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Factors Affecting Training and Development Activities: An Empirical Study of Power Companies of Gujarat

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Abstract

Training and development (T&D) are critical components of human resource management, particularly in the power sector where technological advancements and regulatory requirements necessitate continuous skill enhancement. Various factors influence the effectiveness and implementation of T&D activities in this sector, ranging from organizational support to technological integration. The objective of this paper is to study the factors affecting the training and development activities of employees working in power companies of Gujarat State. The data has been collected with the help of structured questionnaire from 206 employees of 6 power companies. Data has been analyzed in SPSS software and it has been concluded that most influencing factor which affects the training and development activities are Appropriate Learning Environment followed by Management Support, Learner Emotional Investment and Financial Resources.

Keywords: Training, Development, Power Companies

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Introduction:

The power sector is a critical component of any economy, playing a vital role in driving industrial growth, supporting infrastructure development, and enhancing the quality of life. In Gujarat, one of India's most industrially advanced states, the power sector has seen significant growth and transformation over the years. However, the rapid technological advancements, increased regulatory pressures, and the need for sustainable energy solutions pose continuous challenges to power companies. To address these challenges effectively, companies must invest in robust training and development (T&D) activities that equip their workforce with the necessary skills and knowledge. Understanding the factors that influence the success and effectiveness of these T&D activities is crucial for the continuous improvement and competitiveness of power companies in the state.

Training and development (T&D) activities are paramount in power companies due to the dynamic nature of the industry, which is characterized by rapid technological advancements, stringent regulatory requirements, and a critical need for safety and reliability. These exercises are essential in guaranteeing that workers have the abilities and know-how required to run sophisticated equipment, oversee cutting-edge systems, and follow legal requirements.

Improving operational efficiency is one of T&D's main advantages for power businesses. Employees with proper training may complete their work more accurately and efficiently, cutting down on errors and downtime. This increases the business's total productivity and results in considerable cost savings. For example, effective training in maintenance practices can lead to fewer equipment failures and longer asset lifespans, thereby reducing the frequency and cost of repairs and replacements.

Moreover, T&D operations are necessary to guarantee safety in power businesses. Working with potentially dangerous tools and materials, errors in the power industry can have serious repercussions, such as accidents, injuries, and fatalities. Thorough safety training programs give staff members the information and abilities they need to recognize hazards, reduce them, follow safety procedures, and react correctly in an emergency. In addition to safeguarding the personnel,

this also guarantees adherence to regulatory requirements, preventing fines and improving the company's standing.

T&D actions not only improve operations and safety but also boost employee retention and satisfaction. Offering chances for professional advancement and development shows employees that the company values their contributions, which improves morale and cultivates a positive organizational culture. Regular training increases an employee's sense of motivation and worth, which in turn lowers attrition and increases job satisfaction. In turn, this guarantees that the business keeps its knowledgeable and proficient workforce, which is essential to preserving operations' stability and continuity.

In addition, the power industry is progressively adopting new technologies including automation, smart grids, and renewable energy systems. For the workforce to be ready to accept and incorporate these advancements, T&D programs are essential. Power firms may boost their competitiveness, improve service delivery, and support sustainable development goals by keeping up with technology improvements. Employees that receive ongoing training and development are more equipped to stay current with market trends, adjust to new tools and procedures, and foster creativity inside the organization.

In summary, training and development activities are indispensable for power companies. They enhance operational efficiency, ensure safety and compliance, improve employee satisfaction and retention, and facilitate the adoption of new technologies. Investing in T&D is not just a strategic imperative for power companies; it is a foundational element that supports the overall growth, sustainability, and success of the industry.

This empirical study on "Factors Affecting Training and Development Activities: An Empirical Study of Power Companies of Gujarat" aims to explore and analyze the various elements that impact the efficacy of T&D programs within the power sector. Training and development are pivotal for maintaining a competent and adaptable workforce, capable of navigating the complexities of modern energy production and distribution. This study seeks to identify the key factors, such as organizational support, resource availability, employee engagement, and

technological integration, that affect the planning, implementation, and outcomes of T&D activities. By examining these factors within the context of Gujarat's power companies, the research intends to provide a nuanced understanding of the existing practices and offer strategic insights for enhancing T&D frameworks. The findings will be instrumental for policymakers, industry leaders, and HR professionals in designing effective training initiatives that not only meet current demands but also anticipate future challenges in the power sector.

Literature Review:

In the power industry, where regulatory constraints and technical improvements demand constant skill augmentation, training and development (T&D) are essential components of human resource management. Various factors influence the effectiveness and implementation of T&D activities in this sector, ranging from organizational support to technological integration. This literature review examines these factors, drawing on existing research to provide a comprehensive understanding of the challenges and enablers of effective T&D in the power sector.

One important factor that determines the effectiveness of T&D initiatives is organizational support. The success of training programs is greatly impacted by management support, resource allocation, and a healthy learning culture, according to research by **Noe et al. (2010).** Organizational commitment to training and development is crucial for guaranteeing that workers in the power sector are prepared for their positions, given the complex and safety-critical nature of the operating environment. Research shows that organizations with high levels of leadership commitment to staff development typically have better results when it comes to training and development **(Aguinis & Kraiger, 2009).**

With the introduction of digital training tools and e-learning platforms, technological integration in T&D operations has become more popular. With its emphasis on technical skills, the power industry stands to gain a great deal from sophisticated training technologies. For example, the usage of simulation-based training and virtual reality (VR) is growing in order to offer practical experience without the hazards involved **(Burke et al., 2011).** According to

research by **Salas et al. (2012),** these technological interventions improve learning outcomes while also raising student engagement and knowledge retention.

Another important element is employee participation in T&D initiatives. Employee engagement increases the likelihood that they will actively participate in training courses and use the new abilities in the workplace. **Gurieiev et al. (2020); Saks (2006)** discovered that elements including the training's perceived relevance, the chance to put new abilities to use, and the presence of feedback mechanisms all influence trainee engagement. In the power industry, where labor conditions can be harsh, it is essential to promote involvement through pertinent and useful training initiatives.

The availability of both human and financial resources has a big impact on T&D efforts. Effective training programs must be designed, implemented, and maintained with sufficient finance and people, per a research by **Garavan et al. (2004).** Within the power industry, a company's financial performance as well as external economic factors frequently impact the T&D resource allocation. Limited resources may result in fewer opportunities for training, which could impact the effectiveness of the business and the skill development of its workforce.

The electricity industry is heavily regulated and subject to strict compliance standards. For T&D programs to guarantee that workers understand and follow safety and operating standards, they must be in compliance with these regulations. **Burke et al.'s (2011)** research shows that regulatory compliance plays a major role in driving T&D activities because noncompliance can lead to serious penalties and operational concerns. These hazards are reduced and overall performance and safety are improved with the aid of efficient training programs that include regulatory requirements **Baporikar (2024).**

Numerous important elements, such as organizational support, technological integration, employee engagement, resource availability, and regulatory constraints, are highlighted in the literature as having a significant impact on T&D operations in the power sector. Investing in T&D and strategic planning to address these aspects can boost organizational competitiveness, improve worker performance, and increase safety **Joel & Oguanobi (2024).** Future studies ought

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to keep examining these variables in various settings and pinpoint the most effective methods for maximizing T&D initiatives in the energy industry.

Objective:

The purpose of this research paper is to study the factors affecting the training and development activities of employees working in power companies of Gujarat State.

Hypothesis:

H_0: There is no significant difference in factors affecting the training and development activities of employees working in different power companies

H_1: There is a significant difference in factors affecting the training and development activities of employees working in different power companies

Research Methodology

(a) Research Design: - For this research descriptive research design has been adopted and data is collected by using closed ended questionnaire.

(b) Sample Design: - 206 employees of 6 power companies were selected by using stratified purposive sampling method.

(c) Analysis: - The data collected was analyzed with the help of Arithmetic mean and ANOVA.

Analysis & Interpretations

1. **Power Company of Employees**

   In total 6 power companies were included in sample and the numbers of employees selected from each company are presented in table 1. As per results 35-35 employees (16.99%) were selected from GSECL and GETCO. From rest of the power companies i.e. UGVCL, PGVCL, DGVCL and MGVCL 34-34 employees (16.50%) were selected.

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Table 1: Power Company of Employees

Name of Power Company	N	Percentage
GSECL	35	16.99
GETCO	35	16.99
UGVCL	34	16.50
PGVCL	34	16.50
DGVCL	34	16.50
MGVCL	34	16.50
Total	**206**	**100**

2. Factors affecting Training & Development activities

The objective of research was to study the factors affecting the training and development of employees working in the selected power companies of Gujarat State. To serve this objective respondent were given the list of factors and they were asked to indicate the level of influence of these factors on 5 point scale ranging from 4 (Extremely Important) to 1 (Not at all Important). The final ranking was ascertained with the help of mean score. From the results presented in table 2 it can be ascertained that most influencing factor which affects the training and development activities is Appropriate Learning Environment (Mean=2.82, Rank=1) followed by Management Support (Mean=2.62, Rank=2), Learner Emotional Investment (Mean=2.56, Rank=3) and Financial Resources (Mean=2.55, Rank=4). The moderately influencing factors ranked from 5th to 8th position were Legitimate Training Needs (Mean=2.42), Out-of Class Practice (Mean=2.39), Effective and Experienced Trainer (Mean=2.33) and Learner Ability and Motivation (Mean=2.29). The last three ranked factors which have not affected much the training and development programs were In-Class Practice (Mean=2.22, Rank=9), Learner Readiness (Mean=2.16, Rank=10) and Learning Objectives (Mean=2.14, Rank=11).

Table 2: Factors affecting Training & Development activities

Attributes	Mean	S.D.	C.V.	Rank
Management Support	2.62	1.153	0.44	2
Legitimate Training Needs	2.42	0.953	0.39	5
Effective and Experienced Trainer	2.33	1.167	0.50	7

Learning Objectives	2.14	0.934	0.44	11
Learner Ability and Motivation	2.29	0.773	0.34	8
Learner Readiness	2.16	0.924	0.43	10
Learner Emotional Investment	2.56	1.191	0.47	3
In-Class Practice	2.22	1.225	0.55	9
Out-of Class Practice	2.39	1.442	0.60	6
Appropriate Learning Environment	2.82	1.426	0.51	1
Financial Resources	2.55	1.195	0.47	4

To measure difference in factors affecting the training and development activities of employees working in different power companies following hypothesis has been taken:-

H_0: There is no significant difference in factors affecting the training and development activities of employees working in different power companies

H_1: There is a significant difference in factors affecting the training and development activities of employees working in different power companies

To test the hypothesis ANOVA test has been applied as presented in table 3. The value of F-statistic is not significant for all the factors which lead to the acceptance of hypothesis so it can be concluded that there is no significant difference in factors affecting the training and development activities of employees working in different power companies

Table 3: ANOVA Test Result

Factor	Source of Variation	Sum of Squares	Degree of Freedom	Mean Sum of Squares	F-Ratio	p-value	Result
Management Support	Between Samples	327.545	5	65.509	1.094	0.735	**Not Significant**
	Within Samples	11971.5	200	59.857			
	Total	12299	205				
Legitimate Training Needs	Between Samples	55.588	5	11.118	0.182	0.886	**Not Significant**
	Within Samples	12243.4	200	61.217			
	Total	12299	205				
Effective and Experienced Trainer	Between Samples	439.809	5	87.962	1.483	0.579	**Not Significant**
	Within Samples	11859.2	200	59.296			
	Total	12299	205				
Learning Objectives	Between Samples	53.846	5	10.769	0.176	0.887	**Not Significant**
	Within Samples	12245.2	200	61.226			
	Total	12299	205				
Learner	Between Samples	119.531	5	23.906	0.395	0.497	**Not**

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Ability and Motivation	Within Samples	12104	200	60.520			**Significant**
	Total	12223.5	205				
Learner Readiness	Between Samples	488.32	5	97.664	1.552	0.817	**Not Significant**
	Within Samples	12589.4	200	62.947			
	Total	13077.7	205				
Learner Emotional Investment	Between Samples	101.42	5	20.284	0.360	0.789	**Not Significant**
	Within Samples	11259.7	200	56.298			
	Total	11361.1	205				
In-Class Practice	Between Samples	325.97	5	65.194	1.274	0.659	**Not Significant**
	Within Samples	10235.9	200	51.179			
	Total	10561.8	205				
Out-of Class Practice	Between Samples	77.587	5	15.517	0.266	0.782	**Not Significant**
	Within Samples	11647.2	200	58.236			
	Total	11724.8	205				
Appropriate Learning Environment	Between Samples	128.26	5	25.652	0.347	0.328	**Not Significant**
	Within Samples	14785.2	200	73.926			
	Total	14913.5	205				
Financial Resources	Between Samples	201.25	5	40.250	0.715	0.594	**Not Significant**
	Within Samples	11259.3	200	56.296			
	Total	11460.5	205				

Level of Significance = 5%

Conclusion:

From this research it has been concluded that most influencing factor which affects the training and development activities are Appropriate Learning Environment followed by Management Support, Learner Emotional Investment and Financial Resources. The ANOVA result indicated that there is no significant difference in factors affecting the training and development activities of employees working in different power companies

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