

Effectiveness of Training and Development Practices on Enhancing Employee Productivity: Evidence from ACCEL Limited, Chennai

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ABSTRACT

This study investigates the effectiveness of training and development (T&D) practices in enhancing employee productivity at ACCEL Limited, an IT services company headquartered in Chennai, India. Using a descriptive research design and structured questionnaire administered to 100 employees selected through simple random sampling, the study examines employee perceptions of training quality, relevance, infrastructure, and impact on performance. Statistical tools including percentage analysis, chi-square tests, and Pearson correlation were employed to analyse the data. The findings reveal that a majority of employees hold positive perceptions towards the training programs offered by the organisation. A strong positive correlation ($r = 0.982$) was found between training programs that develop interpersonal and leadership skills and post-training performance improvement. The chi-square analysis confirmed no significant relationship between employee age and perceived training effectiveness, suggesting uniform benefit across age groups. Key recommendations include strengthening career planning integration, adopting interactive learning methods, investing in digital training infrastructure, and establishing continuous evaluation systems for training outcomes. The study concludes that well-structured T&D practices significantly contribute to employee productivity, job satisfaction, and long-term organisational growth.

Keywords: Training and Development, Employee Productivity, IT Sector, ACCEL Limited, Human Resource Management, Training Effectiveness, Organisational Performance

1. Introduction

In the contemporary knowledge-driven economy, an organisation's competitive advantage increasingly resides in the capabilities of its human capital. Training and Development (T&D) has emerged as a strategic imperative for organisations seeking to equip their workforce with the competencies necessary to meet evolving business demands. Broadly defined as a planned learning experience designed to provide workers with the competencies needed to perform their current or future jobs (Kleiman, cited in Tukiran & Desianti, 2025), T&D encompasses a diverse spectrum of activities ranging from technical skill acquisition to leadership development and cultural orientation.

The relevance of T&D is particularly pronounced in the Indian Information Technology (IT) and Business Process Management (BPM) sector, which contributed 7.5% to India's GDP as of FY23 and is projected to reach 10% by FY26 (NASSCOM, 2024). With the sector's revenue estimated at US\$ 245 billion in FY25 and an anticipated market size of US\$ 78.14 billion for IT services by 2034 at a CAGR of 6.94%, the imperative to maintain a highly skilled and adaptable

workforce has never been greater. Digital transformation, artificial intelligence integration, and cloud computing adoption are reshaping job roles rapidly, rendering continuous employee development not merely desirable but operationally essential.

Despite the growing recognition of T&D's strategic value, empirical research examining its specific effectiveness within Indian IT organisations remains limited. Studies that have investigated training outcomes in the Indian context tend to focus on aggregate sectoral trends rather than organisational-level impacts. This leaves a critical gap in understanding how training investments translate into measurable productivity gains at the firm level. The present study addresses this gap by empirically examining T&D effectiveness at ACCEL Limited, Chennai, a multi-service IT company with over three decades of industry presence.

1.1 Training and Development: Conceptual Overview

Training is the act of increasing the knowledge and skills of an employee for doing a particular job. Its purpose is to achieve a change in the behaviour of those trained and to enable them to do their jobs better (Armstrong, 2020). Development, by contrast, is broader in scope, encompassing the overall growth of an individual's career and potential beyond immediate job requirements. Together, T&D serves multiple organisational functions: increasing operational efficiency, enhancing employee morale, improving human relations, reducing supervisory burden, and building organisational flexibility and resilience.

Modern training frameworks recognise three phases in the training process. The Pre-Training phase involves needs assessment, objective clarification, participant selection, and motivation building. The Training phase focuses on exposure to new knowledge and behavioural experimentation. The Development (follow-up) phase involves the integration of learned skills into workplace practice, supported by organisational reinforcement and continuous feedback. Effective T&D programmes are those that are strategically aligned with organisational goals, employee career aspirations, and emerging industry requirements.

1.2 Objectives of the Study

The study was guided by the following objectives:

- To study the effectiveness of training and development practices on enhancing employee productivity in ACCEL Limited, Chennai.
- To identify the various training and development programs followed in the organisation.
- To identify the factors affecting the effectiveness of training and development practices.
- To analyse employees' opinions towards training and development practices.
- To examine the impact of training programs on employee productivity and work performance.
- To provide suitable suggestions for improving training and development programs.

2. Review of Literature

A substantial body of research supports the positive relationship between structured T&D interventions and employee productivity. Srinivas et al. (2023) demonstrated that training and development programs significantly improve employee skills, productivity, efficiency, and organisational performance, arguing that continuous employee development enables organisations to build future-ready workforces and achieve competitive advantage. Complementing this, Tukiran and Desianti (2025) conducted a systematic literature review establishing that effective training programs positively influence employee engagement, commitment, retention, and work performance, positioning training as a strategic tool for productivity enhancement.

The bibliometric analysis by Kothapalli et al. (2023) confirmed that training and motivation together improve employee productivity and work efficiency, with well-structured programs enhancing employee confidence, job satisfaction, and organisational commitment. The role of technology has also been highlighted by Leuhery (2024), who found that technology-based training programs improve learning accessibility, training effectiveness, and employee productivity, underscoring the importance of digital learning platforms in modern T&D practice.

Dalimunthe et al. (2024a) established through a literature review that employee training and development positively influence employee competencies, performance, and productivity, with organisations investing in employee development experiencing improved retention and work efficiency. A parallel study by Dalimunthe et al. (2024b) confirmed that both training programs and motivational practices have a positive impact on employee productivity, job performance, and workplace commitment.

Jurnalita et al. (2024) examined the role of T&D in supporting sustainable economic growth, finding that training programs improve workforce effectiveness, innovation, competitiveness, and organisational productivity. Similarly, Selviyanti et al. (2023) concluded through a systematic literature review that T&D programs improve employee skills, productivity, and work quality when aligned with organisational strategies and employee needs. Mustafa and Lleshi (2024) further found that continuous learning and employee development initiatives positively affect employee productivity, adaptability, and organisational effectiveness. Bhat and Soni (2024) emphasised the importance of proper training management and continuous learning in modern organisations as preconditions for enhanced technical knowledge and job performance.

Collectively, the literature consistently affirms T&D's positive contribution to employee productivity. However, empirical research specifically examining IT service firms in India, particularly at the organisational level, remains sparse. The present study addresses this gap.

3. Industry and Organisational Context

3.1 Indian IT Sector

The Indian IT and BPM sector has become one of the most significant growth catalysts for the national economy. According to NASSCOM, the industry's revenue touched US\$ 227 billion in FY22, representing a 15.5% year-on-year growth, and was estimated to have reached US\$ 245 billion in FY25. IT export revenue rose by 9% in constant currency terms to US\$ 194 billion in FY25. India's IT services market reached USD 42.74 billion in 2025 and is projected to reach USD 78.14 billion by 2034, exhibiting a CAGR of 6.94% during 2026–2034.

South India commands a dominant 42.6% regional share in 2025, reflecting the unparalleled IT ecosystem concentration in Bengaluru, Hyderabad, and Chennai. Cloud-based deployment dominates at 62.7% in 2025, while large enterprises lead the enterprise size segment at 68.4%. India's Global Capability Centre workforce is projected to rise to 3.46 million by 2030, supported by rapid adoption of artificial intelligence across roles. These macro-trends place extraordinary demands on organisational human resource functions, making T&D a critical strategic lever.

3.2 ACCEL Limited: Company Profile

ACCEL Limited was established in 1991 as a multi-vendor IT Services Company in Chennai. Over three decades, it has evolved into a diversified technology services firm offering IT Infrastructure Management, Warranty Management, Managed Print Services, Cyber Security, and Software Services. The company's vision is to be a leader in customer service through excellence in people, process and technologies, while its mission focuses on offering services meeting international quality standards with full life-cycle support.

ACCEL's service portfolio spans Enterprise IT Infrastructure (Data Centre and Cloud Infrastructure, Workplace Transformation Services, Network Transformation Services), Professional Services (IMAC Services, Infrastructure Upgrades, User Training), Cyber Security (Security Consulting, Vulnerability and Threat Assessment, Managed Security Operations), Managed Services (Remote Infrastructure Management, Technical Help Desks), and Warranty Management. The company has served leading names in Financial Services, Healthcare, Manufacturing, Technology, and Government sectors, making it a representative case for studying T&D practices in the Indian IT services industry.

4. Research Methodology

4.1 Research Design

This study adopts a descriptive research design, which aims to portray accurately the characteristics of a particular group or situation. Descriptive research is appropriate for this study as it seeks to present the existing facts regarding T&D practices and their perceived effectiveness among employees of ACCEL Limited, Chennai, without manipulating any variables.

4.2 Sampling Method and Sample Size

Simple random sampling was employed as the sampling technique, wherein every individual in the population has an equal and independent probability of being selected. This method was chosen for its simplicity, objectivity, and ability to ensure representativeness. The sample size for this study is 100 employees of ACCEL Limited, Chennai.

4.3 Data Collection

Primary Data: Primary data were collected directly from employees through a structured questionnaire designed to capture perceptions on various dimensions of training and development, including training methods, infrastructure, career impact, skill development, and performance improvement. A five-point Likert scale (Strongly Agree to Strongly Disagree) was used for attitudinal questions.

Secondary Data: Secondary data were sourced from company databases, websites, published articles, industry reports, academic journals, and magazines to provide contextual and theoretical grounding for the study.

4.4 Statistical Tools

Three statistical tools were employed for data analysis:

Percentage Analysis: Used to simplify and standardise data for comparative interpretation, reducing all values to a 0–100 range to facilitate relative comparisons across response categories.

Chi-Square Test: Applied to examine the relationship between categorical variables — specifically, between employee age groups and their opinions on training effectiveness. The formula $\chi^2 = \sum[(O-E)^2/E]$ was used, where O = observed frequency and E = expected frequency.

Pearson Correlation: Used to measure the strength and direction of the linear relationship between training-related variables, specifically between training programs developing interpersonal/leadership skills and post-training performance improvement.

5. Data Analysis and Interpretation

5.1 Respondent Profile

The demographic profile of the 100 respondents is presented below:

Demographic Variable	Category	Percentage (%)
Gender	Male	71%
	Female	29%
Age Group	Below 30 years	13%
	30–40 years	37%
	40–50 years	27%
	Above 50 years	23%
Qualification	Graduate	20%

	Post Graduate	34%
	Diploma	30%
	SSLC/+2	15%
Experience	Less than 10 years	25%
	10–15 years	28%
	15–20 years	21%
	More than 20 years	26%
Marital Status	Married	91%
	Single	4%

The sample is predominantly male (71%) and married (91%), with the largest age cohort in the 30–40 years bracket (37%). Post-graduates constitute the largest qualification group (34%), and experience is fairly distributed, with the highest proportion having 10–15 years of service (28%). This demographic spread ensures that findings reflect perspectives across multiple career stages and educational backgrounds.

5.2 Training Methods

Respondents were asked to indicate the primary training method they receive. On-the-job training emerged as the most prevalent method (46%), followed by audio-visual methods (23%), classroom lectures (19%), and off-the-job training (12%). This distribution reflects the practical, hands-on culture prevalent in IT services organisations, where operational learning is often prioritised.

5.3 Employee Perceptions of Training Effectiveness

The following table summarises key findings from the Likert-scale questions administered to respondents:

Training Dimension	Agree / Strongly Agree (%)	Neutral (%)
Training as part of organisation strategy	71%	15%
Training used as employee retention tool	66%	20%
Induction training is well-planned	64%	13%
Training helps achieve individual objectives	69%	15%
Training facilities equipped with infrastructure	64%	21%
Develops interpersonal and leadership skills	58%	24%
Plays key role in career and succession planning	56%	33%
Career growth based on training attended	60%	23%
Organisation creates conducive learning environment	58%	28%
Chance to apply skills learnt in training	67%	20%
Training helps clear work-related doubts	59%	25%
Freedom to request training when needed	73%	17%

Robust system for identifying training needs	77%	17%
Deputed for training in unbiased manner	66%	20%
Training addresses special managerial challenges	53%	28%
Study material is extremely useful	56%	30%
Organisation identifies and provides needed training	65%	20%
Training increases commitment to work	58%	24%
Performance improved after training	64%	25%
Skills learnt are effectively used in workplace	65%	23%

The data reveals consistently positive employee perceptions across nearly all training dimensions. Notably, 77% of respondents agreed that a robust system exists for identifying training needs, and 73% felt free to request training when required — reflecting a participatory and responsive training culture at ACCEL Limited. The relatively higher neutrality on career and succession planning (33%) signals an area warranting organisational attention.

5.4 Chi-Square Analysis

A chi-square test was conducted to examine whether a significant relationship exists between employee age group and their perception that training helps achieve individual objectives.

Hypothesis:

- H₀ (Null Hypothesis): There is no significant relationship between age group and the perception that training helps to achieve individual objectives.
- H₁ (Alternative Hypothesis): There is a significant relationship between age group and the perception that training helps to achieve individual objectives.

Statistical Parameter	Value	Interpretation
Calculated χ^2 Value	1.451	—
Degrees of Freedom	12	(4-1)(5-1)
Table Value (5% level, 12 df)	21.026	—
Decision	H ₀ Accepted	No significant relationship

Since the calculated chi-square value (1.451) is significantly less than the table value (21.026) at the 5% significance level with 12 degrees of freedom, the null hypothesis is accepted. This finding indicates that employee age does not significantly influence their perception of training effectiveness in achieving individual objectives, suggesting that the training programs at ACCEL Limited are perceived as equally beneficial across all age cohorts — a notable indicator of inclusive training design.

5.5 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationship between two key variables: (i) the perception that training programs develop interpersonal and leadership skills, and (ii) the perception that employee performance has improved after training.

Correlation Parameter	Value	Significance
Pearson Correlation Coefficient (r)	0.982	**
Significance Level	0.003	p < 0.01 (2-tailed)
Interpretation	Very High Positive Correlation	—

The Pearson correlation coefficient of 0.982 indicates a very strong positive correlation between training programs that develop interpersonal and leadership skills and post-training performance improvement. This statistically significant result ($p = 0.003 < 0.01$) confirms that employees who perceive training as effective in building soft skills also report substantially improved job performance. This finding corroborates the broader literature on the primacy of interpersonal and leadership competencies in driving employee productivity, and provides strong empirical support for the central hypothesis that effective T&D practices significantly enhance employee performance at ACCEL Limited.

6. Key Findings

The study yields the following principal findings:

- The respondent base is predominantly male (71%), married (91%), and concentrated in the 30–40 years age group (37%), with post-graduates forming the largest educational category (34%).
- On-the-job training is the most commonly used training method (46%), reflecting the practical learning culture characteristic of IT services environments.
- A strong majority (71%) agree that the organisation treats training as an integral component of its organisational strategy.
- Sixty-six percent of respondents believe training programs serve as effective tools for employee retention.
- Sixty-nine percent of respondents report that training has helped them achieve their individual work objectives.
- Seventy-seven percent agree that the organisation has a robust system for identifying employee training needs — the highest agreement rate recorded.
- Seventy-three percent feel free to request training programmes when they perceive a need, indicating an open and participatory training culture.
- Sixty-four percent report improved performance following training participation.
- Sixty-five percent confirm that knowledge acquired in training is effectively applied in their workplace roles.
- Career and succession planning integration with T&D showed the highest neutrality (33%), indicating a developmental opportunity for the organisation.
- Chi-square analysis confirmed no significant relationship between employee age and perceived training effectiveness ($\chi^2 = 1.451 < 21.026$), indicating uniform training benefit across age groups.
- Pearson correlation analysis revealed a very high positive correlation ($r = 0.982, p < 0.01$) between training programs developing interpersonal and leadership skills and post-training performance improvement.

7. Discussion

The empirical findings of this study provide robust support for the proposition that structured T&D practices significantly enhance employee productivity in IT service organisations. The very high correlation ($r = 0.982$) between interpersonal skill development through training and performance improvement is particularly noteworthy, as it suggests that soft skill training — often considered secondary to technical training in IT contexts — may be among the most impactful levers available to HR practitioners. This finding aligns with the broader literature, particularly Tukiran and Desianti (2025) and Srinivas et al. (2023), who identify employee engagement and competency development as central mechanisms through which training translates into performance gains.

The chi-square finding that training effectiveness perceptions do not vary significantly by age is strategically meaningful. It suggests that ACCEL Limited has succeeded in designing training programs that resonate across generational cohorts — a non-trivial challenge given the age diversity of the sample, which spans employees below 30 to above 50 years. This inclusivity in training design aligns with the recommendations of Mustafa and Lleshi (2024), who argue that lifelong learning orientations — rather than age-segmented training approaches — yield superior productivity outcomes.

The relatively moderate agreement scores on career planning and succession planning integration (56% agree, 33% neutral) represent a meaningful gap between training investment and its perceived career development payoff. This finding echoes Jurnalita et al. (2024), who argue that for T&D to support sustainable organisational growth, training must be explicitly connected to individual career trajectories and not merely positioned as a performance improvement tool. At ACCEL Limited, strengthening this connection appears to be the most critical area for strategic improvement.

The preponderance of on-the-job training (46%) reflects practical priorities but may inadvertently limit exposure to broader skill sets. Leuhery (2024) has demonstrated that technology-based and blended learning approaches enhance both accessibility and effectiveness; a balanced portfolio across on-the-job, digital, and experiential methods would likely yield superior outcomes.

8. Suggestions and Recommendations

Based on the analysis and discussion, the following recommendations are offered to ACCEL Limited and, by extension, to comparable IT service organisations:

8.1 Integrate T&D with Career Development Frameworks: The moderate neutrality on career planning and succession planning (33%) signals that employees do not fully perceive T&D as a career advancement mechanism. The organisation should explicitly map training programs to career pathways, establish succession planning systems tied to training milestones, and communicate these linkages clearly to employees.

8.2 Diversify Training Delivery Modalities: While on-the-job training is well-received, investment in digital learning platforms, smart classrooms, gamified learning, and simulation-based training would enhance accessibility, engagement, and effectiveness — particularly for technical and compliance training.

8.3 Strengthen Interpersonal and Leadership Development: Given the very high correlation between interpersonal skill development and performance improvement, targeted investment in leadership development programs, mentoring systems, and communication skills workshops is strongly warranted.

8.4 Conduct Personalised Training Needs Assessments: While 77% agree that a robust needs identification system exists, personalisation — through individual development plans, performance discussion-based training requests, and role-specific curricula — would further enhance training relevance and uptake.

8.5 Enhance Interactivity and Practical Application: Training sessions should incorporate case studies, role plays, group simulations, problem-solving exercises, and post-training project assignments to reinforce knowledge transfer and ensure that learning outcomes are effectively translated to workplace behaviour.

8.6 Establish Continuous Training Evaluation Systems: Regular evaluation of training outcomes through pre- and post-assessments, 360-degree feedback, and productivity metric tracking would enable evidence-based refinement of training content and delivery methods.

8.7 Promote Human Relations Competency Development: Training in conflict resolution, team collaboration, and emotional intelligence should be systematically integrated into the annual training calendar to address the moderate levels of satisfaction recorded on human relations competency development.

9. Conclusion

This study examined the effectiveness of training and development practices in enhancing employee productivity at ACCEL Limited, Chennai. Drawing on responses from 100 employees and applying percentage analysis, chi-square testing, and Pearson correlation, the research provides compelling empirical evidence that T&D practices at ACCEL Limited are perceived positively and contribute meaningfully to employee performance, skill development, and organisational commitment.

The very high positive correlation ($r = 0.982$) between interpersonal and leadership skill development through training and post-training performance improvement stands as the study's most significant statistical finding, affirming the centrality of soft skill development to employee productivity in IT service contexts. The absence of age-based variation in training effectiveness perceptions further highlights the inclusive and equitable design of the organisation's training programs.

The study identifies career planning integration, advanced interactive learning methods, and continuous evaluation as the principal areas requiring strategic attention. By addressing these areas and aligning T&D more explicitly with individual career trajectories and organisational goals, ACCEL Limited can further strengthen its human capital capabilities and sustain its competitive position in India's dynamic IT services market.

The broader implication for HR practitioners and researchers is that T&D effectiveness is not simply a function of training frequency or resource expenditure — it is contingent on strategic alignment, methodological diversity, interpersonal skill emphasis, and systemic evaluation. Organisations that attend to these dimensions are best positioned to realise the full productivity potential of their training investments and to build workforces capable of navigating the accelerating pace of technological and market change.

References

- Bharathi, S., & Priyadharshini, K. (2026). *The role of employee engagement in improving organizational performance in JKS Auto Service, Ariyalur. International Journal of Management and Social Science Research Review*, 13(1).
- Bhat, S. A., & Soni, M. C. (2024). Impact of employee development and training on employee productivity. *Journal of Human Resource Development*, 18(2), 45–62.
- Dalimunthe, R. F., Hajar, S., Pardede, S. N., Sirait, B., & Ivana, N. (2024b). The effect of training and employee motivation on employee productivity. *Asian Journal of Management*, 15(1), 21–35.
- Dalimunthe, R. F., Mulya, H. A., Pasaribu, A., & Andreas, D. T. (2024a). The effect of training and development on performance: A literature review. *International Journal of Human Resource Management*, 35(4), 112–130.
- Jurnalita, A. C., Nisa, N. F., & Darmastuti, I. (2024). The role of employee training and development in supporting sustainable economic growth. *Journal of Sustainable Business*, 9(3), 77–94.
- Kothapalli, V., Krishna, B. M., Rao, N. S., & Geddam, S. M. (2023). Employee productivity through training and development: A bibliometric analysis. *Indian Journal of Management*, 22(4), 55–74.
- Leuhery, F. (2024). The role of technology in employee training and development. *Journal of Educational Technology*, 12(1), 30–47.
- Mustafa, B., & Lleshi, S. (2024). Impact of lifelong learning and investments in employee development on employee productivity and performance. *European Journal of Business Management*, 16(2), 88–104.
- NASSCOM. (2024). Indian IT-BPM sector report FY2024. National Association of Software and Service Companies.
- Paulet, J., & Moul, S. (2017). Measuring training effectiveness: Evidence from British Airways. *Journal of Applied Management Studies*, 8(1), 14–29.
- Vanhaltren, C. J., & Bharathi, S. (2026). *The influence of Big Five personality traits on self-efficacy: An empirical study among Generation Z undergraduate students. Minnesota Journal of Business Law and Entrepreneurship*, 721–732.



Selviyanti, N. H., Fadila, N., Sulis, Y. D., Anshori, I., & Safrizal, H. B. A. (2023). A systematic literature review on human resource training and development in improving employee performance. *Journal of Human Resources*, 7(3), 200–218.

Srinivas, S. S. N., Nahak, N., Bandlamudi, M. K., & Ravi, J. (2023). Employee training and development: Transformation to a future-ready workforce and their performance outcomes. *International Journal of Organisational Behaviour*, 28(1), 67–85.

Tukiran, M., & Desianti, L. C. (2025). The role of training and development in enhancing employee engagement: A systematic literature review. *Journal of Organisational Psychology*, 19(2), 143–161.

Vanhaltren, V. C. J., & Bharathi, S. (2026). *The influence of Big Five personality traits on self-efficacy: An empirical study among Generation Z undergraduate students. Minnesota Journal of Business Law and Entrepreneurship*, 720–732.