

Dynamics of Trade Unions and Industrial Relations Quality: An Empirical Perspective

Pradipta Nayak¹, Dr. Sudipta Adhikary², Dr. Kaushik Banerjee³
 (Corresponding Author's mail id: sua.law@brainwareuniversity.ac.in)

¹ Research Scholar, School of Law, Brainware University, India
² Associate Professor, Department of Law, Brainware University, India
³ Professor & HOD of Law, Brainware University, India

Abstract

Trade unions are conventionally regarded as essential institutions for promoting harmonious industrial relations. However, empirical evidence from labour-intensive sectors suggests that union presence alone may not guarantee improved workplace outcomes. This study examines whether the quality of industrial relations differs significantly between unionised and non-unionised textile establishments in the districts of Nadia and Hooghly of West Bengal. Primary data were collected from 120 textile workers using a structured questionnaire, and industrial relations quality was measured on an ordinal scale. A Mann-Whitney U test was employed to compare the two independent groups. The results reveal no statistically significant difference in industrial relations quality between unionised and non-unionised workplaces. The findings highlight that effective industrial relations depend not merely on union existence but on their functional orientation, legal awareness, and institutional effectiveness.

Keywords: Trade Unions, Industrial Relations, Textile Industry, Labour Law, India

INTRODUCTION

Industrial relations in labour-intensive sectors such as textiles are shaped by multiple institutional factors, among which trade unions occupy a central position (Debono & Garzia, 2023). Classical industrial relations theory often assumes that the presence of trade unions contributes to improved workplace harmony through collective bargaining, grievance handling, and worker representation (Ramaswamy & Schiphorst, 2000). (Hammer, 2010). However, empirical evidence from developing industrial regions suggests that union presence does not always translate into better industrial relations at the enterprise level. In this context, the present chapter empirically examines whether unionised and non-unionised textile workers differ significantly in their experience of industrial relations, using a Mann-Whitney U test, a non-parametric statistical technique suitable for ordinal data.

Objectives of the Study

- i. To measure the quality of industrial relations among textile workers.
- ii. To compare industrial relations outcomes between unionised and non-unionised establishments.
- iii. To test whether trade union presence leads to a statistically significant difference in industrial relations quality.

Hypotheses

Null Hypothesis (H₀): There is no significant difference in the quality of industrial relations between unionised and non-unionised textile establishments.

Alternative Hypothesis (H₁): There is a significant difference in the quality of industrial relations between unionised and non-unionised textile establishments.

Research Design and Methodology Nature of Data

The study is based on primary data collected from textile workers using a structured questionnaire. The quality of industrial relations was measured using an ordinal scale, making parametric tests unsuitable. A significant amount (n=120) of workers participated in the test. The sample size includes unionized and non-unionized workers from both Nadia and Hooghly districts.

Sample Design

Group	Sample Size
Unionized (U ₁)	86
Non-Unionized (U ₀)	34
Total Respondents	120

Table 1: Distribution of Sample & Group

Measurement of IR Quality & Construction of IR Index

Industrial relations quality was measured through five indicators, i.e., worker-management communication, handling of grievances, frequency of conflicts, management responsiveness and workplace cooperation. Each indicator was rated on a three-point ordinal scale: Poor = 1; Moderate = 2; Good = 3. The composite score ranged from 5 to 15, which was further classified as follows:

Composite Score	IR Quality Indicator	Rank
5-8	Poor	1
9-12	Moderate	2
13-15	Good	3

Table 2: Rank Distribution as per Composite Score

Sample Distribution of Data

IR Quality	Unionized Workers (n=86)	Non-Unionized (n=34)	Total
Poor (Rank 1)	32	9	41
Moderate (Rank 2)	38	19	57
Good (Rank 3)	16	6	22
Total	86	34	120

Table 3: Distribution of IR Quality by Union Status

Reasons for performing Mann-Whitney U Test

The Mann-Whitney U test was selected because the dependent variable (IR quality) is ordinal. The samples are independent in nature and the data do not meet the assumptions of normality. Also, the comparison involves two independent groups.

Ranking of Observations Total respondents (n=120)

IR Quality	IR Rank	Frequency	Rank Range	Average Rank
Poor	1	41	1-41	21.0
Moderate	2	57	42-98	70.0
Good	3	22	99-120	109.5

Table 4: Rank Assignment

Calculation of Rank Sums Unionised Workers (n₁ = 86)

Rank	Frequency	Average Rank	Rank Total
1	32	21.0	672
2	38	70.0	2660
3	16	109.5	1752

Table 5: Rank Sum – Unionised Workers

Therefore, R₁ = 5084

Non-Unionised Workers (n₂ = 34)

Rank	Frequency	Average Rank	Rank Total
1	9	21.0	189
2	19	70.0	1330
3	6	109.5	657

Table 6: Rank Sum – Non-Unionised Workers

Therefore, **R₂ = 2176 Total Ranks: 7260**

Computation of Mann–Whitney U Given:

- n₁ = 86
- n₂ = 34
- R₁ = 5084

$$U_1 = n_1n_2 + \frac{n_1(n_1 + 1)}{2} - R_1$$

So, U₁ = 1581

And,

Given:

- n₁ = 86
- n₂ = 34
- R₂ = 2176

$$U_2 = n_1n_2 - \frac{n_2(n_2 + 1)}{2} - R_2$$

So, U₂ = 1343

The smaller value of the two is U₂ = 1343

Z-value Calculation Mean of U

$$\mu_U = \frac{n_1n_2}{2}$$

μ_U = 1462

Standard Deviation

$$\sigma_U = \sqrt{\frac{n_1n_2(n_1 + n_2 + 1)}{12}}$$

$$\sigma_U = \sqrt{\frac{86 \times 34 \times 121}{12}} \approx 171.7$$

Z-value

$$Z = \frac{U - \mu_U}{\sigma_U}$$

$$Z = \frac{1343 - 1462}{171.7} \approx -0.69$$

Significance Testing Level of

significance: 5% Critical Z-value: 1.96

The Mann–Whitney U test yielded a U value of 1343 with an associated Z-value of –0.69, which is not statistically significant at the 5% level. This indicates that there is no statistically significant difference in the quality of industrial relations between unionised and non-unionised textile establishments.

RESULT

A two-tailed Mann–Whitney U test was employed to examine whether a statistically significant difference existed between unionised and non-unionised establishments with respect to the quality of industrial relations. Although unionised establishments exhibit marginally higher rank sums for industrial relations quality, the observed difference is not statistically significant. This suggests that trade union presence alone does not guarantee superior industrial relations outcomes. Factors such as union effectiveness, legal awareness, leadership orientation, and management responsiveness appear to play a more decisive role than mere formal unionisation.

CONCLUSION

The empirical findings demonstrate that unionisation, in isolation, does not exert a statistically significant influence on the quality of industrial relations within the textile sector (Sodhi, 2013) (Noronha, 2003). While unions remain important institutional actors, their impact on workplace harmony depends substantially on their functional capacity, legal engagement, and worker-centric orientation (Kulkarni & Datta, 2024) (Sinha, 2017). The study thus underscores the need for strengthening the substantive role of trade unions beyond symbolic or politically driven activity to achieve sustainable industrial peace.

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