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TRAINING EFFECTIVENESS THROUGH DATA ANALYTICS IN ACETECH MACHINERY COMPONENTS INDIA PVT LTD

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ABSTRACT

This study examines how data analytics can assess and improve training effectiveness at Acetech Machinery Components India Pvt Ltd. By analyzing quantitative and qualitative data, key performance indicators (KPIs) such as skill enhancement, productivity, and knowledge retention are identified. The research utilizes predictive analytics and machine learning to forecast training outcomes and suggest personalized learning strategies. The findings aim to optimize training programs, leading to higher efficiency, reduced errors, and improved employee performance, highlighting the role of data analytics in corporate training and organizational growth.

KEYWORDS: *Training Effectiveness, Data Analytics, Key Performance Indicators (KPIs), Employee Performance, Training Optimization, Skill Enhancement, Knowledge Retention.*

INTRODUCTION

ACETECH Machinery Components India Pvt Ltd recognizes the importance of employee training for maintaining operational efficiency and innovation in the machinery manufacturing sector. To enhance its training programs, the industry is leveraging data analytics to measure and improve effectiveness. Moving beyond traditional evaluation methods like feedback and test scores, ACETECH now utilizes real-time performance data, behavior tracking, and learning patterns to assess training impact. This approach helps identify skill gaps, monitor progress, and dynamically adjust training methods for optimal learning outcomes.

BACKGROUND OF THE STUDY

ACETECH Machinery Components India Pvt Ltd relies on well-structured training programs to maintain its competitive edge in the manufacturing sector. Traditional training methods, like classroom learning and manual tracking, often lack comprehensive insights into their effectiveness. To address this, ACETECH is embracing data analytics to evaluate and optimize training programs. By leveraging real-time performance metrics, learning behavior tracking, and long-term impact assessment, the industry can refine training content and strategies, ensuring employees acquire relevant skills aligned with organizational goals.

STATEMENT OF PROBLEM

Training plays vital and important role in any given organization in the modern day. Considering it, my study on training effectiveness in ACETECH Machinery gives me a scope to know in detail about the different techniques and method adopted by ACETECH Machinery to train their employees very effectively and efficiently. The problem to be addressed in this study is to determine various factors such as knowing the training facilities to the employees and also to know what best effort has been put in by the industry to improvise it so that it can be utilized effectively and efficiently by the employees in the organization. however the consistency needs to be maintained in order to make sure all the employees are well knowledge and are in a better position to carry on their work with much more effectiveness in case of any unexpected issues or obstacles.

OBJECTIVES OF STUDY

1. To evaluate the effectiveness of training program and its impact on employee's performance.
2. To understand the Employee's correctiveness & Training effectivess.

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LIMITATIONS OF THE STUDY

The limitations of this research study are as follows:

- Limited sample size may not fully represent the entire workforce.
- Excludes non-formal or external training programs, limiting the study's focus.
- Employee feedback may be influenced by personal perceptions or social desirability.
- The study may struggle to measure long-term training effects.

RESEARCH METHODOLOGY

Research Methodology is a way to systematically solve the research problems. Research methodology is the specific procedures or techniques used to identify, select, process, and analyse information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. The total size of sample respondents was 133. The required primary data was collected through questionnaires. Secondary data was collected from different source like internet, journals, records, and reports. Here the researcher used simple percentage analysis, Descriptive analysis, One-way Anova, Chi-square, Correlation for this study.

REVIEW OF LITERATURE

Byeong Jo Kim, M. Tomprou (2021) "The Effect of Healthcare Data Analytics Training on Knowledge Management" This study assessed the impact of a healthcare data analytics training program on participants' skills and tool usage. Conducted in a large medical system, it compared 21 trainees to 27 peers over one year. Both groups showed improved data analytics skills, tied to better learning and performance goals. The study suggests that healthcare organizations should provide structured training to promote skill development, goal-setting, and tool adoption for improved performance.

OBJECTIVE: To assess the impact of analytics training in healthcare.

RESULT: Both trainees and peers improved healthcare data analytics skills over time. **Maryam Ghasemaghaei, Sepideh Ebrahimi, K. Hassanein (2018) "Data analytics competency for improving firm decision making performance"** The study identifies five dimensions of Data Analytics Competency and analyzes its impact on firm decision-making. Surveying 151 IT managers and analysts, it shows that greater competency enhances decision quality and efficiency, though data size has little effect on efficiency. It offers key insights for research and practical strategies for firms.

OBJECTIVE: To improved firms decision making performance with associated competitive.

RESULT: Data analytics boosts decisions and efficiency, but struggles with big data**.**
M. Sousa, A. Pesqueira, C. Lemos (2019) Decision-Making based on Big Data Analytics for People Management in Healthcare Organizations. The article examines how big data analytics supports healthcare decision-making, focusing on people management and cost-effectiveness. It highlights key tools, efficiency strategies, and a predictive model to aid leadership. Predictive modeling and real-time analytics are shown to improve data handling and decision-making efficiency in healthcare organizations.

OBJECTIVE: To enhance efficiency along the healthcare value chain

RESULT: Big data enhances people management decisions in healthcare.
Ngoc-Trung Tran, Viet-Hung Tran (2020) On Data Augmentation for Generative Adversarial Networks (GAN) Training. The study proposes DAG (Data Augmentation Optimized for GAN) to improve data augmentation in fields with limited data, such as medical applications. By aligning with the original data distribution and reducing Jensen–Shannon divergence, DAG enhances both the generator and discriminator, leading to improved GAN performance and state-of-the-art FID scores.

OBJECTIVE: To enable the use of augmented data in GAN training to improve the learning of the original distribution

RESULT: DAG framework improved GAN performance and achieved state-of-the-art FID scores.
Aws Al-Okaily, A. Teoh, Manaf Al-Okai (2023) Evaluation of data analytics-oriented business intelligence technology effectiveness. This study evaluates how business intelligence (BI) technologies drive organizational benefits by extending the DeLone and McLean model. Based on a survey of Jordanian firms, it finds that data quality significantly influences user satisfaction and perceived benefits, which in turn enhance organizational outcomes.

OBJECTIVE: Leveraging system quality to enhance BI's impact on organizational benefits.

RESULT: Data quality is a key driver of perceived benefits and user satisfaction in BI

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ANALYSIS AND INTERPRETATION

CORRELATION

TABLE 1:
TRACKING SKILL PROGRESS AND IMPACT OF LEARNING ANALYTICS

Category	Method of correlation	Training helped you in increase the accuracy of your works	Training program impacted your approach to routine tasks
Training helped you in increase the accuracy of your works	Pearson Correlation	1	.373**
	Sig. (2-tailed)		.000
	N	133	133
Training program impacted your approach to routine tasks	Pearson Correlation	.373**	1
	Sig. (2-tailed)	.000	
	N	133	133

Source: Primary Data

INTERPRETATION

The derived correlation result is **0.0373** in Karl Pearson correlation with level of significance (2-tailed) is **0.000** It can be concluded that there is negative correlation is **moderate positive correlation** between Monthly Income of the respondents and Price range willing to pay more than conventional vehicles.

INFERENCE

There is a moderate positive correlation (r = 0.373) between training effectiveness and its impact on employees' work accuracy and approach to routine tasks. This suggests that the training program is effective in improving employees' job performance and productivity.

DESCRIPTIVE ANALYSIS

Table 2:
LEARNING PROGRESS ANALYSIS, ADAPTING WORK HABITS, SEEKING HELP, TRAINING PREPARATION AND OVERCOMING OBSTACLES

Factors	N	Minimum	Maximum	Mean	Std. Deviation
How does your organization analyze your learning progress?	133	1	5	2.20	1.026
How do you find your self adapting the work habit from learning analytics?	133	1	5	2.09	.996
How quickly do you seek help when facing challenges applying training?	133	1	5	2.02	.957
How do you assess if training has prepared you for on-the-job challenges?	133	1	5	2.32	1.070
Which aspect of a training program help you to overcome obstacles?	133	1	5	2.44	1.074
Total	133			11.07	5.123

Source: Primary Data

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INTERPRETATION

The above table shows responses for the factor learning progress analysis mean 2.20, adapting work habits mean 2.09, seeking help mean 2.02, training preparation mean 2.32 and overcoming obstacles mean 2.44. The overall total mean is 11.07 and the standard deviation is 5.123.

INFERENCE

The overcoming obstacles factor leads the highest mean with 2.44 and standard deviation of 1.074

FINDINGS

CORRELATION

There is a moderate positive correlation (r = 0.373) between training effectiveness and its impact on employees' work accuracy and approach to routine tasks. This suggests that the training program is effective in improving employees' job performance and productivity.

DESCRIPTIVE ANALYSIS

The overcoming obstacles factor leads the highest mean with 2.44 and standard deviation of 1.074

SUGGESTION

- Enhance Training Programs: Since most respondents find training relevant and helpful for career growth, organizations should invest in well-structured training programs tailored to employees' roles.
- Improve Training Engagement: The respondents stating training helps maintain interest, interactive and engaging training modules should be incorporated.
- Diversify Training Evaluation Methods: Since the respondents indicated that multiple methods are used for training evaluation, companies should continue to implement diverse evaluation techniques for better assessment.

CONCLUSION

To maximize the impact of training programs, organizations should focus on enhancing training structures, incorporating interactive elements for engagement, and maintaining diverse evaluation methods for better assessment. Ensuring that training content is immediately applicable will reinforce skill retention and practical use. Addressing motivation challenges through personalized training approaches can help employees align their learning with career growth. By implementing these strategies, organizations can create a more effective, engaging, and career-driven training environment that benefits both employees and the industry.

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