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An Assessment of Human Resource Planning and Workforce Management Practices at Jindal Steel Limited: A Study of The Machinery & Equipment Division, Raipur

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Abstract

Strategic tasks like workforce management and human resource planning (HRP) have a big impact on organisational performance, worker productivity, and operational efficiency, especially in the manufacturing and engineering sectors. Maintaining operational continuity in industrial organisations requires the availability of suitably skilled workers, efficient manpower allocation, competency-based deployment, ongoing skill development, and performance monitoring.

The current study looks at workforce management and human resource planning procedures at Jindal Steel Limited's Machinery & Equipment Division in Raipur, Chhattisgarh. The study focuses on three main areas: interdepartmental coordination and workforce management difficulties; staff utilisation, competency development, and performance management; and manpower planning and recruitment procedures.

Based on published reports, secondary organisational data, and pertinent scholarly literature, the study takes a descriptive and analytical approach. To comprehend Jindal Steel Limited's overall aims for workforce management and human resource development, the publicly accessible FY 2024–2025 organisational workforce metrics are analyzed. Workforce composition, training coverage, and skill development programs are all examined using percentage analysis and comparative interpretation. To preserve analytical accuracy, division-specific data is separated from organization-wide metrics.

The study emphasizes how crucial it is to strategically integrate manufacturing requirements with personnel forecasting, competency mapping, training interventions, and performance evaluation. It also highlights the necessity of technology-enabled workforce management tools, good communication between HR and operational divisions, and ongoing workforce assessment. The study offers suggestions for improving organisational performance, employee competencies, and workforce utilisation in industrial production settings.

Keywords: Jindal Steel Limited; Human Resource Planning; Workforce Management; Manpower Planning; Employee Deployment; Competency Mapping; Training and Development; Employee Productivity.

1. INTRODUCTION

For businesses working in a more technologically advanced and competitive business environment, human resources are a critical strategic asset. Organisational effectiveness in manufacturing sectors is dependent on the availability and efficient use of skilled human resources in addition to production infrastructure, capital investment, and technology innovation. The methodical process of determining current and future labour needs and guaranteeing the availability of suitable workers with the required training, expertise, and skills is known as human resource planning. Workforce assessment, supply analysis, demand forecasting, manpower gap detection, hiring, selection, and employee development are all part of it.

By guaranteeing that available workers are effectively distributed throughout organisational roles, workforce management enhances human resource planning. Allocating employees, managing shifts, keeping track of attendance, evaluating performance, developing skills, and coordinating across divisions are all included. Workforce planning becomes especially important in engineering and manufacturing companies since various operational tasks call for certain technical skills. Workers with the necessary technical training and real-world experience are needed for tasks like fabrication, welding, machining, engineering, maintenance, quality assurance, and equipment handling.

The Machinery & Equipment Division of Jindal Steel Limited, situated in Raipur, Chhattisgarh, is involved in the production of industrial equipment. Fabrication facilities, automated welding systems, and heavy equipment handling capabilities are all part of its manufacturing infrastructure. These operational features emphasize the significance of competency-based personnel deployment and suitable manpower planning (Jindal Steel Limited, n.d.). The firm can maintain a suitable balance between personnel availability, technological requirements, and production commitments with the help of human resource planning. In a similar vein, effective workforce management may enhance overall productivity, workplace safety, operational coordination, and personnel utilisation.

2. STATEMENT OF THE PROBLEM

Manufacturing companies work in a setting where production needs are always evolving, technology is advancing, specialized skills are needed, and operational efficiency is becoming more and more important. In these situations, poor manpower planning may lead to underutilization of workers, excessive workloads, skill mismatches, workforce shortages, and operational delays. Jindal Steel Limited's Machinery & Equipment Division needs workers with a variety of operational and technical skills for both its manufacturing and support roles. As a result, it becomes crucial to look at how manpower needs are determined, how workers are assigned based on their skills, and how performance management and training affect workforce effectiveness.

Understanding the connections between interdepartmental coordination, workforce utilisation, employee development, and human resource planning in an industrial manufacturing setting is the goal of this study.

3. OBJECTIVES OF THE STUDY

1. To investigate the idea, importance, and methods of workforce management and human resource planning used by Jindal Steel Limited, Raipur, including manpower estimation, hiring, selection, and staff deployment.

2. To examine departmental allocation, competency-based deployment, training and development programs, and performance evaluation in relation to employee utilisation and development methods.
3. To determine the main obstacles in workforce management and human resource planning, as well as to evaluate the efficacy of interdepartmental collaboration in raising worker productivity and organisational efficiency.

4. REVIEW OF LITERATURE

4.1 Strategic Human Resource Management

Wright and McMahan (1992) In their discussion of the theoretical underpinnings of strategic human resource management, Wright and McMahan (1992) emphasized the significance of fusing organisational strategy with human resource practices. Their research offers a theoretical framework for comprehending how workforce competencies support long-term organisational success.

4.2 Human Resource Management and Manufacturing Performance

Youndt et al. (1996) investigated the connection between industrial strategy, organisational performance, and HRM practices. They found that human resource enhancement methods are linked to operational success, especially when they are in line with manufacturing strategy, based on data from manufacturing plants.

4.3 Employee Competency and Workforce Development

Employee competencies must be identified and developed for effective workforce management. Organisations can better match hiring, training, performance reviews, and career development with organisational needs by using competency-based HR strategies. The connection between competency development, integrated HR practices, and talent development is further highlighted by recent study on competency-based HR roles in Indian manufacturing firms.

4.4 Training and Development in Manufacturing Organizations

Enhancing workers' technical expertise, operational skills, and workplace safety requires training and development. To handle technical advancements, new technology, and changing production needs, manufacturing companies need ongoing staff development. A recent study by the authors of staff Training Strategies and Performance Assessment in Manufacturing Environments (2025) emphasizes how crucial it is to evaluate training results and match staff development plans with operational needs.

4.5 Research Gap

The literature review demonstrates the significance of workforce management, employee competency development, and strategic HR planning in manufacturing companies. The relationship between these practices and manpower forecasts, staff deployment, training, performance evaluation, and departmental coordination in specialized machinery manufacturing environments still must be evaluated on an organization-specific basis.

In order to fill this contextual gap, the current study uses known HRM frameworks and organisational data to examine the Machinery & Equipment Division of Jindal Steel Limited, Raipur.

5. RESEARCH METHODOLOGY

5.1 Research Design

A descriptive and analytical research design is used in the study. While the analytical technique looks at existing workforce indicators and their implications for organisational effectiveness, the descriptive approach is utilized to comprehend workforce management practices and human resource planning.

5.2 Nature and Sources of Data

The study uses secondary data obtained from:

- Jindal Steel Limited's Integrated Annual Report FY 2024–25.
- Jindal Steel Limited's Sustainability Report FY 2024–25.
- Official information relating to the Machinery & Equipment Division.
- Published academic research papers and books on Human Resource Management.
- Relevant literature concerning workforce planning, employee productivity and competency development.

5.3 Sampling and Primary Data

A sample of fifty respondents, including workers, managers, and other staff members, was recommended in the first research proposal. Nevertheless, the accessible research data did not contain completed primary survey replies. As a result, the current secondary-data study does not purport to reflect the opinions of fifty employees. Convenience sampling may be used, with organisational approval, to gather responses from 50 employees and supervisors for a longer empirical study.

5.4 Tools of Data Analysis

The following techniques are appropriate for the study:

- Frequency distribution.
- Percentage analysis.
- Comparative analysis.
- Tabulation and graphical presentation.
- Descriptive and interpretative analysis.

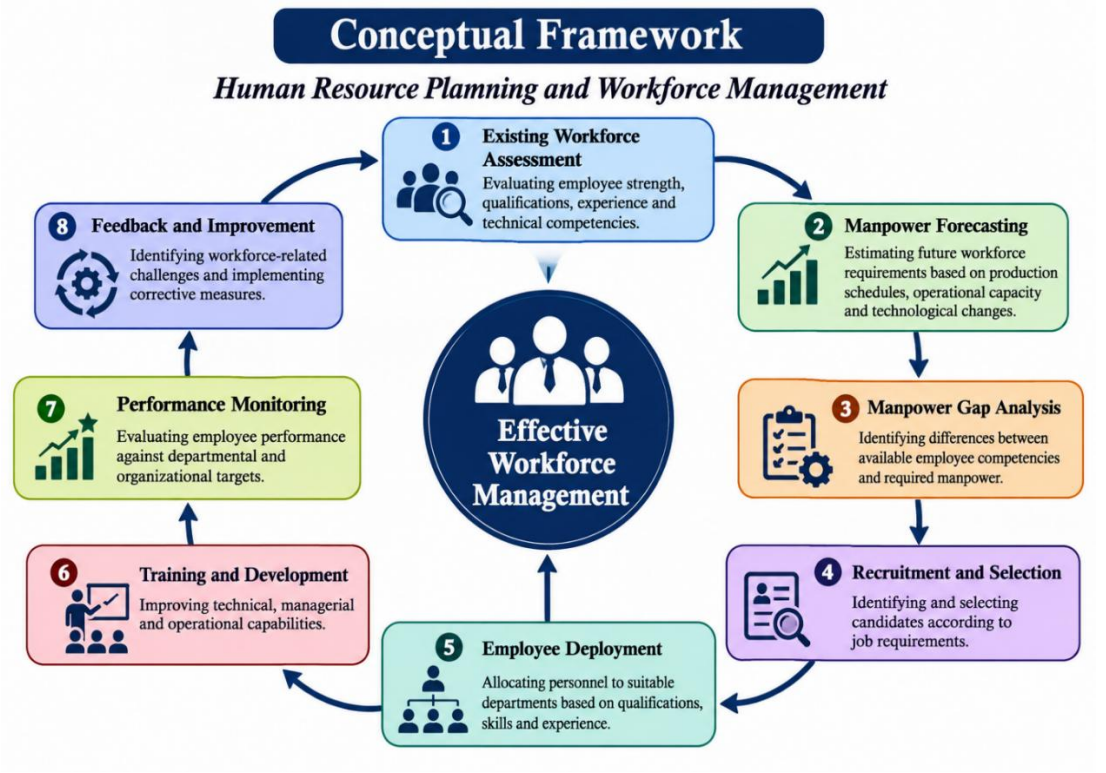
Percentage is calculated as:

Percentage = (Number of observations / Total observations) × 100

5.5 Scope of the Study

The study focuses on labour management and human resource planning at Jindal Steel Limited's Machinery & Equipment Division in Raipur. Manpower planning, hiring, personnel deployment, competency development, training, performance evaluation, and interdepartmental cooperation are some of its main focuses. The analysis's publicly accessible workforce numbers are not division-specific; rather, they pertain to Jindal Steel Limited at the organisational level.

6. CONCEPTUAL FRAMEWORK



7. DATA ANALYSIS AND INTERPRETATION

7.1 Objective 1: Human Resource Planning, Manpower Estimation, Recruitment and Employee Deployment

To guarantee the availability of suitable personnel for organisational operations, human resource planning is crucial. Production schedules, technical specifications, project needs, and the skills required for various operational tasks all influence the amount of labour needed in the manufacturing of machines. The Machinery & Equipment Division of Jindal Steel Limited uses automated welding systems, fabrication facilities, and heavy equipment handling capabilities as part of its specialized production infrastructure. These traits highlight the significance of competency-based staffing and technical workforce planning.

Table 1: Overall Workforce Composition of Jindal Steel Limited

Workforce Category	FY 2024–25	FY 2023–24
Employees	8,077	8,499
Workers	2,655	2,808
Total	10,732	11,307

Source: Jindal Steel Limited, Integrated Annual Report FY 2024–25.

Interpretation:

During FY 2024–2025, there were 8,077 employees and 2,655 workers, for a total workforce of 10,732. For FY 2023–2024, the corresponding number was 11,307. During the reporting period, the total workforce

decreased by almost 5.08%. This shift suggests that the organization's claimed worker strength varies. It cannot, however, objectively determine if the change was brought about by personnel turnover, operational needs, restructuring, or other factors. The results highlight the significance of routine manpower assessment and forecasting from the standpoint of the Machinery & Equipment Division in order to preserve a suitable balance between staff availability and operational requirements.

7.2 Objective 2: Employee Utilization, Competency Development, Training and Performance Evaluation

The proper distribution of labour in accordance with credentials, experience, and job-related competencies determines employee utilisation. For manufacturing companies to ensure production quality, worker safety, and operational efficiency, technical training and performance monitoring are crucial.

Table 2: Training Coverage of Employees – FY 2024–25

Category	Total Workforce	Health and Safety Training	Skill Upgradation
Employees	8,077	7,609 (94.21%)	7,113 (94.90%)
Workers	2,655	2,479 (93.37%)	4,010 (93.37%) *

Source: Jindal Steel Limited, FY 2024–25 Business Responsibility and Sustainability Report. The worker skill-upgradation count and percentage are reproduced from the published table; the underlying denominator and count require verification before further statistical use.

Interpretation:

According to available organisational data, during FY 2024–2025, 93.37% of workers and 94.21% of employees attended health and safety training. Employee and worker skill-upgradation coverage was reported to be 94.90% and 93.37%, respectively. These metrics show how important worker development and workplace safety are to the company. The results are especially pertinent to the manufacturing of machinery, as workers must have both operational and technical expertise in order to carry out certain tasks effectively and safely. However, the real training coverage of personnel working especially in the Raipur Machinery & Equipment Division is not established by the company-wide data that is currently accessible.

Table 3: Workforce Composition by Employment Category

Category	FY 2024–25	FY 2023–24
Permanent Employees	5,545	5,938
Contractual Employees	2,532	2,561
Total Employees	8,077	8,499
Permanent Workers	373	433
Contractual Workers	2,282	2,375
Total Workers	2,655	2,808

Source: Jindal Steel Limited, Integrated Annual Report FY 2024–25.

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Interpretation:

The presence of both contract and permanent employees within the company is shown by the workforce composition. This emphasizes how crucial efficient coordination, task distribution, skill evaluation, and safety management are across many job categories. Appropriate manpower planning for the Machinery & Equipment Division should guarantee that contract workers and employees have the necessary technical skills and get pertinent operational and safety training.

7.3 Objective 3: Workforce Challenges, Interdepartmental Coordination and Organizational Efficiency

Continuous collaboration between HR staff, production managers, engineering teams, maintenance departments, and other operational departments is necessary for human resource planning in manufacturing organisations.

The following are the main workforce management issues that need to be addressed by managers:

1. Modifications in labour needs brought on by project-based activities and production schedules.
2. A lack of skills due to evolving mechanical requirements and technological advancements.
3. The effects of employee absenteeism on labour availability.
4. HR and technical department coordination.
5. Ongoing competency development and training requirements.
6. Risk management and workplace safety.
7. Retaining knowledgeable and experienced staff members.

Workforce safety and well-being, skill and capability development, open communication, and employee performance and growth are identified as critical stakeholder engagement areas in Jindal Steel Limited's publicly available R.I.S.E. framework.

Interpretation:

These organisational priorities highlight how crucial it is to incorporate communication, workplace safety, and staff development into workforce management. Interdepartmental cooperation is especially crucial in the Machinery & Equipment Division since manufacturing operations rely on the prompt availability of technical staff, suitable equipment, maintenance support, and quality assurance. According to the report, employee numbers alone should not be used to evaluate workforce efficiency. The availability of skills, the efficacy of training, employee deployment, absenteeism, productivity, and departmental cooperation should all be taken into account. These are significant dimensions for additional research, according to the current secondary-data analysis. Employee surveys and management interviews would be necessary to determine the actual division-specific difficulties and their frequency.

8. MAJOR FINDINGS OF THE STUDY

The following conclusions are drawn from conceptual analysis and the organisational data that is currently available:

1. In order to retain a suitable staff in specialized industrial activities, human resource planning is a crucial managerial responsibility.
2. In FY 2024–2025, Jindal Steel Limited reported having 10,732 workers overall.
3. A significant organisational emphasis on workplace safety and skill-upgrading training is seen in the reported workforce data.

4. When it comes to industrial tasks that call for specialized technical expertise, competency-based staff deployment is crucial.
5. The existence of both contractual and permanent worker categories emphasizes the necessity of uniform safety procedures and integrated workforce coordination.
6. Training and development should be in line with evolving operational needs and manufacturing technologies.
7. Individual performance and departmental productivity metrics should be included in performance monitoring.
8. Managing labour needs and preserving production continuity need effective communication between HR and operational units.
9. To determine the true efficacy of manpower planning and employee deployment at the Raipur site, division-specific workforce data is needed.

9. SUGGESTIONS AND RECOMMENDATIONS

Based on the analytical assessment, the following recommendations are proposed:

1. Regular Evaluation of Manpower: Based on production schedules, departmental needs, and future operational objectives, the company should regularly evaluate its workforce.
2. Employee Deployment Based on Competencies: Workers should be assigned tasks based on their training, experience, technical proficiency, and job-specific skills.
3. Ongoing Education and Training: Employees and contract workers should get regular technical, operational, and occupational safety training.
4. Improving Coordination Across Departments: To determine personnel needs and handle workforce-related concerns, the HR Department should keep in regular contact with the manufacturing, engineering, maintenance, and quality control departments.
5. Workforce Evaluation Based on Performance: Employee productivity, work quality, attendance, safety compliance, and skill development should all be taken into account in a systematic performance review system.
6. Workforce Management Using Technology: Competency databases, workforce planning tools, and digital attendance systems can enhance manpower monitoring and deployment choices.
7. Employee Input and Resolution of Grievances: To enhance employee engagement and workplace relations, regular feedback systems and open grievance procedures should be reinforced.
8. Career Development and Skill Improvement: Opportunities for technical upskilling, reskilling, career advancement, and professional development should be given to employees.
9. Safety and Occupational Health: Workforce management procedures should incorporate regular safety training, workplace inspections, risk assessments, and monitoring.

10. CONCLUSION

In the engineering and manufacturing sectors, workforce management and human resource planning play a significant role in determining organisational effectiveness. Operational efficiency and workforce productivity are influenced by the availability of suitably skilled personnel, efficient staff deployment, ongoing competency development, and methodical performance monitoring. This study looks at these aspects in relation to Jindal Steel Limited's Machinery & Equipment Division in Raipur. Workforce development, occupational safety, and

employee skill enhancement are crucial in the larger organisational environment, according to a review of publicly available organisational data.

The report also highlights the importance of integrating workforce planning with departmental competences, production requirements, and technological advancements. Organisational performance may be strengthened, staff utilisation can be increased, and timely personnel availability can be supported through effective collaboration between HR and operational departments. The conclusion is that rather than being just an administrative task, human resource planning should be seen as a strategic management function. Sustainable workforce development and operational excellence can be enhanced by a methodical approach to manpower forecasts, competency-based deployment, training, and performance management. However, primary responses from employees and supervisors as well as division-specific personnel statistics are necessary for a thorough empirical evaluation of the Machinery & Equipment Division. A more accurate assessment of the true efficacy of workforce planning and management techniques would be possible with this information.

11. LIMITATIONS OF THE STUDY

1. Publicly accessible secondary data and published organisational reports are the study's main sources.
2. It is not possible to directly extrapolate the workforce figures to the Machinery & Equipment Division because they pertain to Jindal Steel Limited at the organisational level.
3. The current analysis did not have access to primary survey responses from supervisors and employees.
4. In-depth departmental personnel records, hiring information, staff attrition, and productivity metrics were not accessible for outside review.
5. Therefore, rather than being a finished employee-level empirical study, the results should be viewed as an analytical evaluation based on the evidence that is now available.

Declaration of Conflicting Interests

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