

Labour Law Awareness and Industrial Relations in the Textile Industry of Nadia and Hooghly Districts, West Bengal

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Abstract

The effectiveness of labour laws in shaping industrial relations depends not only on statutory provisions but also on workers' awareness of their legal rights and obligations. This empirical study examines the association between awareness of labour laws and the nature of industrial relations in the textile industry of Nadia and Hooghly districts of West Bengal. Primary data were collected from 125 textile workers using a structured questionnaire. The study employed the Chi-square test of independence to analyze the relationship between the selected variables. The findings reveal a statistically significant association, indicating that higher levels of legal awareness among workers are linked with more cordial industrial relations. The study underscores the importance of legal literacy in strengthening industrial harmony and effective labour law implementation.

Keywords: Labour laws, Industrial relations, Legal awareness, Textile industry, West Bengal

Introduction

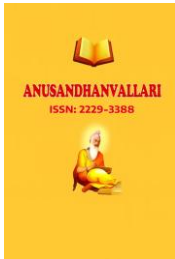
Industrial relations in the textile industry have long been influenced by the framework and functioning of labour laws in India (Ali, 2025). Legislations such as the Industrial Disputes Act, 1947 and the Factories Act, 1948 were enacted to ensure balanced relations between employers and workers through defined rights, duties, and dispute-resolution mechanisms. However, they were replaced by the Industrial Relations Code, 2020. Now, the effectiveness of the code largely depends on the extent to which workers are aware of their legal entitlements and obligations (King et al., 2025). In labour-intensive sectors like textiles, inadequate legal awareness often contributes to misunderstandings, grievances, and industrial conflict. This study examines the association between workers' awareness of labour laws and the nature of industrial relations in selected textile units of Nadia and Hooghly districts of West Bengal using empirical evidence and statistical analysis.

Materials and Methods Research Design

The present study adopts a descriptive and analytical research design to examine the association between awareness of labour laws and the nature of industrial relations in the textile industry. The study is empirical in nature and relies on primary data collected from textile workers.

Area of Study

The study was conducted in selected textile units located in the Nadia and Hooghly districts of West Bengal. These districts were chosen due to their historical and contemporary significance in the textile industry and the prevalence of diverse labour-management relations.



Sample Size and Sampling Technique

A total of 125 textile workers constituted the sample size for the study. Respondents were selected using a purposive sampling method, ensuring that only workers directly engaged in textile units were included. The sample size was considered adequate for applying the Chi-square test of association.

Tool for Data Collection

Primary data were collected using a structured questionnaire designed specifically for the objectives of the study. The questionnaire consisted of seven close-ended questions, ensuring clarity, simplicity, and ease of response.

Variable	Question No.	Type of Data	Role
Awareness of Labour Law	Q2, Q5	Ordinal	Independent Variable for χ^2
Nature of Industrial Relation	Q3, Q8	Ordinal	Dependent Variable for χ^2
Legal Exposure & Context	Q4, Q6	Ordinal	Corroborative Validity
IR Environment	Q7, Q9	Ordinal	Interpretive Support
Personal Details	Q1, Q10	Nominal/Ordinal	Supplementary

Tab 1: Variable–Question Mapping

The use of close-ended categorical questions made the data suitable for non-parametric statistical testing.

Method of Data Analysis

The collected data were tabulated and analyzed using the Chi-square test of independence to examine whether a statistically significant association exists between the two variables.

The following hypotheses were tested:

- **Null Hypothesis (H_0):** There is no significant association between awareness of labour laws and the nature of industrial relations.
- **Alternative Hypothesis (H_1):** There is a significant association between awareness of labour laws and the nature of industrial relations.

Expected frequencies were calculated using the standard Chi-square formula, and the calculated Chi-square value was compared with the tabular value at the 5 per cent level of significance.

Justification for Use of Chi-Square Test

The Chi-square test was considered appropriate for the study because both variables were categorical in nature. The objective was to test association, not causation and the sample size was sufficiently large.

Ethical Considerations

Participation in the survey was voluntary. Respondents were informed about the academic purpose of the study, and confidentiality of responses was maintained.

Results

Survey of Textile Workers [Observed Frequencies (n) = 125]

Awareness of Labour Laws	Cordial Industrial Relations	Moderate Industrial Relations	Conflict-Prone Industrial Relations	Total
Aware	32	10	3	45
Partially Aware	15	20	10	45
Not Aware	5	12	18	35
Total	52	42	31	125

Table 2: Table of observed values

Now, to calculate the expected values, the following formula will be used:

$$E = (\text{Row Total} \times \text{Column Total}) / (\text{Grand Total})$$

Using the formula mentioned above, the following data is received:

Awareness of Labour Laws	Cordial Industrial Relations	Moderate Industrial Relations	Conflict-Prone Industrial Relations	Row Total
Aware	18.72	15.12	11.16	45
Partially Aware	18.72	15.12	11.16	45
Not Aware	14.56	11.76	8.68	35
Column Total	52	42	31	125

Table 3: Table of expected frequencies

Table 2 presents the observed frequencies obtained from the field survey, while **Table 3** shows the expected frequencies calculated under the assumption of independence between the variables.

Calculation of χ^2

Awareness x Industrial Relations	Observed Value (O)	Expected Value (E)	(O - E)	(O - E) ²	$\frac{(O - E)^2}{E}$
Aware × Cordial	32	18.72	13.28	176.36	9.42
Aware × Moderate	10	15.12	- 5.12	26.21	1.73
Aware × Conflict-Prone	3	11.16	- 8.16	66.59	5.97
Partially Aware × Cordial	15	18.72	- 3.72	13.84	0.74
Partially Aware × Moderate	20	15.12	4.88	23.81	1.57
Partially Aware × Conflict-Prone	10	11.16	- 1.16	1.35	0.12
Not Aware × Cordial	5	14.56	- 9.56	91.39	6.28

Not Aware × Moderate	12	11.76	0.24	0.06	0.01
Not Aware × Conflict-Prone	18	8.68	9.32	86.86	10.01

Table 4: Table of Awareness of Labour Laws × Nature of Industrial Relations

$\sum \chi^2$ (Calculated Value):

The following formula will be used to find out the Chi-Square Value

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

Therefore, $\chi^2 = 35.85$

The Degrees of Freedom (df) in the Chi-Square Test will be using the following formula:

$$df = (r - 1)(c - 1)$$

Therefore, $df = 4$

The following picture contains the tabular values of χ^2

DF	0.995	0.975	0.95	0.9	0.85	0.8	0.75	0.7	0.65	0.6	0.55	0.5	0.45	0.4	0.35	0.3	0.25	0.2	0.15	0.1	0.05	0.025	0.01	0.005	0.001
1	0.0004	0.0006	0.001	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.013	0.016	0.020	0.025	0.031	0.038	0.046	0.055	0.064	0.075	0.088	0.104	0.121	0.141	0.165
2	0.010	0.015	0.020	0.027	0.034	0.041	0.048	0.056	0.064	0.073	0.083	0.093	0.104	0.115	0.127	0.139	0.151	0.164	0.177	0.191	0.205	0.220	0.235	0.250	0.267
3	0.076	0.100	0.125	0.150	0.177	0.205	0.233	0.261	0.290	0.319	0.349	0.379	0.409	0.439	0.469	0.499	0.529	0.560	0.591	0.622	0.653	0.684	0.715	0.746	0.777
4	0.205	0.250	0.296	0.344	0.392	0.440	0.488	0.536	0.584	0.632	0.680	0.728	0.776	0.824	0.872	0.920	0.968	1.016	1.064	1.112	1.160	1.208	1.256	1.304	1.352
5	0.412	0.476	0.541	0.607	0.673	0.739	0.805	0.871	0.937	1.003	1.069	1.135	1.201	1.267	1.333	1.399	1.465	1.531	1.597	1.663	1.729	1.795	1.861	1.927	1.993
6	0.676	0.758	0.832	0.907	0.982	1.057	1.132	1.207	1.282	1.357	1.432	1.507	1.582	1.657	1.732	1.807	1.882	1.957	2.032	2.107	2.182	2.257	2.332	2.407	2.482
7	0.989	1.090	1.192	1.294	1.396	1.498	1.599	1.701	1.803	1.905	2.007	2.109	2.211	2.313	2.415	2.517	2.619	2.721	2.823	2.925	3.027	3.129	3.231	3.333	3.435
8	1.344	1.469	1.594	1.719	1.844	1.969	2.094	2.219	2.344	2.469	2.594	2.719	2.844	2.969	3.094	3.219	3.344	3.469	3.594	3.719	3.844	3.969	4.094	4.219	4.344
9	1.735	1.875	2.015	2.155	2.295	2.435	2.575	2.715	2.855	2.995	3.135	3.275	3.415	3.555	3.695	3.835	3.975	4.115	4.255	4.395	4.535	4.675	4.815	4.955	5.095
10	2.156	2.307	2.458	2.609	2.760	2.911	3.062	3.213	3.364	3.515	3.666	3.817	3.968	4.119	4.270	4.421	4.572	4.723	4.874	5.025	5.176	5.327	5.478	5.629	5.780
11	2.603	2.765	2.927	3.089	3.251	3.413	3.575	3.737	3.899	4.061	4.223	4.385	4.547	4.709	4.871	5.033	5.195	5.357	5.519	5.681	5.843	6.005	6.167	6.329	6.491
12	3.074	3.247	3.420	3.593	3.766	3.939	4.112	4.285	4.458	4.631	4.804	4.977	5.150	5.323	5.496	5.669	5.842	6.015	6.188	6.361	6.534	6.707	6.880	7.053	7.226
13	3.565	3.749	3.933	4.117	4.301	4.485	4.669	4.853	5.037	5.221	5.405	5.589	5.773	5.957	6.141	6.325	6.509	6.693	6.877	7.061	7.245	7.429	7.613	7.797	7.981
14	4.075	4.269	4.463	4.657	4.851	5.045	5.239	5.433	5.627	5.821	6.015	6.209	6.403	6.597	6.791	6.985	7.179	7.373	7.567	7.761	7.955	8.149	8.343	8.537	8.731
15	4.601	4.805	5.009	5.213	5.417	5.621	5.825	6.029	6.233	6.437	6.641	6.845	7.049	7.253	7.457	7.661	7.865	8.069	8.273	8.477	8.681	8.885	9.089	9.293	9.497
16	5.142	5.356	5.570	5.784	5.998	6.212	6.426	6.640	6.854	7.068	7.282	7.496	7.710	7.924	8.138	8.352	8.566	8.780	8.994	9.208	9.422	9.636	9.850	10.064	10.278
17	5.697	5.921	6.145	6.369	6.593	6.817	7.041	7.265	7.489	7.713	7.937	8.161	8.385	8.609	8.833	9.057	9.281	9.505	9.729	9.953	10.177	10.401	10.625	10.849	11.073
18	6.265	6.499	6.733	6.967	7.201	7.435	7.669	7.903	8.137	8.371	8.605	8.839	9.073	9.307	9.541	9.775	10.009	10.243	10.477	10.711	10.945	11.179	11.413	11.647	11.881
19	6.844	7.088	7.332	7.576	7.820	8.064	8.308	8.552	8.796	9.040	9.284	9.528	9.772	10.016	10.260	10.504	10.748	10.992	11.236	11.480	11.724	11.968	12.212	12.456	12.700
20	7.434	7.688	7.942	8.196	8.450	8.704	8.958	9.212	9.466	9.720	9.974	10.228	10.482	10.736	10.990	11.244	11.498	11.752	12.006	12.260	12.514	12.768	13.022	13.276	13.530

Pic 1: Tabular Values of Degrees of Freedom for χ^2

The above Pic 1 shows the Tabular Values of Degrees of Freedom for χ^2 , from which, the following can be concluded:

Significance Level: 0.05 (α)

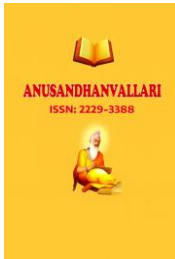
$$\chi^2_{\text{tabular}} = 9.488$$

$$\chi^2_{\text{calculated}} = 35.85$$

Since, $\chi^2_{\text{calculated}} > \chi^2_{\text{tabular}}$ (or, χ^2_{critical})

So, null hypothesis is rejected and alternate hypothesis is accepted.

The calculated Chi-square value ($\chi^2 = 35.85$) is greater than the tabular value at 5 per cent level of significance ($\chi^2 = 9.488$) with 4 degrees of freedom. Hence, the null hypothesis is rejected. This indicates that there is a statistically significant association between the level of awareness of labour laws among textile workers and the nature of industrial relations.



Conclusion

The study establishes a statistically significant association between workers' awareness of labour laws and the nature of industrial relations in the textile industry. Higher levels of legal awareness are linked with more cordial industrial relations, while low awareness corresponds with conflict-prone environments (Mukherjee & Bharti, 2025). This finding aligns with the objectives of Indian labour legislation, based on Industrial Relations Code, 2020 which seek to promote industrial harmony through informed compliance and institutional dispute resolution (Ranjan et al., 2025). From an industrial relations perspective, the results support the pluralist theory, which emphasizes rule-based negotiation and legally informed participation in managing workplace conflicts (Solaipriya et al., 2025). The study concludes that labour laws influence industrial relations not merely through enforcement but through awareness, making legal literacy among workers a crucial factor in sustaining industrial peace (Vemulapalli, 2025).

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