

Collective Bargaining Process and Industrial Relation Environment in Public Utility Services in India

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Abstract

In this research article an attempt is made to investigate the effect of collective bargaining process on industrial relations environment in public utility services in India. The data used in analysis is based on stratified random sample of 460 respondents comprise of both employees and managerial personnel in selected public utility services in India. To achieve research objectives, data is collected from primary and secondary sources by field survey method with a help of structured questionnaire. Expert judgment was used to determine the validity while Cronbach alpha coefficient was used to determine reliability of research instruments. Qualitative and quantitative data was analysed using both descriptive and inferential statistics with the help of SPSS (statistical package for social sciences) 21 version. Exploratory factor analysis was performed to reduce large number of variables for further analysis. Multiple regression analysis was employed to determine the effect of collective bargaining process on industrial relations. The result show that fairness and good faith in collective bargaining ($\beta=0.254$), collective bargaining agreement ($\beta=0.247$) and strong trade union ($\beta=0.208$) are strongly influence on industrial relation environment in public utility services.

Key Words: Collective Bargaining, Industrial Disputes Act, 1947, Industrial Relation Environment, Public Utility Services and Trade Union.

Introduction

Collective bargaining is the process by which the parties conduct the search for a suitable solution for varied interests, acceptable to both the parties. Collective bargaining involves the involvement of both the parties who are interested in the industrial relations as a matter of joint regulation. Collective bargaining aims at reaching some settlement, but going by its nature it implies some awareness of necessity. Collective bargaining means some amount of settlement reaching.

The behavioural scientists describe collective bargaining in terms of social, economic, political implications for the society. Collective bargaining directly affects trade union members through the setting of wages, working hours and conditions of employment. It indirectly affects large number of breadwinners and encourages their employers to maintain good employment relation if only to avoid unionization. It also affects the consumer, through the production or the withholding of goods and services, the stock holder, through profits or losses of the enterprises, and the government in an attempt to stakeholders and alleviates or prevents industrial conflict.

Collective bargaining is one of the most effective instruments in the hands of the workers to better their conditions. It is just not a method of settling disputes only but also its prevention. The process of discussion and negotiation between the two interested parties, being it an individual or between groups of persons acting in concert is called collective bargaining (Encyclopaedia of Social Sciences).

Collective Bargaining is a process of resolving labour-management conflicts. It is essentially a recognised way of creating a system of industrial jurisprudence. It acts as a method of introducing civil rights in the industry i.e., management should be conducted by rules rather than arbitrary decision making. The term "collective bargaining" was first used by the economic theorist Beatrice Webb in Britain in 1891. The concept was first used in U.S.A by Gompers. The collective bargaining is made up of two terms. Collective indicating an activity by a group of people and bargaining means negotiation. The two key ILO conventions- convention no-87 on freedom of association and convention no-98 on

the right to collective bargaining are the key aspects of Industrial Relations. The labour policy is determined by the complex interplay of three main actors (Dunlop 1958). They are:

1. The government both central and state
2. The employers and their associations
3. The workers and the trade unions representing them.

In order to have harmony in industrial relations the government played an activist role by instituting a variety of labour laws.

What is Public Utility status?

Public Utility are those organizations, company or corporations which provide the essential services to the public. The undertakings which supply the basic necessary services such as electricity, water, gas, power, transport etc. comes under the purview of the public utility services.

These public utility services are maintained and regulated by the government vis local, state and national government according to their respective level of authority.

According to Business Dictionary, “public utility is government or private sector owned provider of energy, telecommunications, transportation, waste disposal, water or other such basic goods or services”

The public utility includes all the services which are necessary for the livelihood, and for that reason also they are to be regulated and should be available at reasonable rate. These services involve a huge investment; government gives various incentives to these industries so that they can fulfil their requirements along with providing the services at reasonable rate.

Public Utility status under Industrial Disputes Act, 1947

The Industrial Dispute act, 1947 came into force in April, 1947. The purpose of the enactment of this act was the settlement and prevention of industrial disputes. It provides safeguard to the workers. The government of India has made several amendments in the Industrial Disputes act, 1947 vide The Industrial Disputes (amendment) act, 2010. The amendment was made after tri-partite consultation.

The purpose was to remove the ambiguity in the definition of Appropriate Government and the difference in the interpretation of various judicial judgements. The amended provision came into force vide notification no. 2278(E) dated 15.9.2010. In the amendment, focus was made on the Public Utility Services so as to ensure the availability of these services to the society at reasonable price and conditions.

Public Utility Services includes those enterprises which produce those goods and services which are indispensable part of human life. The below following section discussing more about the public utility services, its features and will also discuss its status under the industrial Disputes Act, 1947.

Salient features of Public Utility services under Industrial Disputes Act, 1947

The objective of the industrial disputes Act is to maintain industrial peace and harmony among the labour class and the employers. The act ensures to provide machinery and infrastructure and various other incentives to the industries to fulfil their requirements and also provides for the settlement of the industrial disputes by negotiations.

The Public utility status is also maintained under the industrial disputes act, 1947. The various features of the public utility services and the Industrial disputes act, 1947 are discussed below.

The main features of the Industrial Disputes Act are: –

- a) The disputes will be resolved easily with the help of industrial disputes act. The problem can be referred to the industrial tribunal and can be timely resolved by the appropriate government.
- b) There will be a check on the illegal lockouts and strikes.
- c) Fair terms and conditions will be made between the workmen and the employers.
- d) Compensations and remedy will be given to the labour in case of his retrenchment a, layoff.

The main features of the public Utility services are: –

- a) Public Utility services includes those goods and services which are indispensable part of human life and without them it would be a great hardship for the human to survive.
- b) The Public utility services are mostly local in character and are regulated by the local government.

- c) These public utilities are organized as monopolies by the government as they provide basic necessities, so any deficit in the quality of their product and services would lead to big social problems.
- d) Public utilities involve huge investments, the entire investments had to be, made prior to the commencement of the operations.
- e) There is significantly lower risk in public utilities as there is no fear of change in demand and preferences of the customers. The demand and supply of the goods and services fon hand in hand.
- f) Public utilities also achieve economies of scale as they producer on a large scale for a wide population.

The Public utility services are regulated under the Industrial dispute act. It is the duty of these utilities to provide its services to all without any discrimination and at a reasonable price. It should indulge in unfair trade practices and should not hype the prices. It should provide goods and services at a fair rate and of good qualities to all. The Industrial Disputes act ensures it for the protection of the consumers.

Provisions regarding Public utility status in the Industrial Disputes Act, 1947

The main purpose of the Industrial disputes act, 1947 is ensure the fair term and conditions between the Employer and employee, workmen and workmen as well as workmen and employer. The labour ministry has extended the scope of public utility services status under the industrial disputes act; it has extended it to the tree services in the recent amendment of the act in 2010, which includes the processing, production or distribution of fuel, gases and Industrial establishments manufacturing or providing nuclear fuel & components, heavy water & allied chemicals & atomic energy & banking industry.

To make it understandable, the list of the various industries which are declared to be public utility services under sub clause (vi) of clause (n) sec (2) includes:

Transport (other than railways) for carriage of passengers or goods by land or water, Banking, Cement, Coal, Cotton textiles, Foodstuffs, Iron and steel, Défense establishments, Services in hospitals & dispensaries, Fire brigade, India Government ministry, India security press services, Copper mining, Zinc mining, Iron ore mining, Services in any oil field, Retail Electric Provider (REP), Services in the uranium industry, Pyrite mining, Security paper mill, Services in the bank note press, Phosphorite mining and Magnesite mining.

STATEMENT OF THE PROBLEM

For social, economic and potential progress to happen, the essential condition is to maintain harmonious relation by the human beings. Due to the rise in the complexity of the modern industrial system, numerous problems arise in the industrial relations scenario. The gap between the owners of the industry and the employees who work in it keeps on increasing due to the complexities. This gap gives rise to conflict in labour management relations. As a result of the conflict here is drastic fall in the level of production which further adds to hardship of the community. From the very begin this difference of opinion has been existing. Workers keep his competence and exert effort to achieve higher wages and other economic benefits, great amount of job security in the course of employment. Workers feel that they should be provided with freedom and dignity at the work place. The employers on the other hand view this as encroachments upon their profitability, their freedom to hire and fire and to control the operation of their enterprises as a whole. There has been existence of conflicts and differences which leads to disputes between the employers and the employees. It would be wrong to presume that the disputes between the two leads can be halted. The present study addresses this issue and also examines the impact of collective bargaining on industrial relation environment in selected public utility services.

REVIEW OF LITERATURE

Collective Bargaining has been an important academic research topic since the term evolved in the year 1891. From then on, there have been research studies undertaken to address the issues of Collective Bargaining. The reviews on some of the researchers in the domain are given:

Literature Review has been categorized in accordance to the following:

- a) Studies concerning about Collective Bargaining.
- b) Studies concerning effect of collective bargaining on industrial relation environment. work culture.
- c) Judicial perspective on collective bargaining.

In labour relations, negotiation is referred to as a process of an agreement to gain the interests of each party in the purchase, sale, and use of labour goods and to resolve problems arising in labour relations. According to the ILO (1981), collective bargaining is all negotiations that take place between one party consisting of an employer, a group of employers, or one or more employer's organizations and the other party including one or more workers' organizations to stipulate working conditions and employment, resolve the relationship between employers and workers, or resolve the relationship between employers or their organizations and one or more workers' organizations.

In Vietnam, according to the **National Assembly (2012)**, collective bargaining is the discussion and negotiation between the employees and the employer to build harmonious, stable, and progressive industrial relations; establish new working conditions as a basis for the signing of the collective labour agreement; resolve problems and difficulties in the exercise of rights and performance of obligations by each party in industrial relations. The contents of collective bargaining at enterprises include salary, bonus, allowance, and salary promotion; working time, rest time, overtime work, break between shifts; job security for employees; labour safety and hygiene; implementation of labour regulations; other contents that are of concern to both parties.

Researching on negotiating issues in industrial relations, **Tracy (2016)** presented key negotiation styles, instructing readers to exploit the power of emotions in the negotiation process, knowledge of negotiating strategies, and how to enter a negotiation with a well-prepared attitude. **Cohen (2018)** set out the basic elements of negotiation and major types of negotiation, especially, the wages negotiation.

Bacharach and Lawler (1981) with a comprehensive power model in collective bargaining provided elements of (i) commitment to negotiating relationship; (ii) information available to parties, (iii) the bargaining power that union negotiators and employers bring in collective bargaining relationships.

Atkin and Rinehart (2006) provided four objectives in negotiation and discussion, including (i) win-win goal; (ii) one party benefits from on the other's costs but both win; (iii) one side wins - one side loses and (iv) both parties lose. The direct participation of both parties—the employer and the employees—in the collective decision-making process provides an in-built mechanism for speedy implementation of decisions arrived at collective bargaining. In negotiations, the achievement of the central goals is also a victory for the participants. But in the industrial relations at the enterprise, for the collective of workers, the goal of the collective negotiation is to achieve higher benefits than regulated in the law. Benefits that are expected to be higher are wages above the minimum level and more inversely tied wages to the employee's contribution to the enterprise. When workers contribute enough to create greater value for the enterprise, they deserve to receive bonuses or welfare regimes in terms of economic benefits or material benefits. On the employer's side, they also benefit from the employment relationship between themselves and the employee which is a "win-win" relationship (**Tracy, 2016**).

Badekale et al. (2016) posit that while threats of strike cannot be absolutely prevented, conflicts or misunderstandings that often emanate from it can be well managed. Consequently, disputes in an organization can be managed through joint consultation forums, collective bargaining agreements, and grievance handling mechanisms set by organizations. **Abioro et al., (2019)** argue that collective bargaining can achieve a better result in resolving conflict in an organization. Organizations must have acceptable grievance handling mechanisms in place if industrial disputes must be arrested at an infant stage. Employee involvement in dispute management, recognizing the democratic rights of workers, and full recognition of workers has positive effect on industrial dispute management (**Kibe, 2014**).

Collective bargaining is the process in which working people, through their unions, negotiate contracts with their employers to determine their terms of employment. In industrial relations, collective bargaining helps in managing industrial conflicts between employers and employees through collective negotiation and consultation with the workers' representatives and management.

Do and Pham (2021) avers that collective bargaining takes place between an employer and employee representatives to come up with working conditions of employment, resolve the relationship between employers and workers, or resolve the relationship between employers or their organizations and one or more workers' organizations.

In the studies of Sanibel (2009), Tracy (2016), Cohen (2018), and Vu (2019), the factors that create the capacity of parties participating in collective bargaining (including employers, workers, and the collective representative of the employee - trade union) are referred to as professional qualifications, work experience, negotiation skills, and communication skills. These are criteria used to evaluate both parties in industrial relations, including both the employers and the representative of the employees in the enterprise or the primary trade union.

Kuruvilla and Turner (1993) affirmed the role of trade unions in collective bargaining. Vu (2019) and Do (2020) said that the primary trade union represents the legal rights and interests of workers, is the representative for the voice, the thoughts, and the aspirations of employees in the process of enterprise operation. As a representative for the employees, negotiating, signing, and implementing the collective labor agreement at the enterprise, the primary trade union must show its position, strength, and independence, apart from the necessary factors according to the capacity scale, to influence negotiating partners to achieve bargaining goals (Bacharach & Lawler, 1981; Vu, 2019).

According to **Raj and Rani** (2021), a trade union conducts collective bargaining on behalf of workers, which helps in negotiating labour conditions of employment to counterbalance the bargaining strength of the employer. The employer negotiates with only recognized trade unions that must demonstrate to represent a simple majority of unionizable workers. The strength of the union to collective bargain lies in the numbers of its members and its ability to remain permanent to represent members. The product of collective bargaining is a collective bargaining agreement signed by both parties in negotiation which is binding for the period under consideration.

Akhaukwa et al.(2013) indicated that collective bargaining had been noted to assist in fostering cooperation and mutual understanding between workers and management by providing a framework for dealing with industrial relations issues without resorting to strikes and lockouts. The relationship between management and employees will be peaceful if collective bargaining agreement is implemented in a manner that is acceptable to elicit trust and productivity among the workers (Opara, 2013).

Tapakuwa and Sheifa (2019) looked at the effectiveness of collective bargaining in conflict resolution in the retail industry. The study used qualitative research approach with face-to-face interviews allowing the researcher to probe further into the research topic. The study used snowball sampling technique to select a sample from a population of 500 employees in the retail industry in Mutare urban. The study revealed that most of the retailers participate in the collective agreements and are compliant with the labour acts. Further established work councils at work participate in collective agreement and facilitate resolution of disputes relating to rights and interests. The study indicated that collective bargaining promotes industrial peace, harmony and industrial relations, which has resulted in reduction of industrial conflicts.

Karimi and Nyawira (2019) sought to establish the relationship between trade union campaigns and organizational performance in the health sector in Kiambu County. The study used descriptive research design, collecting data from a sample of 99 respondents drawn from a population of 550 employees of three departments in the health sector. The study established that dispute resolution has a positive influence on organization performance. It was further established that trade unions are participating in negotiation and management of disputes in the organization which has resulted in improved performance.

Sawe, Kimutai and Kemboi (2018) looked at the influence of collective bargaining agreement structures on tripartite employment relationships in manufacturing companies in North Rift Counties. The study focused on determining the influence of collective bargaining agreement structures, dispute resolution mechanisms, industrial relations training and labour legislation on industrial relations in manufacturing companies in North Rift Counties.

Agbo (2020) examined the effect of collective bargaining on conflict resolution in organizations by carrying out a study of Juhel Pharmaceutical Company, Enugu, Enugu State in Nigeria. The data was collected from a population of 60 members of staff with simple random sampling used to select a sample of 30 respondents who were issued with questionnaires. The study established that there is a positive relationship between collective bargaining and conflict resolution. It was further established that sex and age have a positive relationship in conflict resolution. Collective bargaining provides amicable mechanisms for settling grievances and conflicts between employees and management.

Perlman (2009): Believes that collective bargaining is not just meant to demand to raise wages, improvement in working condition and terms of employment or to establish democracy at workplace rather it serves a bigger purpose.

Spinrad William (1960) examines about comparing the participant and non-participant members of trade unions, interrelationship between the variables.

Beaumont P.B., Thomson A.W.J., Gregory M.B.(1980) there are multi-employer versus single employer, company versus plant level bargaining, and the various public policy issues involved and also management decision on the bargaining structure.

Moberly Robert B. (2011) the study emphasis on worker ownership, the concept of employee stock option plan (ESOP), the weaknesses in the law of collective bargaining especially where tribunals have limited and the duty to provide information and the scope of bargaining.

McCall J.B. (1986): This study examines on the finding that Collective bargaining depends s up on particular skills at different stages for its successful outcome. Identification of these skills and an ability to use them accurately is essential for today's manager.

JUDICIAL PERSPECTIVE ON COLLECTIVE BARGAINING

In this section an attempt is made to review land mark judgment relating it collective bargaining as a methods of resolution of industrial dispute and promotion of industrial peace.

1. **Bangalore Water Supply and Sewerage Board vs. A. Rajappa (1978)** – This landmark judgement held that the workers have an absolute right to resolve any issue by adapting the process of the collective bargaining and the agreement arrived through the collective bargaining is binding on the both parties. Moreover, the court held that the workers have a right to form unions and engage in collective bargaining even if they are employed by a public sector undertaking
2. **Management of Safdarjung Hospital vs. Kuldip Singh Sethi (1979)** - This judgement clarified the definition of 'Workman' under sec. 2(s) of the Industrial Disputes Act, 1947 and also held that a person who is not a regular employee but is engaged in work is essential to the business is also entitled to the benefits of collective bargaining.
3. **Central Bank of India vs. Rajagopalan (1992)** - In this case the court held that the Industrial Disputes Act, does not permit retrospective recognition of a union for the purpose of the collective bargaining.
4. **Bangalore Water Supply and Sewerage Board vs. R. Rajappa (1978)** - This case held that workers have the right to form unions and engage in collective bargaining, even if they are employed by a public sector undertaking.
5. **Gujarat Electricity Board vs. Hind Mazdoor Sabha (1995)** – In this case the court held that a collective bargaining agreement can include provisions relating to job security and that such provisions can be enforced through the courts.
6. **Kerala State Electricity Board vs. Indian National Trade Union Congress (2000)**- In this case the court held that the management of a public sector undertaking cannot unilaterally withdraw from the collective bargaining agreement.
7. **Bharat Coking Coal Ltd. vs. Executive Committee, Rastriya Colliery Mazdoor Sangh (2001)** –in this it is held that a collective bargaining agreement can include provisions relating to the payment of bonus to workers.
8. **Hindustan Lever Ltd. vs. Workmen (1995)**–In this case the court held that the collective bargaining agreement can override the provisions in individual contracts of employment
9. **Indian Oxygen Ltd. vs. Workmen (1990)**–in this case it is held that a collective bargaining agreement can be enforced even if it is not signed by all parties, as long as there is evidence that the parties intended to be bound by its terms.
10. **Punjab National Bank vs. Indian Bank's Association (2000)** - This case held that a collective bargaining agreement can include provisions relating to the payment of pension benefits to workers.
11. **K..C-P, Limited v. Presiding Officer and Ors., (1996)** - It has to be kept in view that under the scheme of labour legislations like the Act in the present case, collective bargaining and the principle of industrial democracy permeate the relations between the man management on the one hand and the Union which resorts to collective bargaining on behalf of its members workmen with the management on the other. Such a collective bargaining which may result in just and fair settlement would always be beneficial to the management as well as to the body of workmen and society at large as mere would-be industrial peace and tranquillity pursuant to such settlement

RESEARCH GAP

It is observed from the literature survey that most of the researchers on Collective Bargaining have focussed on the bargaining process but no relevance is given on what the effect of collective bargaining on industrial relation environment in public utility services. Besides, there are only a few studies relating to conditions for successful collective bargaining and problems in collective bargaining process to fill the gap a research study is carried out.

OBJECTIVES OF THE STUDY

- To explore the judicial perspective on collective bargaining process in India
- To assess the effect of collective bargaining on industrial relation environment
- To identify the factors that contribute to successful or unsuccessful collective bargaining outcomes.
- To examine the problems of collective bargaining process in public utility services.

RESEARCH QUESTION

1. What is the effect of collective bargaining on industrial relation environment?
2. How does the collective bargaining process affect the relationship between employees and management?
3. What role does unionization play in the effectiveness of collective bargaining?
4. How does the existing legal framework address the problems of collective bargaining?
5. What are the main factors that influence the success of collective bargaining in public utility services?
6. What are the reasons for failure of collective bargaining in public utility services?

RESEARCH HYPOTHESIS

From the review of literature hypothesis are developed. The following are hypothesis framed under the study.

H0₁: There is no effect of collective bargaining on industrial relation environment.

This main hypothesis is subdivided into the following sub-hypothesis

H0_{1a}: There is no positive effect of Fairness and Good Faith in Collective Bargaining on industrial relation environment.

H0_{1b}: There is no positive effect of Competence of the Parties of the Collective Bargaining on industrial relation environment.

H0_{1c}: There is no positive effect of Management Support on industrial relation environment

H0_{1d}: There is no positive effect of Strong Trade Union on industrial relation environment

SCOPE OF THE STUDY

The study was conducted to examine the collective bargaining process, conditions for successful bargaining process and problems of collective bargaining in selected public utility services base on stratified random sampling

RESEARCH DESIGN AND METHOD

Research Design

The present study is a descriptive as well as an explanatory in nature.

Type of research

A quantitative cross-sectional survey-based research design was used in the present study.

Unit of analysis

The unit of analysis in the present comprises of employees and managerial personnel working in selected public utility service organisations in India

Target Population

Target population consist of all public utility services are notified under the Industrial dispute Act,1947 by the government of India.

Sampling Frame

The sampling frame for the research is the list of all categories of employees and managerial personnel working in selected public utility services.

Sampling Elements

The respondents for the present study are those who are employed in selected public utility services such as Coal India Limited (CIL), National Thermal Power Corporation (NTPC), State Bank of India (SBI) and Life Insurance Corporation of India (LIC).

Sampling Technique

For the purpose of selecting the sample of respondents for the study respondents are selected base on stratified random sampling method.

Sample size determination

The proposed sample size for the research is based upon the disproportionated random sampling method. The following table depict the details of sample size.

Table 1 Name of the Public Utility services and sample size

S.No	Name of the Public Utility service	Unionised member	Non-Unionised member	Management Personnel
1	Coal India Limited (CIL)	75	25	15

2	National Thermal Power Corporation (NTPC)	75	25	15
3	State Bank of India (SBI)	75	25	15
4	Life Insurance Corporation of India (LIC)	75	25	15
	Total	300	100	60

Sources of Data

The main sources of data for the present research consist of both primary and secondary sources. The primary data is collected with the help of administration of well-structured questionnaire. The secondary sources of data are journals, books, law journal, articles, precedents, reports and records of the organisation and through internet sources.

Date collecting procedure

The data used for the present study is primary in nature. The primary data was collected through the field survey.

Questionnaire construction

Based on the review of literature, variables have been identified for this research. A well-structured questionnaire has been designed to measure the variables in the study. The survey instrument was adopted from the 2010 Industrial Relations Climate, Employee Voice and Managerial Attitudes to Unions Survey conducted in Australia (Pyman et al., 2010), Industrial Relations Climate Survey in the Manufacturing sector in Singapore (Wan et al., 1997) and Industrial Relations Climate and Staff Survey in the Fire Service in United Kingdom (Redman and Snape, 2006). Original questions from the above studies were modified to conform to the objective of the study and to take into consideration of industrial relation environment in the India contexts.

Description of Scales

Table 2 Scale development

S.No	Scale	Number of items	Method	Source
1	Fairness and Good Faith in Collective Bargaining	5	Review of Literature	Turner (1993), Vu (2019), Do (2020a)
2	Competence of the Parties of the Collective Bargaining	4	Review of Literature and Focus group	Sanibel (2009), Tracy (2016), Cohen (2018), Vu (2019)
3	Management Support	4	Review of Literature and Focus group	Tracy (2016); Atkin and Rinehart (2006)
4	Collective Bargaining Agreement	4	Review of Literature and Focus group	Hoang (2011), National Assembly (2012, 2019), Nguyen (2018)
5	Strong Trade Union	4	Review of Literature and Focus group	Tracy (2016); Atkin and Rinehart (2006)
6	Industrial Relation Environment	8	Review of Literature and Focus group	Arup Roy Chowdhury and M G Jomon (2017)
7	Conditions for The Success of Collective Bargaining	8	Review of Literature and Focus group	Dr.Patrick J.Akhaukwa (2013)
8	Problems of Collective Bargaining	7	Review of Literature and Focus group	Sanibel (2009), Tracy (2016), Cohen (2018), Vu (2019)

Pilot Study

After designing the survey instrument, the scale was tested in the field. there are 70 respondents were approached and 60 responses were used for reliability study using Cronbach’s Alpha test. The result of the study was verified, and it was found to be favourable.

Reliability of the instrument

Reliability is the extent to which results are consistent over time and an accurate representation of the total population under the study, and if the results of the study can be reproduced under similar methodology, the research instrument is considered to be reliable (Easwaran, S., Singh, S. J, 2009). In this study, reliability was achieved by analysing quantitative data using statistical package for social sciences (SPSS) software to ensure consistency of the research results. Cronbach’s alpha ranges between zero (0) and one (1); the higher the value, the more reliable the scale. In this study, the coefficient alpha analysis is performed on each scale. The coefficient alpha values are shown in the table no 3

Table 3Reliability of instruments

S.No	Scale	Number of items	Reliability- Cronbach Alpha (α)
1	Collective Bargaining Process	21	Composite Reliability-.871
1.1	Fairness and Good Faith in Collective Bargaining	5	.832
1.2	Competence of the Parties of the Collective Bargaining	4	.771
1.3	Management Support	4	.673
1.4	Collective Bargaining Agreement	4	.661
1.5	Strong Trade Union	4	.721
2	Industrial Relation Environment	8	.751
3	Conditions for The Success of Collective Bargaining	8	.873
4	Problems of Collective Bargaining	7	.741
5	Industrial Relation Environment	8	.784

Variables of the Research

Based on the review of literature, the following variables are identified in the present study:

Independent Variables

- Collective Bargaining Process

Dependent Variables

- Industrial Relation Environment

Data Analysis

The data collected through the questionnaire was analysed using the SPSS 21.0 software. Researcher has used descriptive statistics, frequency analysis, exploratory factor analysis, correlation analysis, Anova, and multiple regression analysis is used in order to examine the relationship between constructs and test the hypotheses accordingly.

ANALYSIS AND DISCUSSION

Table 4Category of Respondents

Category of Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employees	400	87.0	87.0	87.0
	Management Personnel	60	13.0	13.0	100.0
	Total	460	100.0	100.0	

Based on Table 4, it is inferred that majority of respondents are 400(87%) are employees and 60 (13%) are managerial personnel.

Table 5 Trade Union Status

Trade Union Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unionised Member	300	75.0	75.0	75.0
	Non-Unionised Member	100	25.0	25.0	100.0
	Total	400	100.0	100.0	

Table 5 illustrated the trade union status of the respondents, out of 400 respondents' majority of are unionized member 300 (75%) and rest of 100 respondents (25%) are non-unionized member.

Factor Analysis - Dimensions of collective bargaining

The study tries to identify the various dimensions of collective bargaining in public utility services and influence on the industrial relation environment. In the present study, exploratory factor analysis was conducted on the 21 statements in the questionnaire relating to collective bargaining. Exploratory factor analysis is used to explore the underlying structure of a relatively large set of variables. In order to predict the sampling adequacy, a measure called Kaiser-Meyer-Olkin test is used.

As mentioned in the Table 6, the KMO "measure of sampling adequacy" was 0.934 which is higher than 0.5. This signifies that in the present study, the sample size was found to be sufficient to move ahead for factor analysis. The Bartlett's test of sphericity is used to examine whether the correlation matrix is identity matrix or not. Analysis is performed using SPSS. This test was also found to be significant and was justified through the test results presented in Table 17 which prove that variables within factors are correlated (sig. = 0.000) and also proved that the factor model was appropriate.

Table 6 KMO and Bartlett's Test for Collective bargaining

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.879
Bartlett's Test of Sphericity	16055.201	31153.111
	210	630
	.000	.000

Principal Component Analysis

An analysis was then done to establish component score coefficients, component loading and communality. Data in Table 8 shows all components extracted from the analysis along with their component score coefficients, rotated component loading and communalities. The values of the loading and corresponding components indicate correlations between variables and corresponding components.

A total of 21 statements were used in the questionnaire to find out the dimensions of collective bargaining. The Varimax with Kaiser Normalisation method of rotation was used on running the factor analysis, the results converged on 5 iterations.

Table 7 Total Variance Explained in the Factor Analysis for collective bargaining

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.858	32.658	32.658	6.858	32.658	32.658	4.777	22.747	22.747
2	4.589	21.853	54.510	4.589	21.853	54.510	3.892	18.535	41.281
3	3.493	16.635	71.145	3.493	16.635	71.145	3.750	17.859	59.141
4	2.998	14.276	85.421	2.998	14.276	85.421	3.610	17.191	76.332
5	1.157	5.510	90.932	1.157	5.510	90.932	3.066	14.600	90.932
6	.335	1.596	92.528						
7	.285	1.356	93.884						
8	.270	1.286	95.170						

9	.204	.971	96.141					
10	.182	.868	97.009					
11	.178	.848	97.857					
12	.114	.542	98.399					
13	.068	.323	98.721					
14	.060	.285	99.006					
15	.046	.220	99.227					
16	.043	.206	99.432					
17	.031	.150	99.582					
18	.028	.134	99.717					
19	.026	.122	99.839					
20	.022	.107	99.945					
21	.011	.055	100.000					

Extraction Method: Principal Component Analysis.

Component Matrix

Five factors have been extracted from component matrix which have Eigen values of more than one. The Principal Component Analysis has been used for factor analysis. The resultant factor loadings and the associated communalities resulted in the extraction of 5 components. The factor loadings signify the variance in collective bargaining described by a component factor on both unique and common contribution basis. Communality represents “the sum of squares of the factor loadings of the variable on all factors” (Malhotra, 2006). Thus, communality may indicate the reliability of the dimensions related to collective bargaining. From the data it could be seen that there were five factors with Eigen values exceeding 1.

The Eigen values after rotation are 6.85, 4.58, 3.49, 2.99 and 1.15. The total variance percentage which is used as an index to determine how well the factor analysis accounts for different variables together represents a total of 90.932percent.

Further, the 21-variables relating to collective bargaining are grouped under five extracted factors. The first factor consists of 5 variables, the second factor consists of 4 variables, the third factor consists of 4 variables, the fourth factors consist of 4 variables and the fifth factor consists of 4 variables. The loading criteria for factors have been taken to be more than 0.5 in the present study. The factor loading of less than 0.5 has not been displayed because the researcher has given instruction in SPSS analysis to suppress them. Although in general factor loading of 0.5 or above are considered but in case of more than 30 variables, the researcher has we can go for a factor loading of 0.4 (Field, 2005).

It can be concluded that there are five factors extracted from the 21 variables are explaining about 90.932 percent of the variance in the 21 statements relating to collective bargaining in public utility services. The factors were labelled according to the variables under them (based on loading).

Table 8 Rotated Component Matrix

Rotated Component Matrix ^a					
	Component				
	1 Fairness and Good Faith in Collective Bargaining	2 Collective Bargaining Agreement	3 Strong Trade Union	4 Management Support	5 Competence of the Parties of Collective Bargaining
In this organization negotiations take place in an atmosphere of good faith	.931				
Bargaining in good faith by both	.874				

employers and unions.					
The collective agreement is regarded as fair by employees in this organization	.878				
The process of bargaining is free from unfair practice.	.851				
Concern for other parties' view point	.871				
Members are Professionally qualified.					.817
Members are having sufficient working experiences					.825
Members are having good Negotiation skill					.821
Members are having good Communication skill					.840
Willingness of management to Negotiate				.981	
Problem Solving Attitude of management				.945	
Employer have a positive view on collective bargaining.				.965	
Respecting commitments made, and implementing collective agreements once concluded.				.887	
Signing the minutes of the meeting on the agreed issues		.989			
Conferring legal validity and legitimacy on collective agreements		.972			
Disseminating the bargaining results widely and publicly		.989			
Implementation of agreed terms		.967			
Unanimity among workers			.960		
Representative of Trade Union			.980		
Independence of Trade Union			.979		
Union and management have respect for each other's goals			.927		
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 5 iterations.					

Table 9 Labelling of collective bargaining dimensions

S. No.	Factor Name	Initial Eigen Value	% variance
1	Fairness and Good Faith in Collective Bargaining	6.858	32.658
2	Collective Bargaining Agreement	4.589	21.853
3	Strong Trade Union	3.493	16.635
4	Management Support	2.998	14.276
5	Competence of the Parties of Collective Bargaining	1.157	5.510

Factor Analysis – Industrial Relation Environment.

Exploratory factor analysis was applied to industrial relations environment variables to identify components underlying the variables. An analysis was then done to establish component score coefficients, component loading and communality. Data in Table 3 shows all components extracted from the analysis along with their component score coefficients, rotated component loading and communalities.

The values of the loading and corresponding components indicate correlations between variables and corresponding components. As shown in Table 3, it is apparent that the following variables are substantially loaded on component 1, union and management cooperate well, Management and union resolve disputes amicably, Management’s attitude towards the union is favourable, Management and union share information freely. This suggests that these four variables define component 1. On the other hand, Mutual regard between management and the union exists, Union and management are willing to confer, Management facilitates union operations and Union participates in decision making are highly loaded on component 2 hence they define component 2. These two components explain the industrial relations environment.

Table 10 Result of Factor Analysis on Industrial Relations Environment Variables

Rotated Component Matrix^a		
	Component	
	1	2
Union and management cooperate well	.994	.
Mutual regard between management and the union exists		.913
Union and management are willing to confer		.895
Management facilitates union operations		.922
Union participates in decision making		.883
Management and union resolve disputes amicably	.975	
Management’s attitude towards the union is favourable	.994	
Management and union share information freely	.988	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 3 iterations.		

Table 11 Labelling of collective bargaining dimensions

S. No.	Factor Name	Initial Eigen value	% variance
1	Union-Management Support	3.972	49.648
2	Mutual Respect	3.213	40.167

The values of communalities show how much of the variance in the variable has been accounted for by extracted factors. Table 10 shows that communality for management attitude towards the union is favourable was 79.3%, indicating that 79.3% of variance in management attitude towards the union is accounted for by Component 1 and 2. Similarly, 80% of the variance in management and union share information freely was accounted for by Component 1 and 2. Analysis of total variance was then done to determine the proportion of variance in the set of variables.

Table 10 and 11 shows all components extracted from the analysis along with their Eigenvalues, the percentage of variance attributed to each component, and the cumulative variance of the component and the previous components. The table 12 indicates that two out of eight components had Eigen values greater than 1. In addition, the table 12 shows that the first component accounts for 49.65% of the variance in the variables and the second component 40.16%. All the remaining components are not significant. The two selected components explained 89.81% of the total variation of the variables in industrial relations environment. Component score coefficients in Table 12, were used to obtain component

score values. The mean scores of component score values for the retained two components were then used as dependent variable (Y) in regression analysis to determine the effect of independent variables on industrial relations environment.

Table 12 Total Variance Explained for Industrial Relation environment

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.972	49.648	49.648	3.972	49.648	49.648	3.918	48.969	48.969
2	3.213	40.167	89.815	3.213	40.167	89.815	3.268	40.846	89.815
3	.305	3.811	93.626						
4	.232	2.896	96.522						
5	.187	2.338	98.860						
6	.069	.859	99.719						
7	.016	.202	99.921						
8	.006	.079	100.000						

Extraction Method: Principal Component Analysis.

Table 13 Correlations Matrix between collective bargaining & industrial relation environment

		Industrial Relation Environment
Fairness and Good Faith in Collective Bargaining	Pearson Correlation	.911**
	Sig. (2-tailed)	.000
	N	460
Competence of the Parties of the Collective Bargaining	Pearson Correlation	.884**
	Sig. (2-tailed)	.000
	N	460
Management Support	Pearson Correlation	.876**
	Sig. (2-tailed)	.000
	N	460
Collective Bargaining Agreement	Pearson Correlation	.910**
	Sig. (2-tailed)	.000
	N	460
Strong Trade Union	Pearson Correlation	.903**
	Sig. (2-tailed)	.000
	N	460

The Pearson correlation matrix highlights that there is a strong and positive significant correlation exist among the dependent variables (Industrial Relation Environment) and independent variables such as Fairness and Good Faith in Collective Bargaining (r=0.91), Competence of the Parties of the Collective Bargaining(r=0.88),Management Support (r=0.87), Collective Bargaining Agreement (r=0.91)and Strong Trade Union (r=0.90) respectively. The results are significant at 0.01 and 0.05 percent significant level.

Result of multiple Regression Analysis

Multiple Regression analysis was performed to determine the effect of collective bargaining on industrial relations environment. In regression analysis, the component mean score values for retained two components of industrial relations environment were regressed against the various component mean score values of the retained components of collective bargaining process.

A multivariate regression model was used to determine the relative importance of each of the six variables in respect to perceived overall Quality of work life.

The Multiple regression model for the study was

$$Y=f(x) \text{----- (1)}$$

$$Y_i = \beta_0 + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 \dots + \beta X_n + \varepsilon \text{----- (2)}$$

Where Y= Dependent variable is Industrial Relation Environment

X= Independent variables whereby as measured by the various dimensions of collective bargaining i.e.

X1= Fairness and Good Faith in Collective Bargaining,

X2= Competence of the Parties of the Collective Bargaining,

X3= Management Support,

X4= Collective Bargaining Agreement

X5= Strong Trade Union

β_0 = Constant term

β_0 = Gradient/Slope of the regression measuring the amount of the change in Y associated with a unit change in X

ε = Error term within a confidence interval of 5%.

In order to assess whether the regression suffers from the problem of multicollinearity, the variance inflation factor (VIF) was calculated. As indicated in Table 16, all VIF values are between 5 to 9 which is less than the acceptable value 10, indicating there is no multicollinearity problem in the model.

Table 14 Model summary of collective bargaining dimensions

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.936 ^a	.876	.874	.47581	1.789
a. Predictors: (Constant), Strong Trade Union, Management Support, Competence of the Parties of the Collective Bargaining, Collective Bargaining Agreement, Fairness and Good Faith in Collective Bargaining					
b. Dependent Variable: Industrial Relation Environment					

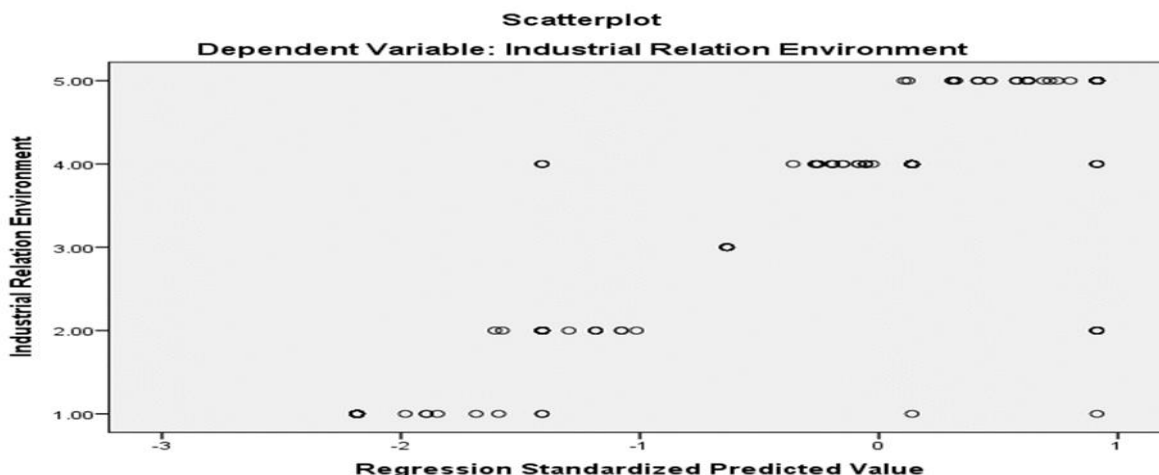
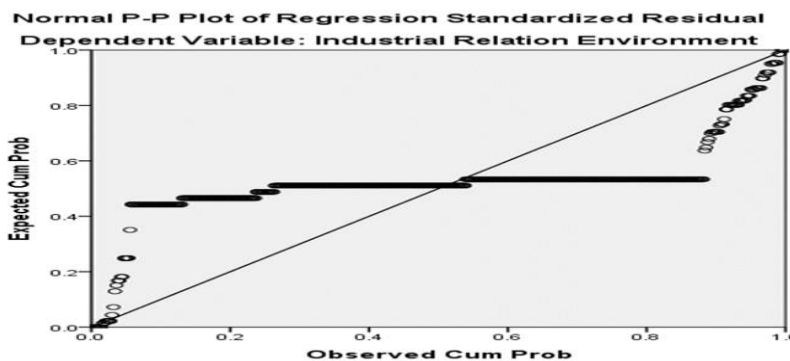
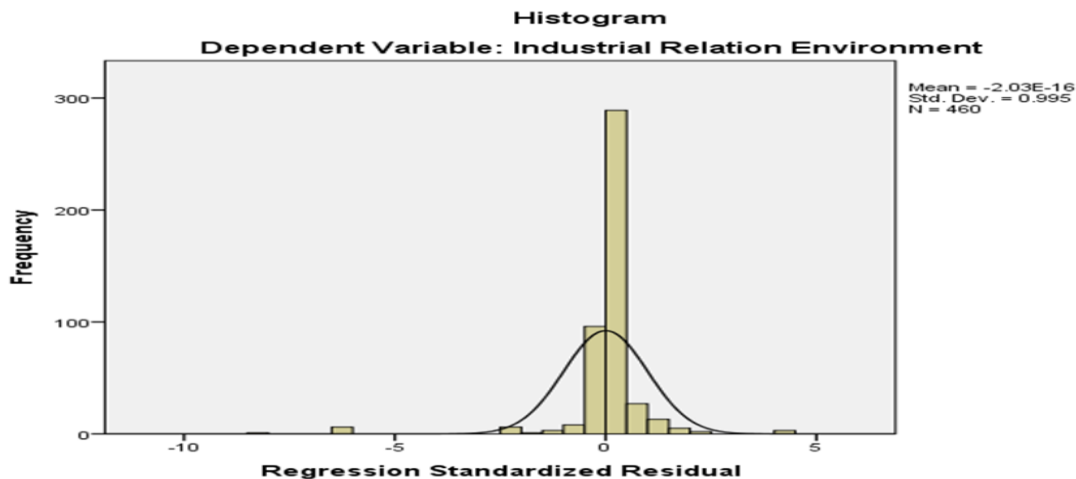
Table 15 ANOVA test for Collective Bargaining Dimensions

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	725.140	5	145.028	640.605	.000 ^b
	Residual	102.782	454	.226		
	Total	827.922	459			
a. Dependent Variable: Industrial Relation Environment						
b. Predictors: (Constant), Strong Trade Union, Management Support, Competence of the Parties of the Collective Bargaining, Collective Bargaining Agreement, Fairness and Good Faith in Collective Bargaining						

Table 16 Coefficients of collective bargaining dimensions

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.096	.070		1.375	.170		
	Fairness and Good Faith in Collective Bargaining	.254	.053	.254	4.784	.000	.097	7.308
	Competence of the Parties of the Collective Bargaining	.141	.044	.140	3.236	.001	.145	6.882

Management Support	.121	.041	.122	2.961	.003	.160	6.235
Collective Bargaining Agreement	.248	.053	.247	4.701	.000	.099	8.124
Strong Trade Union	.209	.050	.208	4.186	.000	.110	9.064
a. Dependent Variable: Industrial Relation Environment							



The multiple correlation coefficient (R) 0.936 measures the degree of correlation relationship between the dependent variable and independent variables. Because the predicted values are obtained as a linear combination of collective bargaining dimensions. The coefficient value (R) of 0.994 indicates that the relationship between adjustment and the five independent variables is quite strong and positive.

The Coefficient of Determination R-square (R^2) measures the goodness-of-fit of the estimated Sample Regression Plane (SRP) in terms of the proportion of the variation in the dependent variables explained by the fitted sample regression equation. The effectiveness or reliability of the relationship is obtained by R^2 . Thus, the value of **R square** 0.874 simply means that 87.4% of the variation in dependent variable (Y) is explained by the estimated SRP by collective bargaining dimension and R square value is significant at 1 % level.

The F-ratio of 640.605 ($p=0.00$) indicated that the regression model of influence of collective bargaining on industrial relation environment variable assessed was statistically significant (see ANOVA table 15).

Regression coefficient

The multiple regression equation is $Y=0.096+0.254X_1+0.140X_2+0.122X_3+0.247X_4+0.208X_5$

From the table 14, it is indicating that the co-efficient of Fairness and Good Faith in Collective Bargaining ($\beta=0.254$), Competence of the Parties of the Collective Bargaining ($\beta=0.140$), Management Support ($\beta=0.122$), Collective Bargaining Agreement ($\beta=0.247$) and Strong Trade Union ($\beta=0.208$) are positively associated with industrial relation environment. Further, the analysis demonstrated that the most significant effect on industrial environment relation are Fairness and Good Faith in Collective Bargaining ($\beta=0.254$), Collective Bargaining Agreement ($\beta=0.247$) and Strong Trade Union ($\beta=0.208$) are strongly influence on industrial relation environment.

Table 17 Top Five Conditions for the Success of Collective Bargaining

S.No	Success of Collective Bargaining	Total Score	Number of respondents	Average Score	Rank
1	problem solving attitude of both parties	35750	460	77.72	1
2	Constructive consultation between the trade union and the management	31845	460	69.23	2
3	Conferring legal validity and legitimacy on collective agreements	26760	460	58.17	3
4	Recognize representative union	24685	460	53.66	4
5	The process of bargaining should be free from unfair practice	22620	460	49.17	5
6	Bargaining in good faith by both employers and unions	18760	460	40.78	6
7	Unanimity among workers	14924	460	32.44	7
8	Availability of Data	9150	460	19.89	8

The above table 17 divulged the opinion of employees and managerial personnel towards top five conditions for success of collective bargaining are “problem solving attitude of both parties” was ranked first with a Garrett score of 35750points (Mean = 77.72) in public utility services. It is followed by “Constructive consultation between the trade union and the management” with a Garrett score of 31845 points (Mean =69.23). The third rank goes to “Conferring legal validity and legitimacy on collective agreements” with a Garrett score of 26760points (Mean=58.17) and “Recognize representative union” was in the fourth place with a Garrett score of 24685points (Mean=53.66) and the fifth rank occupies by the “The process of bargaining should be free from unfair practice” with a Garrett score of 22620points (Mean=49.17).

Table 18 Top Five Problems/reasons of Unsuccessful of Collective Bargaining

S.No	Problems of Unsuccessful of Collective Bargaining	Total Score	Number of respondents	Average Score	Rank
1	Multiple union	34564	460	75.14	1
2	Excessive Dependence on Adjudication	31854	460	69.25	2
3	No-legal validity and legitimacy on collective agreements	25660	460	55.78	3

4	Non-recognition of representative union	24633	460	53.55	4
5	Little management support	22645	460	49.23	5
6	Reduction in the Area of Collective Bargaining	18565	460	40.36	6
7	Reduction in the Area of Collective Bargaining	14930	460	32.46	7
8	Defective Laws	9170	460	19.93	8

The above table 18 present the top five problems/reasons for unsuccessful of collective bargaining perceived by the both employees and managerial personnel are. Among eight problems/reasons for failure of collective bargaining process in public utility services are “existence of multiple union ” was ranked first with a Garrett score of 34564 points (Mean=75.14) followed by “Excessive Dependence on Adjudication” with a Garrett score of 31854 points (Mean=69.25). The third rank goes to “No-legal validity and legitimacy on collective agreements” with a Garrett score of 25660 points (Mean=55.78) and “non-recognition of representative union” was in the fourth place with a Garrett score of 24633 points (Mean=53.55) and the fifth rank occupies by the “Little management support “with a Garrett score of 22645 points (Mean=49.23).

Conclusion

The Public utilities are facing certain problems in the current times such as organization of these industries, their management, infrastructure and pricing policy, trade union problem and industrial dispute ; as these industries produce on a large scale, it is difficult to tackle these problems. The provision contained under the Industrial Disputes Act, 1947 is outdated in nature and methods use to resolve industrial dispute in public utility services are not sufficient. collective bargaining is most suitable methods of prevention of industrial dispute and promotion of industrial peace.

On the basis of these findings, it is evident that collective bargaining process had a positive significant effect on industrial relations environment in public utility services in India. The results therefore confirm the validity of the premise that collective bargaining process has a significant effect on industrial relations environment. The study demonstrated that major condition for successful collective bargaining is problem solving attitude of both parties, Constructive consultation between the trade union and the management, conferring legal validity and legitimacy on collective agreements, recognize representative union and the process of bargaining should be free from unfair practice. The study therefore reaffirms that understanding how parties handle collective bargaining process, is very critical in determining industrial relations environment in organisations.

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