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# A Study on Human Resource Practices and its Impact on Employee Job Performance in the Green Hydrogen and PEM Electrolyzer Sector

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**ABSTRACT:** Human Resource (HR) practices play an important role in improving employee motivation, satisfaction and job performance, particularly in technology-intensive and rapidly growing organizations. This study examines the HR practices and their impact on employee motivation in the green hydrogen and PEM electrolyzer sector, a company operating in the green hydrogen and PEM electrolyzer sector. The study focuses on recruitment and selection, onboarding, training and development, performance appraisal, compensation and benefits, employee communication, recognition and grievance handling. A descriptive research design was adopted, and primary data was collected from 150 employees using simple random sampling through a structured questionnaire. Secondary data was obtained from company-related sources and scholarly literature. The data collected were analyzed using Microsoft Excel and SPSS, with percentage analysis and Pearson correlation. The study reports a strong positive correlation ( $r = 0.943$ ,  $p = 0.000$ ) between HR/workplace factors and employee motivation, indicating a significant relationship. The findings show that employees generally have positive perceptions of HR practices, while improvements are required in appraisal transparency, reward linkage, compensation communication, career development and gender diversity. The study concludes that effective and transparent HR practices can strengthen employee motivation and support organizational performance.

## I. INTRODUCTION

A project report is a vital component of the MBA course that provides significant exposure and practical experience to students regarding organizational workplaces. The main aim of this project is to explore the chosen organization in detail, collecting comprehensive data about its business from various departments, aspects, and organizational functions. Through this project, a student's competency to effectively implement different concepts and models of organizational problem-solving will be greatly developed

## II. LITERATURE REVIEW

1. Amrita Sengupta in (2022) "Organizational lifestyle and Innovation performance in Renewable energy Startups" Researchers determined that renewable energy agencies with a clan lifestyle—characterized by using strong collaboration and a family-like ecosystem—executed far higher than their hierarchical opposite numbers in phrases of patent filings and the price at which new merchandise had been developed. The observer's primary locating is that, among cleantech agencies, personnel's perceptions of psychological protection had the greatest impact at the price of innovation.
2. Bharath Kumar N, (2023) "Worker Motivation in Capital-intensive manufacturing: a observe of Electrolyzer manufacturers" The observe's findings show that technical workers in the electrolyzer manufacturing industry are not very driven by using financial repayment as they may be by using possibilities to analyze extra about hydrogen technology, similarly their careers in the inexperienced financial system, and paintings in a trendy research and development facility.
3. Carlos Mendez (2021), "leadership styles and worker Retention in Deep-Tech organizations" Compared to transactional leadership, the research determined that imaginative and prescient-driven, intellectually attractive transformational leadership reduced turnover purpose in deep-tech organizations by using 34%. Whilst workers see how their efforts help cope with crucial worldwide problems, like weather change, they may be more likely to remain with the employer.

4. Divya Sharma in (2023.), The article "The position of protection lifestyle in Hydrogen production facilities" Results confirmed that operational uptime and worker morale had been correlated with a proactive protection lifestyle, in which personnel report close to-misses without fear, in line with this observe that analyzed six hydrogen facilities in Europe and India. Regulation fines, immoderate pressure stages, and worker absences are all results of a lackluster protection lifestyle.
5. Elena Volkov (2024, "pass-Cultural verbal exchange demanding situations in worldwide easy Tech agencies" Time region versions and cultural verbal exchange strategies (direct vs. oblique) purpose friction in firms with operations in the US, India, and Europe, corresponding to Ohmium. education in "cultural intelligence (CQ)" and the usage of asynchronous collaboration systems are investments in the future of the most successful agencies.
6. Farhan Ahmed (2022). "Motivating R&D Engineers in inexperienced Hydrogen: Intrinsic vs. Extrinsic factors" The results confirmed that, in evaluation to standard manufacturing strategies, intrinsic motivators (such as a sense of cause, autonomy, and mastery) had been three times extra effective than extrinsic incentives (such as bonuses) in maintaining hydrogen research and development engineers. However, aggressive pay is a hygiene difficulty that should be in vicinity to avoid discontent.

#### OBJECTIVES OF THE STUDY

- To study the Process of different HR practices at the company.
- Identify the factors influencing conduction of HR practices.
- To analyze the impact of HR practices on employee motivation.

#### III. RESEARCH METHODOLOGY

|              |                                                                                                                                                                                                                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Data | This survey asks people to rate their own motivation as well as aspects of organization tradition which include leadership, communication, protection, and innovation. established questionnaires could be used to gather information, so that you can then be assessed in a sequential fashion. |
| Secondary    | incorporates facts gathered from ohmium.com, LinkedIn, annual                                                                                                                                                                                                                                    |
| Data         | reports (if any), journals inside the field, white papers on developments inside the inexperienced hydrogen personnel, and scholarly articles about smooth electricity corporate subculture.                                                                                                     |

#### Sampling Technique

- Sampling Technique: Simple Random Sampling
- Sample Size: 150 employees (including engineers, technicians, managers, and support staff from Green hydrogen sector)
- Sampling Method: Simple Random Sampling (every employee has an equal chance of being selected)

#### Questionnaire Design

The questionnaire will be divided into three sections:

Section A: Personal Information (Age, Gender, Department, Experience, Location)

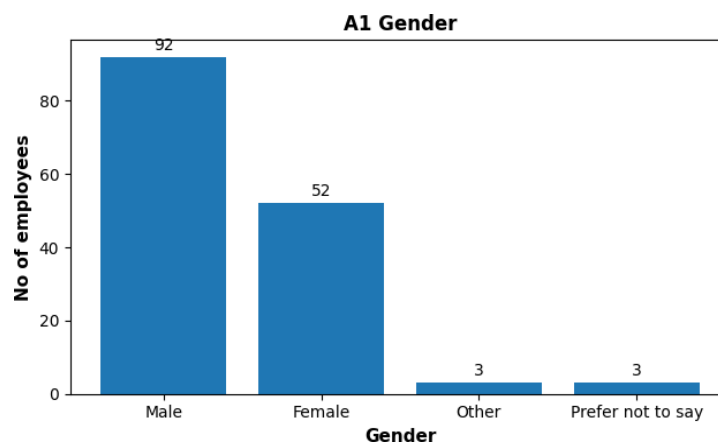
Section B: Workplace Culture Factors (20 questions on 5-point Likert scale: Strongly Dis-Agree (SD) to Strongly Agree(SA))

Section C: Employee Motivation & Open Suggestions

## IV. DATA ANALYSIS AND INTERPRETATION

Table 4.1: Table Represents Gender

| Gender            | Frequency | Percentage |
|-------------------|-----------|------------|
| Male              | 92        | 61.3%      |
| Female            | 52        | 34.7%      |
| Other             | 3         | 2.0%       |
| Prefer not to say | 3         | 2.0%       |
| Total             | 150       | 100%       |



**Analysis:** The chart for A1 Gender shows the distribution of responses among 150 employees. The highest responses were recorded in the category 'Male', indicating that most employees share similar views

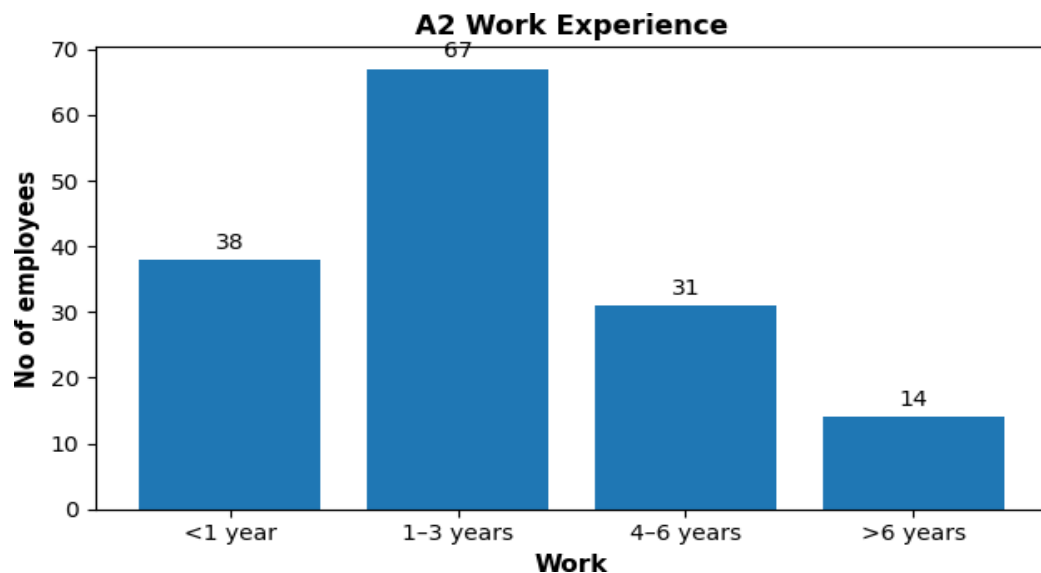
**Interpretation:** Regarding this aspect. The remaining categories received comparatively lower responses, showing moderate variation in opinions. Overall, the findings reveal a positive trend.

Table 4.2: Table Represents Work Experience at Ohmium Operation Private Limited

| Duration          | Frequency | Percentage |
|-------------------|-----------|------------|
| Less than 1 year  | 38        | 25.3%      |
| 1-3 years         | 67        | 44.7%      |
| 4-6 years         | 31        | 20.7%      |
| More than 6 years | 14        | 9.3%       |
| Total             | 150       | 100%       |

**Analysis** The chart for A2 Work Experience shows the distribution of responses among 150 employees. The highest responses were recorded in the category '1–3 years', indicating that most employees share.

**Interpretation:** The remaining categories received comparatively lower responses, showing moderate variation in opinions. Overall, the findings reveal a positive trend and suggest that employees are contented with the organizational practices and HR systems followed within the company.

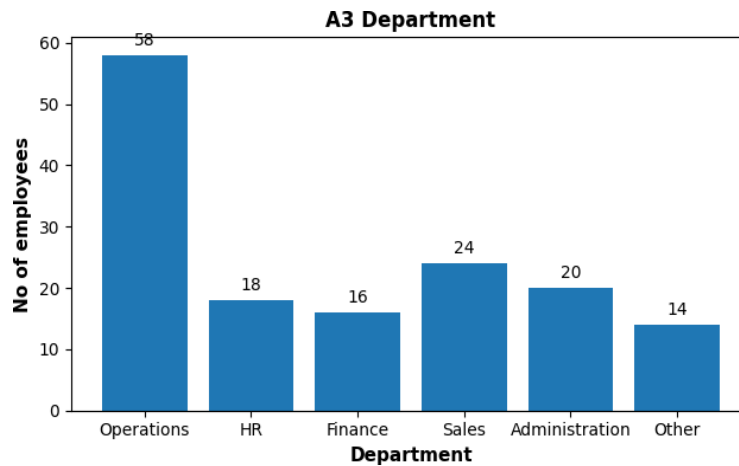


#### 4.3: Table Represents Department

| Department              | Frequency | Percentage |
|-------------------------|-----------|------------|
| Operations / Production | 58        | 38.7%      |
| Human Resources         | 18        | 12.0%      |
| Finance / Accounts      | 16        | 10.7%      |
| Sales & Marketing       | 24        | 16.0%      |
| Administration          | 20        | 13.3%      |
| Other                   | 14        | 9.3%       |
| Total                   | 150       | 100%       |

**Analysis:** The chart for A3 Department A shows the distribution of responses among 150 employees. The highest responses were recorded in the category 'Operations', indicating that most employees share.

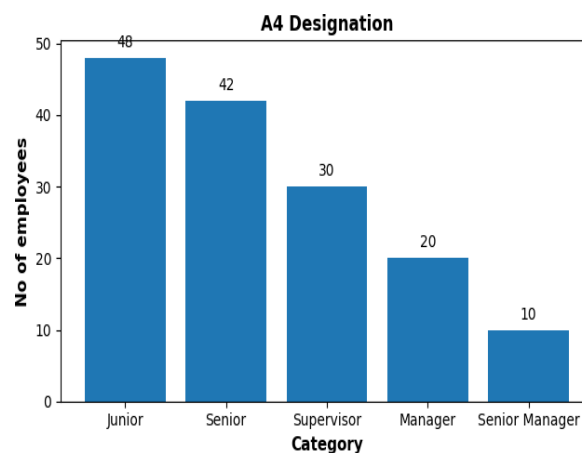
**Interpretation:** The remaining categories received comparatively lower responses, showing moderate variation in opinions. Overall, the findings reveal a positive trend and suggest that employees are contented with organizational practices and HR systems.



**Table 4.4: Table Represents Current Role / Designation**

| Role / Designation       | Frequency | Percentage |
|--------------------------|-----------|------------|
| Junior staff / Associate | 48        | 32.0%      |
| Senior staff / Executive | 42        | 28.0%      |
| Team Leader / Supervisor | 30        | 20.0%      |
| Manager                  | 20        | 13.3%      |
| Senior Manager & above   | 10        | 6.7%       |
| Total                    | 150       | 100%       |

**Analysis:** Bar chart for A4 Designation illustrates the responses collected from 150 employees. The highest number of respondents selected the category 'Junior', indicating that it represents the dominant opinion among employees. In contrast, the lowest responses were recorded in the category 'Senior Manager'. The overall distribution of responses reflects a positive perception regarding this aspect.



**Interpretation:** The Verdict proposes that employees are generally satisfied with the current processing systems., procedures, and workplace environment followed in the organization.

## V. FINDINGS

- The workforce consists of 61.3% male and 34.7% female employees, indicating a need for improved gender diversity, particularly in technical and manufacturing roles.
- Most employees (44.7%) have 1-3 years of experience at Ohmium, followed by 25.3% with less than 1 year. This suggests a relatively young workforce with moderate tenure, indicating recent hiring or early-stage employee retention patterns
- The highest number of respondents (38.7%) belong to the Operations/Production department, which is expected for a manufacturing company, followed by Sales & Marketing (16%) and Administration (13.3%).

## VI. CONCLUSION

A study of 150 employees shows that the green hydrogen and PEM electrolyzer sector has positive workplace culture that significantly drives motivation, with high satisfaction in leadership support and operational processes. While the company's mission nourishes engagement, findings indicate a need for improved appraisal transparency, compensation, and gender diversity to boost retention.

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