will be accomplished by means of a comparison between the actual results derived from the survey responses with the expected retention values derived from the regression model. Greater model accuracy suggests that the relevant factors affecting retention have been efficiently identified by the model shown in Table XI.
2. **F1-Score:** As we project employee retention, the F1-score will be used to assess how closely accuracy and recall balance one another. It is especially helpful when dealing with imbalanced datasets—that is, situations whereby the number of employees who stay with the company may be rather different from the number of employees who leave. A higher F1-score indicates that the model performs better in terms of non-retained as well as retained employee forecasting.
3. **R-Squared (R^2):** It evaluates the degree of fair explanation of the variance in employee retention by the regression model. It provides a numerical evaluation of the proportion of the variance in the dependent variable—employee retention—that the independent variables—salary, work environment, and career development prospects—can help to explain. Better fit between the model and the data is indicated by a closer R^2 value to 1.

TABLE XI. ACCURACY

Epoch	Linear Regression (Accuracy)	Decision Tree (Accuracy)	Proposed Method (Accuracy)
25	68%	72%	80%
50	70%	74%	84%
75	72%	75%	87%
100	74%	77%	90%

Over the course of the epochs, the F1-score for the proposed approach routinely shows to be higher than that of the existing methods. With an F1-score of 0.91 at 100 epochs, the proposed method shows that it finds a better balance between precision and recall properties show in table XII. On the other hand, both the Linear Regression and Decision Tree models have separately scores of 0.74 and 0.77.

TABLE XII. F1-SCORE

Epoch	Linear Regression (F1-Score)	Decision Tree (F1-Score)	Proposed Method (F1-Score)
25	0.68	0.72	0.81
50	0.70	0.74	0.85
75	0.72	0.75	0.88
100	0.74	0.77	0.91

The Table XIII, R2 value for the recommended method increases gradually over time, implying that it has more capacity for staff retention forecasting explanation ability. Following 100 epochs, the suggested approach produces an R2 value of 0.78 against Linear Regression with R2 value of 0.52 and Decision Tree with R2 value of 0.58. This implies that the proposed method more effectively catches the variance in retention data.

TABLE XIII. R²

Epoch	Linear Regression (R ²)	Decision Tree (R ²)	Proposed Method (R ²)
25	0.45	0.50	0.62
50	0.48	0.53	0.68
75	0.50	0.55	0.73
100	0.52	0.58	0.78

V. CONCLUSION

The comparison of performance measures (accuracy, F1- score, and R2) between the proposed method and current methods (linearly regression and decision tree) shows how well the suggested approach enhances employee retention prediction in the Indian textile industry. The proposed method proved to be superior than the present ones. Reaching a peak value of 90%, much above both the standard, Linear Regression (74%), and Decision Tree (77%), the proposed approach yields accuracy. Consequently, the recommended approach seems to be more effective in exactly predicting employee retention. Notable improvement is also shown by the F1-score; the recommended strategy gets 0.91, far above the 0.74 obtained by Linear Regression and the 0.77 attained by Decision Tree. This is not the situation for the lower R2 values related with the current strategies.

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