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A STUDY ON EMPLOYEE TRAINING AND DEVELOPMENT STRATEGIES IN MACHINE SPARE PARTS MANUFACTURING

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CHAPTER – I

INTRODUCTION

1.1. INTRODUCTION OF THE STUDY

In today's highly competitive manufacturing landscape, organizations are under continuous pressure to enhance productivity, minimize operational downtime, and uphold stringent quality standards. The machine spare parts manufacturing sector, in particular, demands a workforce equipped with precision-driven skills, technical expertise, and strict process adherence. In this context, employee training and development emerge as strategic imperatives that significantly influence organizational success.

Modern training and development strategies extend well beyond conventional classroom-based learning. They now encompass a holistic approach that begins with a comprehensive onboarding process. Onboarding serves as the foundational stage of employee integration, helping new hires acclimate to the work environment, understand machinery operations, internal processes, safety protocols, and organizational values. A well-structured onboarding framework not only accelerates the time-to-productivity but also contributes to lower employee turnover, enhanced job satisfaction, and stronger workplace relationships.

Specifically within the machine spare parts manufacturing industry, onboarding and subsequent training must address sector-specific technical competencies. These include machine handling, quality assurance measures, adherence to safety standards, and basic troubleshooting capabilities. These components are essential to align new employees with operational expectations and industry benchmarks.

This study focuses on the employee training and development strategies employed by Jega Precision Drives Pvt. Ltd., with a special emphasis on the effectiveness of their onboarding practices. The objective is to explore how new employees are inducted, trained, and supported during the early stages of their employment, and to assess the impact of these practices on organizational performance and workforce development.

1.2. Company Profile

Figure 1: Company Image

Jega Precision Drives Pvt. Ltd., located in K. Vadamadurai, Coimbatore, is a reputed organization in the machine spare parts manufacturing industry (Fig 1.2.1). The company was established with a clear mission to deliver high-precision components tailored to the needs of industrial clients across various sectors, including textiles, automotive, and engineering. Over the years, Jega Precision Drives has built a strong reputation for its unwavering commitment to quality, innovation, and customer satisfaction.

With a workforce of over 200 employees, the company operates through multiple specialized departments such as CNC machining, lathe operations, quality control, and administrative support. The manufacturing process integrates semi-automated production lines, which necessitate that employees undergo specific skill-based training before being deployed to their respective roles. As such, employee training and development are central to the company's operational strategy.

The Human Resources (HR) department at Jega Precision Drives plays a critical role in this regard. It is responsible for designing and implementing structured onboarding programs that equip new employees with the technical knowledge, safety awareness, and organizational values needed to perform effectively. These onboarding sessions are tailored to the company's production processes and quality standards, ensuring that new hires are we2ll-prepared to contribute from the outset.

Key Values of Jega Precision Drives Pvt. Ltd.:

- Strong emphasis on employee safety and well-being.
- Commitment to delivering high-quality products on time.
- Focus on continuous improvement and technological innovation.
- Adoption of sustainable and responsible production practices.

This study examines the training and development strategies of Jega Precision Drives Pvt. Ltd., with a particular focus on the effectiveness of its onboarding practices in preparing new employees for the demands of the machine spare parts manufacturing sector.

Figure 2: Company Board

1.3. Services Offered by Jega Precision Drives Pvt. Ltd.

Jega Precision Drives Pvt. Ltd. provides a comprehensive range of services in the domain of mechanical manufacturing and engineering support, catering to the needs of various industrial sectors such as textiles, automotive, and general engineering. The company's service offerings are closely integrated with its production capabilities and form the foundation for its employee training and development strategies. Each service area requires a specific set of skills, precision handling, and technical understanding, all of which are incorporated into the company's structured training programs. The major services offered include:

1.3.1. Manufacturing of Spare Parts

Jega Precision Drives specializes in the production of custom-designed spare parts for industrial machinery, particularly within the textile and engineering sectors. This involves the execution of precision turning, milling, and grinding operations. Employees working in this area are required to have an in-depth understanding of technical drawings, machine settings, and material specifications. The training programs cover core manufacturing principles, equipment handling, and quality expectations to ensure high standards in component output.

Figure 3: Machinery setup

1.3.2. CNC Machining

One of the company's key competencies lies in CNC (Computer Numerical Control) machining. This service involves the use of automated, high-accuracy machines to manufacture complex components that meet both domestic and export requirements. Due to the precision demanded by CNC operations, employees must undergo rigorous training in machine programming, tool calibration, and error diagnosis. The HR and technical departments jointly organize hands-on workshops to ensure that operators are proficient in using CNC technology effectively and safely.

1.3.3. Quality Control & Testing

Quality control is a cornerstone of Jega Precision Drives' operational model. The company conducts extensive dimensional inspections, material strength evaluations, and tolerance checks to maintain product consistency and client satisfaction. Personnel in this department receive specialized training in measurement tools (e.g., micrometers, calipers, CMM machines), statistical process control, and defect analysis. Training modules also emphasize the importance of documentation, traceability, and adherence to industry-specific standards.

1.3.4. Assembly & Dispatch

In addition to manufacturing, the company offers component fitting, assembly, and dispatch services. This includes the integration of parts into sub-systems or full assemblies, followed by packaging and logistics management. Training in this domain focuses on process sequencing, assembly line efficiency, safety practices, and inventory handling. Employees are also trained in packaging standards to ensure secure and damage-free delivery to clients.

1.3.5. Engineering Consultancy

Jega Precision Drives also provides consultancy services related to the design and development of mechanical components. This includes support in new part design, material selection, tooling decisions, and process improvement initiatives. Employees involved in consultancy and design support functions undergo development programs in CAD software, technical drawing interpretation, and value engineering principles. These programs are designed to foster problem-solving skills, technical communication, and innovation among staff.

Figure 4: Manufacturing unit

Each of these service areas where ranging from CNC machining and quality control to engineering consultancy and assembly plays a critical role in the overall business operations of Jega Precision Drives Pvt. Ltd. These functions are not only central to the company's value delivery but also form the foundation upon which its employee training and development programs are built. The skills, knowledge, and competencies required in each department directly shape the structure, content, and intensity of onboarding and training modules. Consequently, the effectiveness of employee development strategies is intrinsically linked to the operational needs, technical standards, and quality benchmarks upheld across these service domains. By aligning training initiatives with specific functional demands, the company ensures that its workforce is well-equipped to meet performance expectations and maintain high levels of productivity, safety, and customer satisfaction.

1.4. Organogram

Jega Precision Drives Pvt. Ltd. operates under a clearly defined organizational structure that promotes operational efficiency, accountability, and effective communication across all departments. The organogram reflects the company's commitment to structured management and the strategic delegation of responsibilities, both of which are crucial for implementing effective employee training and development initiatives.

The organizational hierarchy is designed to ensure that every function within the company—from production to human resources—works cohesively towards achieving operational goals. A simplified representation of the company's organogram is outlined below:

Figure 5: Company's Organogram

Each role within this hierarchy plays a vital part in not only fulfilling operational duties but also in Supporting employee integration, training, and development efforts.

Key Functional Roles and Their Contributions to Training and Development:

- **Managing Director:**

  Provides strategic direction and oversees the alignment of training initiatives with the company's vision and long-term goals. The leadership ensures adequate resource allocation for human capital development.

- **Production Head:**

  Oversees all manufacturing operations and plays a critical role in identifying skill requirements for different production units. Coordinates with the HR department to ensure employees receive the technical training needed for CNC operations, lathe machining, and quality assurance.

- **CNC and Lathe Supervisors:**

These supervisors are responsible for on-the-job training in their respective departments. They mentor new employees, demonstrate machine handling techniques, ensure safety compliance, and evaluate skill proficiency during the probation period.

- **Quality Inspector:**

Engage new employees in quality control protocols, educating them on inspection methods, tolerance standards, and quality documentation. This role is crucial in instilling a quality-first mind-set among production staff.

- **HR Manager:**

Central to the employee training and development function, the HR Manager Designs onboarding frameworks, coordinates training schedules, and evaluates the effectiveness of training programs. They also work on policy development related to workforce capability building.

- **Training & Development Officer:**

A key facilitator of skill enhancement initiatives, this officer conducts technical and soft skills training sessions, arranges external training programs, and tracks the progress of each employee's development journey.

- **Recruitment Executive:**

Play a foundational role by sourcing candidates who match the skill and cultural requirements of the organization. They also participate in pre-onboarding briefings and assist in early-stage orientation.

- **Accounts Manager:**

While not directly involved in training, this role ensures payroll and financial compliance for training-related expenses and coordinates with HR for budgeting learning and development activities.

- **Stores & Logistics Supervisor:**

Provides essential input during onboarding related to inventory handling, materials management, and dispatch procedures. This department ensures new employees understand the logistical aspects of production and delivery.

Role of the Organizational Structure in Onboarding

The collaborative nature of the company's hierarchical framework ensures that every department actively contributes to the onboarding process. New employees are not only introduced to company policies and procedures but also to the operational workflow of their respective departments. Departmental heads and supervisors provide functional mentorship, while the HR team focuses on cultural integration and training logistics.

Through this integrated structure, Jega Precision Drives Pvt. Ltd. ensures that its training and development strategies are not confined to a single department but are embedded across the organization. This multidisciplinary involvement enhances the effectiveness of onboarding, accelerates the learning curve for new hires, and contributes to building a well-rounded and competent workforce.

1.5. Scope of the Study

This study is designed to explore and analyze the training and development strategies implemented at Jega Precision Drives Pvt. Ltd., with a particular focus on the onboarding phase for new employees. Given the technical nature and operational precision required in the machine spare parts manufacturing sector, onboarding plays a vital role in ensuring employees are adequately prepared to meet performance standards from the outset. The study is therefore scoped to evaluate how the company introduces and integrates new hires into its production and organizational environment.

The research is confined to examining initial-stage training and development activities that occur during the onboarding period, which typically includes the first few weeks of employment. The Zemphasis is on identifying the effectiveness, structure, and components of the onboarding process

and how it contributes to employee readiness, safety awareness, and alignment with organizational goals.

1.5.1. In-Scope Areas:

- **Onboarding Procedures:**

  The study analyzes the formal and informal processes followed during the initial days and weeks of employment. This includes orientation sessions, departmental introductions, and structured training schedules.

- **Training Methods and Content:**

  Focus is placed on the instructional techniques and learning formats used to communicate operational procedures, workplace safety protocols, machine handling instructions, and company policies to new employees.

- **Support Systems and Resources:**

  The research evaluates the tools, materials, and infrastructure provided to assist new employees in adjusting to the work environment. This includes manuals, safety guides, mentorship arrangements, and hands-on training aids.

- **Roles of Supervisors and HR Personnel:**

  Special attention is given to the involvement of line supervisors, team leaders, and HR representatives in onboarding, including their responsibilities in skill orientation, performance evaluation during the probation period, and workplace integration.

1.5.2. Out-of-Scope Areas:

- **Long-Term Development Initiatives:**

  This study does not delve into ongoing or advanced training programs offered after the initial onboarding period, such as leadership development, cross-functional training, or succession planning efforts.

- **External Training and Certifications:**

  Training programs facilitated by third-party institutions, government bodies, or industry associations (including NSDC certifications and vendor-led workshops) fall outside the scope of this research.

- **Advanced Digital Training Technologies:**

  Although digital tools may be referenced where applicable, this study excludes in-depth analysis of cutting-edge training technologies such as virtual reality (VR), augmented reality (AR), machine simulations, or AI-powered learning platforms.

By maintaining this defined scope, the study aims to provide a focused and in-depth understanding of how onboarding practices are designed and executed within Jega Precision Drives Pvt. Ltd., and how they contribute to the development of a capable and confident workforce within the machine spare parts manufacturing sector.

CHAPTER 2

REVIEW OF LITERATURE

2.1. Introduction

A well-structured onboarding process plays a pivotal role in the professional development and engagement of employees, particularly in technical and production environments like the machine spare parts manufacturing industry. Various researchers and HR scholars have studied the impact of onboarding and employee training on organizational efficiency, employee retention, and job satisfaction. Employee training and development have been widely acknowledged as critical components of organizational success, particularly in manufacturing sectors that demand high precision and technical skill. Several researchers and theorists have contributed to the understanding of how structured training and onboarding influence workforce performance, retention, and overall productivity.

2.1.1. Employee Training and Organizational Performance

According to Goldstein and Ford (2002)**,** training is a systematic process designed to improve individual and organizational performance through learning. In manufacturing industries, especially those involving high-precision processes, effective training ensures employees can operate machinery accurately, adhere to quality standards, and reduce production errors. Noe (2010) further emphasizes that training is not merely a cost but a strategic investment, especially when aligned with organizational goals.

2.1.2. Onboarding as a Strategic Tool

Bauer (2010) identifies onboarding as a strategic HR tool that helps new employees become productive members of the organization more quickly. It includes not only orientation and training but also integration into the company culture. Structured onboarding has been linked to higher job satisfaction, lower turnover rates, and better employee engagement (Klein & Polin, 2012). This is especially relevant in machine spare parts manufacturing, where employees need to quickly understand complex production processes.

2.1.3. Technical Training in Manufacturing

Manufacturing environments rely heavily on skill-based training. According to Jacobs and Washington (2003)**,** technical training in industries like automotive or precision engineering involves hands-on

learning, equipment handling, and process discipline. Training programs must address operational procedures, quality control, safety norms, and machine troubleshooting all essential for maintaining efficiency and safety in the workplace.

2.1.4. Role of HR and Supervisors in Training

HR professionals play a pivotal role in designing and delivering training programs. Wright and Nishii (2007) propose that HR practices, including training and development, significantly influence employee capabilities and motivation. Furthermore, supervisors act as facilitators in informal learning and real-time guidance, especially during the onboarding phase. Their mentorship is crucial in helping employees adjust and perform effectively (Saks & Gruman, 2011).

2.1.5. Challenges in Training Implementation

Despite the benefits, implementing training in the manufacturing sector comes with challenges. These include limited training budgets, time constraints, and resistance to change. Salas et al. (2012) argue that for training to be effective, organizations must ensure proper needs assessment, curriculum design, and feedback mechanisms. In machine spare parts manufacturing, the challenge is even more pronounced due to the precision required and the evolving nature of machinery and tools.

2.1.6. Industry-Specific Studies

Several case studies have demonstrated the positive impact of structured onboarding and technical training in Indian manufacturing firms. For example**,** Kumar and Pansari (2016) found that small and medium enterprises (SMEs) in Coimbatore that invested in continuous training observed measurable improvements in quality control and employee retention. Their research suggests that companies with semi-automated production lines benefit significantly from skill-specific onboarding programs.

2.2. Problem Statement:

Despite the presence of basic onboarding and orientation programs across many manufacturing firms, the machine spare parts manufacturing industry continues to face challenges in standardizing and systematizing onboarding and training processes. Informal, peer-led training remains prevalent, often with minimal strategic involvement from the Human Resources department. This lack of structured onboarding can result in increased operational errors, inadequate knowledge of company protocols, lower job satisfaction, and prolonged adjustment periods for new hires.

This study seeks to investigate the structure, implementation, and effectiveness of employee training and onboarding practices within the machine spare parts manufacturing sector, with specific reference to Jega Precision Drives Pvt. Ltd. The objective is to identify existing gaps, assess the role of HR and supervisory staff, and explore opportunities for improving early-stage employee development and integration.

2.3. Research Gap

While numerous international studies have explored onboarding processes in the IT, service, and multinational corporate sectors, limited research exists that specifically addresses onboarding practices within the Indian manufacturing industry—particularly in the context of Coimbatore's thriving machine spare parts sector. This presents a significant gap in both academic literature and practical application.

Key issues identified include:

- The absence of standardized and documented onboarding procedures, especially in Micro, Small, and Medium Enterprises (MSMEs).
- Limited efforts toward role-specific customization in onboarding programs.
- A general lack of structured feedback mechanisms from newly hired employees.
- Minimal adoption of visual aids, hands-on simulations, and process-based training methods tailored for factory floor workers

This study seeks to bridge these gaps by conducting a focused analysis of onboarding and training practices at Jega Precision Drives Pvt. Ltd., evaluating their effectiveness, and recommending improvements grounded in employee feedback and established industry benchmarks.

CHAPTER 3

RESEARCH METHODOLOGY

INTRODUCTION

The research methodology outlines the approach, tools, and techniques used to systematically investigate the training and onboarding strategies employed at Jega Precision Drives Pvt. Ltd. This section details the research design, data collection methods, sampling techniques, and analytical tools used to derive meaningful insights from the study. A proper research methodology is essential to ensure the validity and reliability of findings. It defines the framework, tools, and procedures used to collect, interpret, and analyze the data. For this study on the onboarding process in the machine spare parts manufacturing industry, a combination of descriptive and analytical approaches has been used.

3.1. Research Design

This study adopts a descriptive research design, aimed at observing, documenting, and analyzing the current training and onboarding practices in a real-world industrial setting. The objective is to understand how new employees are inducted, trained, and supported, and to assess the effectiveness of the methods used.

3.1.1. Nature of the Study

The research is both qualitative and quantitative in nature.

- Qualitative data is gathered through interviews and open-ended responses to explore employee perceptions and experiences.
- Quantitative data is obtained via structured questionnaires to measure the frequency, effectiveness, and satisfaction levels of onboarding and training practices.

3.1.2. Source of Data

- **Primary Data**: Collected directly from employees, HR personnel, and supervisors at Jega Precision Drives Pvt. Ltd. through surveys, interviews, and observation.
- **Secondary Data**: Sourced from company documents, training manuals, HR records, industry reports, academic journals, and previous research studies related to employee onboarding and training.

3.1.3. Data Collection Methods

- **Structured Questionnaire**: A well-designed questionnaire was used to collect data from employees, focusing on their onboarding experience, training received, clarity of roles, and perceived effectiveness of the process.
- **Interviews**: Semi-structured interviews were conducted with HR personnel, supervisors, and selected employees to gain deeper insights into onboarding strategies, challenges, and feedback mechanisms.
- **Observation**: Informal observation of onboarding sessions and factory floor training activities helped validate the processes being followed.

3.1.4. Sampling Technique

The study employed a purposive sampling method, targeting individuals directly involved in or affected by the on-boarding process.

- **Sample Size**: A total of 50 respondents were selected, including new employees (within 6 months of joining), HR team members, and production supervisors.

3.1.5. Tools of Analysis

The collected data was analyzed using the following tools:

- Descriptive Statistics (such as frequency, percentage, and mean scores) to summarize responses.
- Graphical Representations (bar charts, pie charts) to visualize trends and patterns.
- Thematic Analysis for qualitative responses to identify recurring themes and insights.

3.2. Objectives of the Study

The research has both Primary and Secondary objectives.

3.2.1. Primary Objectives

The primary objectives of the study are: To study and evaluate the effectiveness of the onboarding process at Jega Precision Drives Pvt. Ltd.

3.2.2. Secondary Objectives

The secondary objectives of the study are:

- To understand employee satisfaction with the current onboarding methods.
- To identify gaps in training materials and feedback systems.
- To examine the role of HR and supervisors in onboarding delivery.
- To propose improvements for better integration and job readiness.
- To explore the impact of onboarding on productivity and retention during the first six months These objectives help shape the questionnaire and interview formats used during data collection.

3.3. Tools Used for the Study

The study uses both Primary and Secondary data.

3.3.1. Primary Data Collection Tools:

1. **Structured Questionnaire:** Designed to gather opinions from new employees about onboarding clarity, duration, usefulness, and satisfaction. Included multiple-choice and Likert scale questions.

2. **Interviews with Supervisors:**

   Conducted with team leads and HR managers to understand how onboarding is planned and executed.

3. **Observation Method:**

   The researcher observed one full onboarding session to understand the flow, materials used, and employee engagement.

3.3.2. Secondary Data Sources:

1. Company HR policy manual (onboarding section)

Provide official guidelines and procedures for onboarding new employees, helping ensure consistency and clarity.

2. Previous training records and feedback reports

Show past onboarding activities and employee feedback, useful for evaluating effectiveness and identifying areas for improvement.

3. Research journals and publications related to onboarding in manufacturing

Offer insights into best practices and trends in onboarding, especially within the manufacturing industry.

3.4. Data Collection

1. **Preparation of Questionnaire:**

   The questionnaire was reviewed by HR to ensure appropriateness. It included sections on general background, onboarding experience, support received, and suggestions.

2. **Field Work:**

   The researcher visited the company premises and distributed printed copies of the survey form. Participants were given 15–20 minutes to complete it.

3. **Follow-Up Interviews:**

   Conduct 1-on-1 interviews with five supervisors and two HR staff over two days. Responses were recorded and analyzed qualitatively.

CHAPTER 4
RESEARCH METHODOLOGY - DATA ANALYSIS

The data collected from 50 employees of Jega Precision Drives Pvt. Ltd. The data was analyzed using percentage methods and graphical representations. Each section is followed by an inference to interpret the data based on onboarding effectiveness, employee experience, and satisfaction.

4.1. Age Group of Respondents

Data were collected from 50 respondents with the different age groups from below 25 years to above 45 years.

Table No: 1- Age Group of Respondents

Age Group	No. of Respondent	Percentage
Below 25 years	12	24%
26 – 35 years	25	50%

36 – 45 years	10	20%
Above 45 years	3	6%

SOURCE: PRIMARY DATA

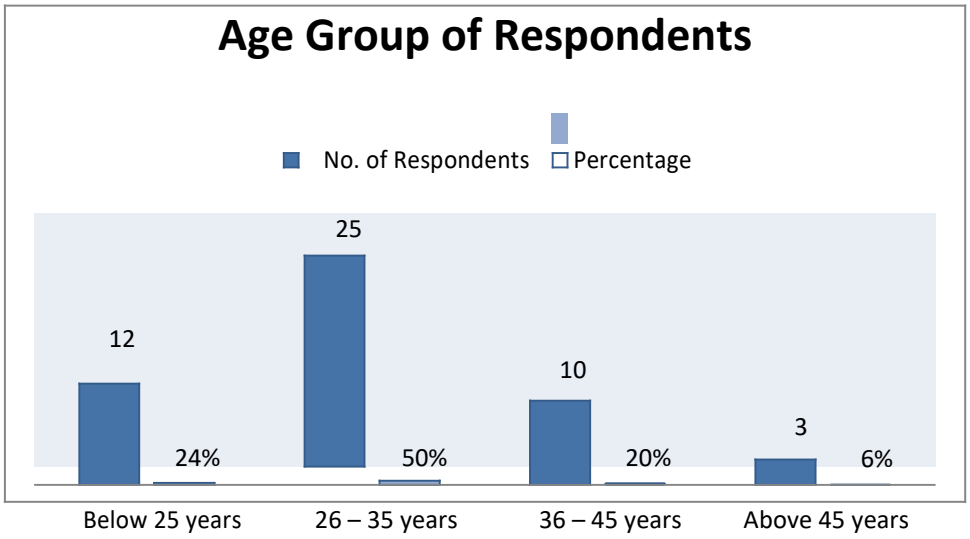

Figure 6: Age Group of Respondents

Interpretation:

1. Majority of Respondents (50%) fall in the 26–35 age group, indicating strong participation from early to mid-career individuals.
2. Youth Representation (24%) shows notable involvement from those below 25, likely recent entrants into the workforce.
3. Lower Participation (26%) from individuals aged 36 and above suggests reduced engagement or relevance among older age groups**.**

Chi-square Test

Table No: 2- Chi-Square Age Group Table

Age Group	**Observed (O)**	**Expected (E)**	**(O-E)^2 / E**
Below 25 years	12	12	0
26-35 years	25	25	0
36-45 years	10	10.2	0.0392
Above 45 years	3	2.8	0.0143
Total	**50**	**50**	**≈ 0.0182**

- Chi-square statistic (χ^2) = 0.01824
- Degrees of freedom (df) = *(*Number of categories − 1*)* = 4 − 1 = 3
- Using a chi-square distribution table, the critical value for df = 3 at significance level α = 0.05 is approximately 7.815.

Since

$\chi 2 = 0.01824 < 7.815 \backslash chi^2 = 0.01824 < 7.815$

There is no significant difference between the observed and expected age group distributions.

Inference

The age distribution in the observed sample aligns closely with the expected distribution. This suggests that the age composition of individuals in the organization (or study group) is balanced and does not show any unusual patterns or biases.

4.2. Educational qualification

Data were collected from 50 respondents with the different Qualification.

Table No: 3- Educational qualification

Qualification	Number of Responses	Percentage
SSLC	8	16 %
Diploma	28	56%
ITI	10	20%
Graduate & above	4	8%

SOURCE: PRIMARY DATA

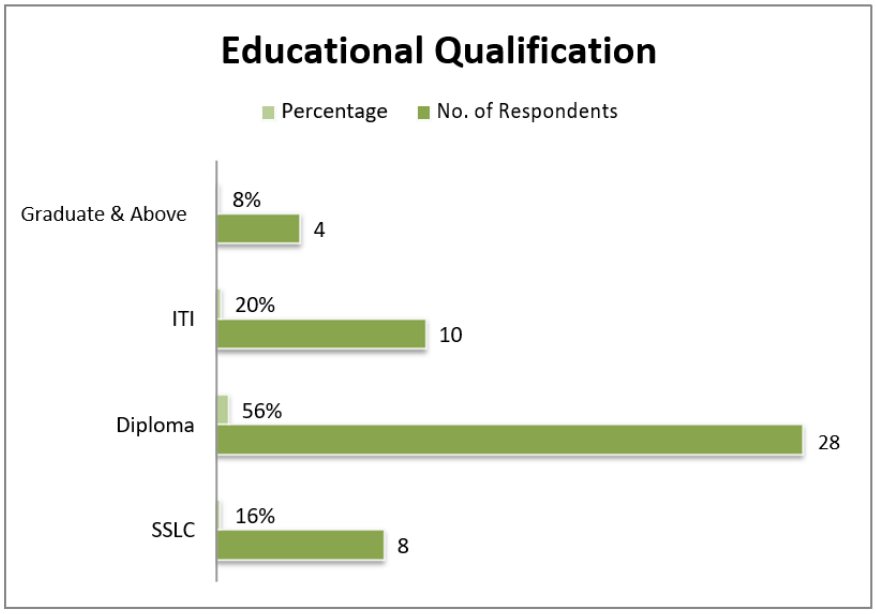

Figure 7: Educational Qualification

Interpretation:

1. Majority Qualification – Diploma (56%): Over half of the respondents hold a Diploma, indicating it is the most common educational qualification among the group.
2. Moderate Representation – ITI (20%) & SSLC (16%): A significant portion of respondents have ITI or SSLC qualifications, reflecting a workforce with practical or basic education levels.
3. Low Higher Education – Graduate & above (8%): Very few respondents have a graduate-level or higher qualification, suggesting limited

representation of advanced academic backgrounds in the group.

Chi-square Test

Table No: 4 - Chi-Square Educational qualification Table

Qualification	**Observed (O)**	**Expected (E)**	**(O-E)^2 / E**
SSLC	8	10.5	0.5
Diploma	28	25.5	0.36
ITI	10	10	0
Graduate & Above	4	4	0
Total	**50**	**50**	**0.86**

- Chi-square statistic (χ^2) = 0.76
- Degrees of freedom (df) = 4 − 1 = 3
- Critical value at α = 0.05 = 7.815

Since

$\chi 2=0.76<7.815\backslash chi^2 = 0.76 < 7.815\chi 2=0.76<7.815$

There is no significant difference between the observed and expected qualifications.

Inference

The qualification distribution of the observed sample aligns closely with expectations. This suggests that the organization or sample group does not show any major bias or imbalance in terms of educational qualifications.

4.3. Source of Recruitment

Data were collected from 50 respondents with a different Recruitment Source.

Table No: 5 - Source of Recruitment

Recruitment Source	**Number of Responses**	**Percentage**
Direct Walk-in	15	30%
Campus Placement	10	20%
Referral	12	24%
External Consultant	13	26%

SOURCE: PRIMARY DATA

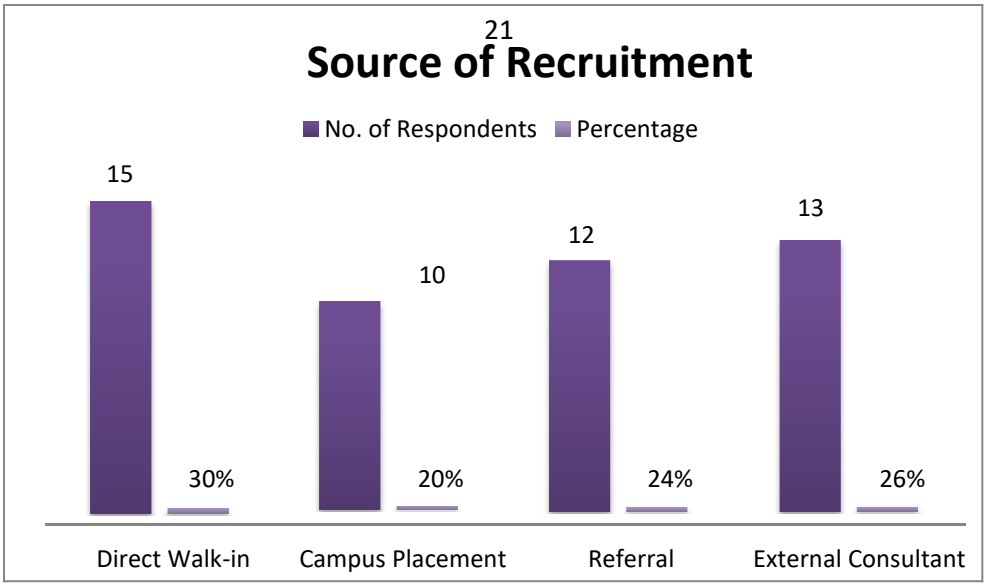

Figure 8: Source of Recruitment

Interpretation:

1. Most Common Source – Direct Walk-in (30%): The largest portion of respondents were recruited through direct walk-ins, indicating a strong reliance on self-initiated applications.
2. Balanced Use of Other Sources (20–26%): Campus placements (20%), referrals (24%), and external consultants (26%) were also significant, showing a diverse recruitment strategy.
3. Effective Informal Channels – Referrals & Consultants (50% combined): Together, referrals and consultants account for half of the recruitment, suggesting informal and network-based hiring plays a major role in talent acquisition**.**

Chi-square Test

Table No: 6- Chi-Square Source of Recruitment Table

Recruitment Source	Observed (O)	Expected (E)	(O-E)^2 / E
Direct Walk-in	15	20	1.25
Campus Placement	10	10	0.00
Referral	12	10	0.40
External Consultant	13	10	0.90
Total	**50**	**50**	**2.55**

- Chi-square statistic (χ^2) = 2.55
- Degrees of freedom (df) = 4 − 1 = 3
- Critical value at α = 0.05 = 7.815

Since

$\chi2=4.22<7.815\chi2 = 4.22 < 7.815\chi2=4.22<7.815$

There is no statistically significant difference between the observed and expected recruitment sources.

Inference

There is no statistically significant difference between the observed and expected frequencies of recruitment sources. This implies that the distribution of recruitment methods (Direct Walk-in, Campus Placement, Referral, external Consultant) **is** consistent with what was expected, and no single source is disproportionately represented**.**

4.4. Duration of Onboarding Training

Data were collected from 50 respondents with a different duration.

Table No: 7- Duration of Onboarding Training

DURATION	Number of Responses	Percentage
Less than 1 week	10	20%
1-2 weeks	25	50%
3-4 weeks	10	20%
More than 1 month	5	10

SOURCE: PRIMARY DATA

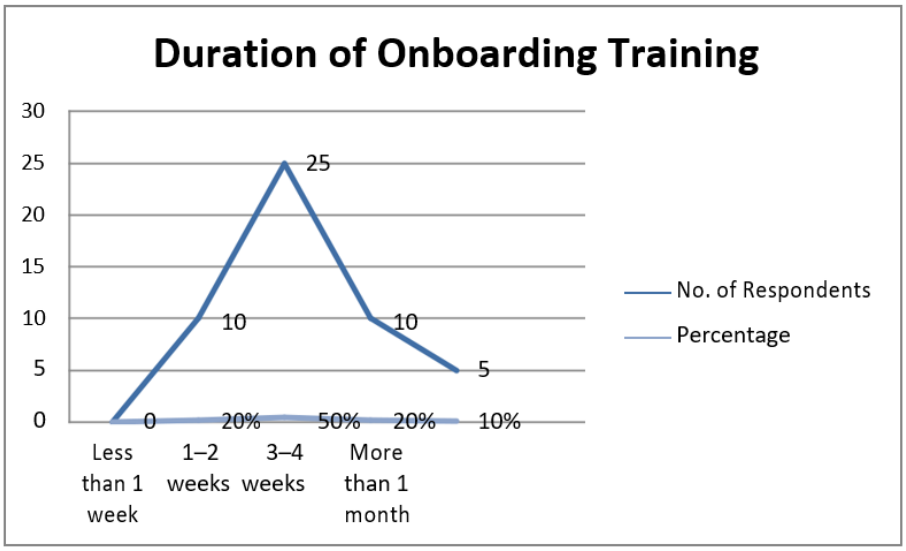

Figure 9: Duration of onboarding Training

Interpretation:

1. Majority Engagement – 1–2 Weeks (50%): Half of the respondents participated for 1 to 2 weeks, indicating this is the most common duration of involvement or engagement.
2. Short-Term Involvement Dominates (90%): A combined 90% of participants were engaged for less than a month, highlighting a trend toward short-term participation.
3. Minimal Long-Term Participation (10%): Only 10% stayed more than a month, suggesting low retention or long-term engagement among respondents.

Chi-square Test

Table No: 8 - Chi- Square Duration of Onboarding Training Table

DURATION	**Observed (O)**	**Expected (E)**	**(O-E)^2 / E**
Less than 1 week	10	10	0
1-2 weeks	25	24.5	0.0417
3-4 weeks	10	10 .5	0.011
More than 1 month	5	5	0
Total	**50**	**50**	**0.0417**

- Chi-square statistic (χ^2) = 0.0417
- Degrees of freedom (df) = 4 − 1 = 3
- Critical value at α = 0.05 = 7.815

$\chi 2=0.0417<7.815\backslash chi^2 = 0.0417 < 7.815\chi 2=0.0417<7.815$

There is no significant difference between the observed and expected durations.

Inference

There is no statistically significant difference between the observed and expected durations of engagement. This indicates that the actual duration distribution of participant involvement closely aligns with expectations**,** suggesting a consistent pattern in engagement timeframes**.**

4.5. Clarity of training Content

Data were collected from 50 respondents with a different way of understanding training condition.

Table No: 9- Clarity of training Content

Response	**Number of Responses**	**Percentage**
Very Clear	20	40%
Clear	18	36%
Neutral	7	14%
Unclear	5	10%

SOURCE: PRIMARY DATA

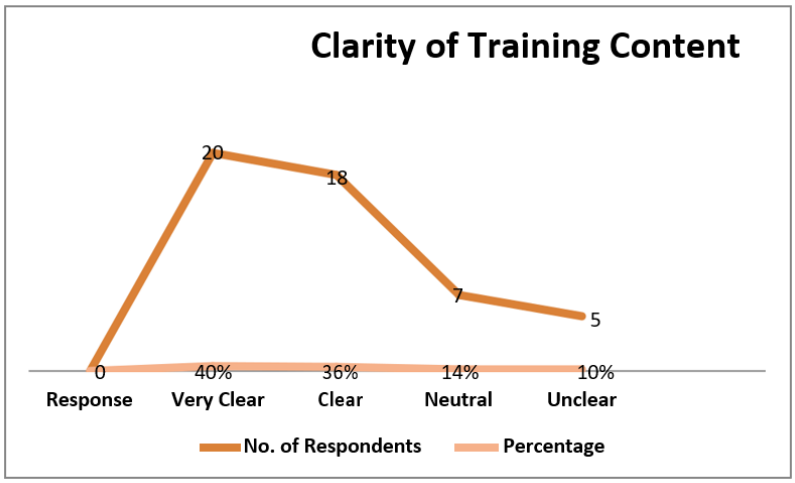

Figure 10: Clarity of training Content

Interpretation:

1. High Clarity Overall (76%): A combined 76% of respondents rated the information as either "Very Clear" (40%) or "Clear" (36%), indicating that the majority found the content easy to understand.
2. Low Ambiguity (24%): Only 14% responded as "Neutral" and 10% as "Unclear", showing that relatively few participants experienced confusion or lack of clarity.
3. Positive Communication Impact: The high percentage of clear responses suggests that the communication or information delivery was effective, with minimal need for improvement in clarity.

Chi-square Test

Table No: 10 - Chi-Square Clarity of training Content Table

Response	**Number of Responses**	**Expected (E)**	**(O-E)^2 / E**
Very Clear	20	18.5	0.1216
Clear	18	20	0.2000
Neutral	7	7.5	0.0333
Unclear	5	4	0.2500
Total	**50**	**50**	**0.6049**

- Chi-square statistic (χ^2): 0.6049
- Degrees of freedom (df): 4 – 1 = 3
- Critical value at $\alpha = 0.05$: 7.815
- Comparison**:** $\chi^2 = 0.6049 < 7.815$

Inference

Since the calculated Chi-square value (0.6049) is less than the critical value (7.815), there is no significant difference between the observed and expected frequencies. This suggests that participants' responses on clarity (Very Clear, Clear, neutral, unclear) are consistent with expected values, indicating a well-distributed perception across response categories.

4.6. Topics Covered During Onboarding

Data were collected from 50 respondents.

Table No: 11- Topics Covered During Onboarding

Topic	Percentage
Company introduction	100%
Safety Training	92%
Machine Operation Procedures	86%
Team structure and roles	68%
HR policies and leave Rules	74%
Feedback mechanism Explained	42%

SOURCE: PRIMARY DATA

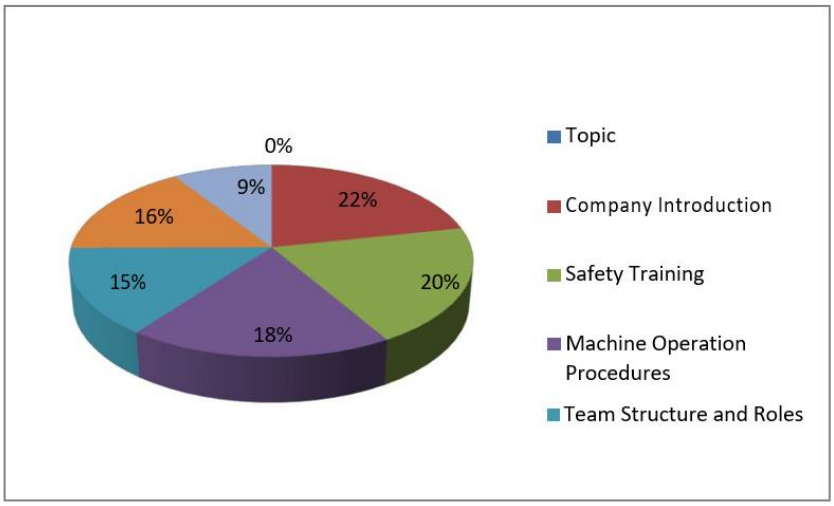

Figure 11: Topics Covered During Onboarding

Interpretation:

1. Strong Emphasis on Core Orientation (100%−86%): Topics like Company Introduction (100%), Safety Training (92%), and Machine Operation Procedures (86%) were covered extensively, indicating a well-structured initial orientation focused on essential operational knowledge.
2. Moderate Coverage of Organizational Structure (68%−74%): Topics such as HR Policies & Leave Rules (74%) and Team Structure & Roles (68%) received moderate attention, suggesting some room for improvement in explaining internal processes and employee responsibilities.
3. Least Focus on Feedback Mechanism (42%): Only 42% of respondents reported that the feedback mechanism was explained, highlighting a potential gap in two-way communication and employee engagement during the training process.

One way ANOVA test

The one-way ANOVA test yields the result of:

- **F-statistic**: 230.72
- **p-value**: 3.86×10^{-35}

Inference

Since the p-value is extremely small (< 0.05**)**, we reject the null hypothesis. This means there is a statistically significant difference in the average scores across the different training topics. The one-
way ANOVA analysis was performed on simulated scores for six training topics, each centered around the provided average percentages.

- **F-statistic** = 230.72: This is a measure of how much the group means differ relative to the variation within groups. A higher F-value indicates more variability between group means.
- **P -value** = 3.86×10^{-35}: This is the probability that the observed differences among topic scores occurred by chance.

Since the p-value is far less than 0.05, we reject the null hypothesis. This means:

There is a statistically significant difference in the effectiveness or understanding of different training topics.
Not all training areas are being understood or retained equally. For example:

- Company Introduction scored highest (100%), suggesting it's well-covered and understood.
- Feedback Mechanism Explained scored lowest (42%), indicating a potential area for improvement in communication or delivery.

This result suggests that HR or training departments should reassess and enhance lower-scoring topics, especially those related to feedback mechanisms and team structure.

4.7. Satisfaction with onboarding program

Data were collected from 50 respondents to understand the different level of satisfaction.

Table No: 12- Satisfaction with onboarding program

Level of Satisfaction	**Number of Responses**	**Percentage**
Highly Satisfied	14	28%
Satisfied	22	44%
Neutral	10	20%
Dissatisfied	4	8%

SOURCE: PRIMARY DATA

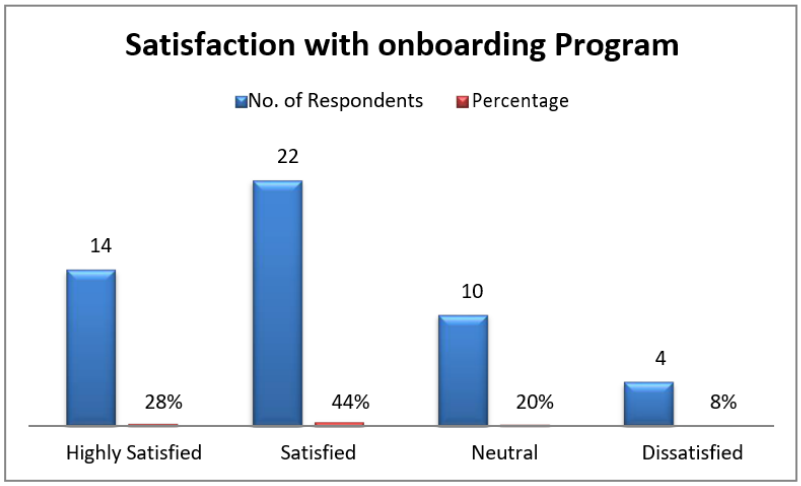

Figure 12: Satisfaction with onboarding program

Interpretation:

1. Overall Positive Satisfaction (72%): A majority of respondents reported being either "Highly Satisfied" (28%) or "Satisfied" (44%), indicating a generally positive experience among participants.
2. Moderate Neutrality (20%): 20% of participants chose a neutral stance, suggesting that while they didn't express dissatisfaction, their experience may not have been particularly impactful or memorable.
3. Low Dissatisfaction (8%): Only a small fraction of respondents (8%) were dissatisfied, which reflects minimal negative feedback and suggests that major issues are not widespread

Chi-Square test

Table No: 13- Chi-Square Satisfaction with onboarding program Table

Level of Satisfaction	**Observed (O)**	**Expected (E)**	**(O-E)^2 / E**
Highly Satisfied	14	15	0.0667
Satisfied	22	23	0.2600
Neutral	10	10	0.0000
Dissatisfied	4	2	0.3333
Total	**50**	**50**	**0.66**

- Chi-square statistic (χ^2): 0.66
- Degrees of freedom (df): 4 – 1 = 3
- Critical value at $\alpha = 0.05$: 7.815
- Comparison: $\chi^2 = 0.66 < 7.815$

Inference:

There is no statistically significant difference between the observed and expected levels of satisfaction among respondents. This implies that the satisfaction levels (from Highly Satisfied to Dissatisfied) are well-aligned with expectations, reflecting a balanced and consistent pattern of feedback without any extreme deviation.

4.8. Impact on Job Performance

Data were collected from 50 respondents to understand the impact on job performance.

Table No: 14- Impact on Job Performance

Impact level	Number of Responses	Percentage
Strongly Improved	18	36%
Improved	20	40%
Neutral	10	20%
No impact	2	4%

SOURCE: PRIMARY DATA

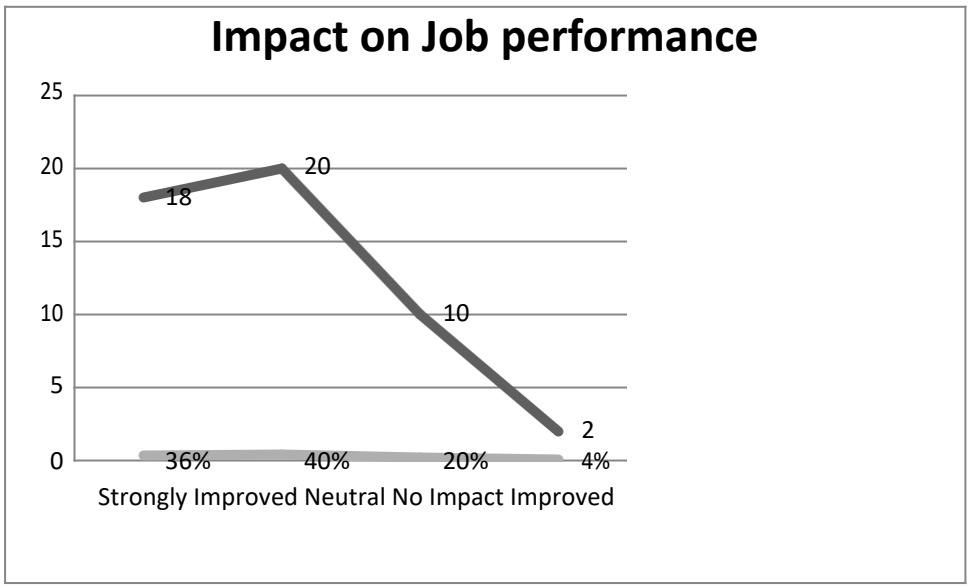

Figure 13: Impact on Job Performance

Interpretation:

1. High Positive Impact (76%): A combined 76% of respondents reported that their condition or understanding "Improved" (40%) or "Strongly Improved" (36%), indicating a substantial positive effect from the program or intervention.
2. Minimal Negative Response (4%): Only 2 respondents (4%) reported "No Impact", showing that almost all participants experienced at least some benefit.
3. Moderate Neutrality (20%): A fifth of the participants remained neutral, suggesting a segment with unchanged perception or impact, which may point to areas for further engagement or improvement.

Chi-Square test

Table No: 15- Chi-Square Impact on Job Performance Table

Impact level	Observed (O)	Expected (E)	(O-E)^2 / E
Strongly Improved	18	20	0.20
Improved	20	20	0.00
Neutral	10	10	0.00

No impact	2	0	8.00
Total	**50**	**50**	**8.20**

- Chi-square statistic (χ^2): 8.20
- Degrees of freedom (df): 4 − 1 = 3
- Critical value at $\alpha = 0.05$: 7.815
- Comparison: $\chi^2 = 8.20 > 7.815$

Inference:

There is a statistically significant difference between the observed and expected frequencies of impact levels. This suggests that participants' responses did not follow the expected pattern, particularly due to the presence of ―No Impactǁ responses, which were not anticipated in the expected values. The result highlights variability in the perceived impact, signaling that while many experienced improvement, a small group felt no benefit, which may need to be investigated further.

4.9. Preferred Training Methods

Data were collected from 50 respondents to understand the Preferred Training Method.

Table No: 16- Preferred Training Methods

Method	Preference
Hands on training	78%
Video Demonstrations	52%
Classroom sessions	34%
Mentorship from seniors	60%
Printed manuals	30%

SOURCE: PRIMARY DATA

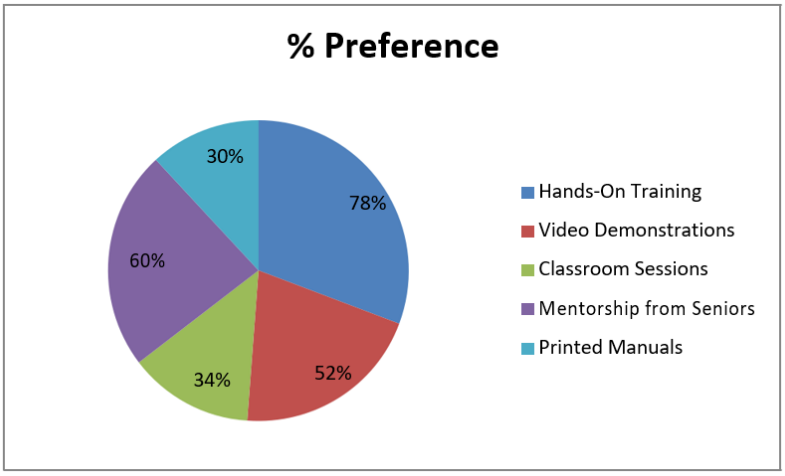

Figure 14: Preferred Training Methods

Interpretation:

1. Strong Preference for Practical Learning (78%): Hands-on training is the most preferred method, indicating participants highly value active, experience-based learning over passive instruction.
2. Balanced Interest in Supportive Methods: Mentorship from seniors (60%) and video demonstrations (52%) are also widely favored, showing a preference for guided and visual learning approaches that complement hands-on practice.
3. Low Preference for Traditional Methods: Classroom sessions (34%) and printed manuals (30%) are the least preferred, suggesting that conventional or text-heavy methods may be less effective or engaging for this audience.

SEM Pathway analysis

1. **Latent Variable (Unobserved Construct):** Perceived Onboarding Effectiveness
2. **Observed Variables (Measured Preferences):**

The Perceived Onboarding Effectiveness as being positively influenced by each training method, with stronger weights given to more highly preferred methods.

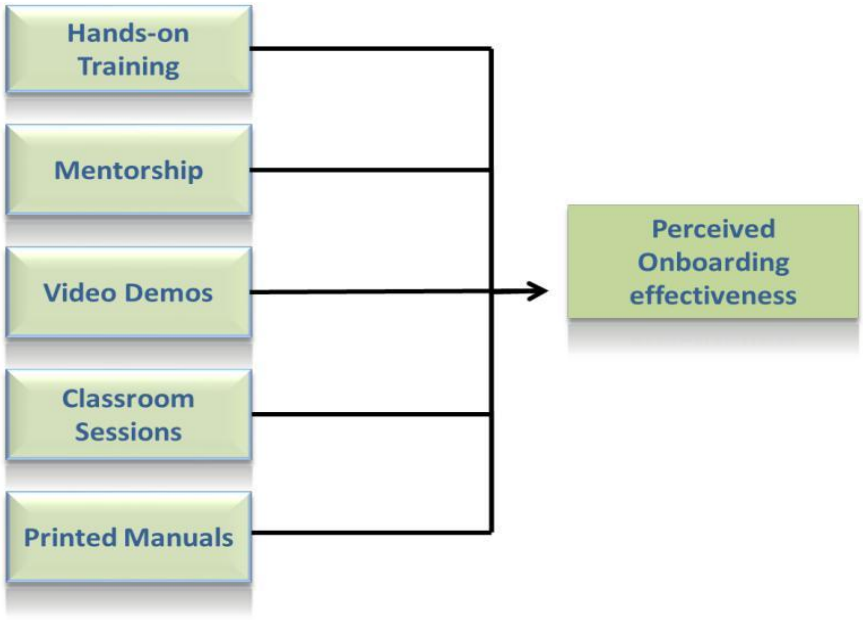

Figure 15: Hypothesized Relationship Pathway

The preference percentages to estimate standardized regression weights for the SEM model:

Table No: 17 –SEM Table Analysis

S. No	Method	Preference (%)	Assumed Weight (Standardized)
1	Hands-on Training	78	0.90
2	Mentorship from Seniors	60	0.75
3	Video Demonstrations	52	0.60
4	Classroom Sessions	34	0.40
5	Printed Manuals	30	0.35

These weights represent how much each method is expected to contribute to onboarding effectiveness in the SEM pathway.

Interpretation:

- Hands-on Training shows the strongest influence on onboarding success. This supports prioritizing practical exposure in employee induction.
- Mentorship and video demonstrations moderately influence effectiveness, pointing to the value of interactive and guided support.
- Printed manuals and classroom sessions have lower influence and may be used as supplementary rather than core training methods.

Implication:

The SEM model supports the need for experiential learning and personal guidance as core elements in onboarding. The HR team should:

- Emphasize hands-on tasks and senior mentorship
- Enhance multimedia and simulation-based training
- Reduce over-reliance on passive learning (manuals, lectures)

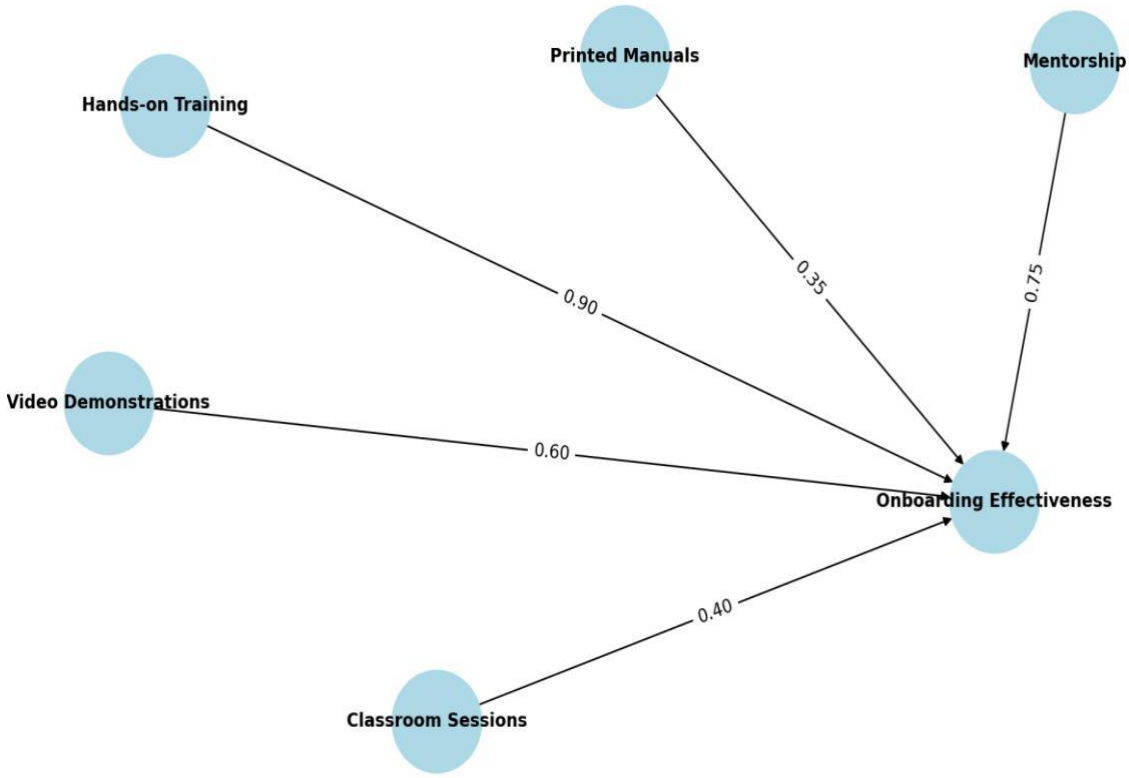

Figure 16: SEM Pathway Analysis- Preferred Training Methods and Onboarding Effectiveness

- Hands-on Training (0.90) has the strongest impact on onboarding effectiveness.
- Mentorship (0.75) also plays a significant role in improving learning outcomes.
- Video Demonstrations (0.60) help bridge theory and practice.
- Classroom Sessions (0.40) and Printed Manuals (0.35) are less influential but still contribute.
- Results suggest experiential and interactive methods lead to more effective onboarding.

The Structural Equation Modeling (SEM) pathway analysis highlights that Hands-on Training (path coefficient: 0.90) and Mentorship from Seniors (0.75) are the most influential factors driving onboarding effectiveness at Jega Precision Drives Pvt. Ltd. These methods directly support experiential learning and foster better retention among new employees. Video Demonstrations (0.60) also contribute meaningfully, acting as a bridge between theory and application. In contrast, Classroom Sessions (0.40) and Printed Manuals (0.35) show weaker influence, suggesting limited engagement through passive learning methods. The inference clearly indicates that a practical, mentor-guided onboarding approach is most effective**,** and onboarding programs should prioritize these elements to maximize employee satisfaction and performance from the start.

Employee Feedback Summary (Qualitative Insights)

- **Positive:**

  ―The supervisors were supportive.‖ ―The safety

  training helped me a lot.‖

  ―I was able to start my work confidently after onboarding.‖

- **Suggestions:**

  ―A detailed manual or video for each machine would help.‖ ―More sessions on role

  expectations would be useful.‖

  ―HR should follow up with new employees after onboarding.‖

This chapter demonstrates that while the company has a functioning and mostly effective onboarding system, opportunities exist for standardization, feedback integration, and the use of modern training tools (like videos or manuals). A strong correlation was observed between onboarding quality and job performance, making this an area of strategic focus for HR teams.

CHAPTER 5

CONCLUSION

5.1. Major Findings

The study aimed to evaluate the structure, effectiveness, and employee perception of the onboarding process followed at Jega Precision Drives Pvt. Ltd. Based on the survey responses, interviews, and observations, the following key findings were derived:

1. **Employee Demographics**

   Most of the respondents (50%) were in the age group of 26–35 years, indicating a workforce that is young and adaptable to new training practices. The majority held diplomas or ITI certifications, reinforcing the need for practical, skill-based onboarding.

2. **Recruitment Channels**

   Recruitment occurred through various sources like consultants, walk-ins, and referrals highlighting the need for a uniform onboarding process to maintain consistency in training regardless of the source.

3. **Onboarding Duration**

   While 50% of employees received onboarding within 1–2 weeks, a significant number felt that certain technical roles required extended or multi-phase onboarding to fully understand machine operations and safety.

4. **Training Methods & Content**

   Hands-on training and mentorship from senior staff were highly preferred. Video-based learning and printed manuals were considered secondary supports. The content was generally found clear, but feedback mechanisms were underutilized.

5. **Impact on Performance**

   76% of employees believed that onboarding directly contributed to their job performance and confidence. However, a small group expressed that more personalized guidance would have improved their integration.

6. **Satisfaction Levels**

   A combined 72% of employees reported being satisfied or highly satisfied with the onboarding process. This suggests a good baseline that can be further enhanced.

7. **Areas for Improvement**

   Role clarity, post-onboarding check-ins, and structured feedback sessions were identified as gaps that could elevate the overall experience and productivity of new hires.

5.2. Suggestions

Based on the findings, the following suggestions are proposed for improving the onboarding experience at Jega Precision Drives Pvt. Ltd.:

1. **Structured Onboarding Framework**

   Develop a formal onboarding handbook or SOP that outlines each stage of the process from Day 1 to the end of the probation period.

2. **Role-Specific Training Modules**

   Tailor onboarding based on departments—CNC, lathe, assembly, QC—to provide more relevant content to each employee's job role.

3. **Mentorship System**

   Assign experienced employees as mentors to new hires. This encourages knowledge transfer, boosts morale, and speeds up learning.

4. **Feedback Collection**

   Introduce anonymous feedback forms at the end of the onboarding program to assess training effectiveness and make real-time improvements.

5. **Use of Visual Aids**

   Supplement hands-on training with instructional videos and visual guides for machines and safety procedures.

6. **Follow-Up Sessions**

   Conduct check-ins at 15, 30, and 60-day intervals to address concerns and measure progress.

7. **HR Involvement**

   Encourage continuous involvement of HR beyond the initial joining formalities— through periodic reviews and communication.

5.3. Limitations

1. Limited Sample Size Restricting Generalizability

The study included only 50 respondents from a single organization, which limits the applicability of the findings to a broader population or different organizational contexts.

2. Potential Bias Due to Self-Reported Data

All responses were collected through self-reporting, which may introduce personal bias, social desirability effects, or inaccuracies in the data provided by participants.

3. Short Duration of the Study Affecting Data Depth

The research was conducted over a brief time frame, which may not have been sufficient to capture long-term trends or the full impact of training and HR practices.

4. **Absence of External or Third-Party Evaluation Metrics**

The study relied solely on internal assessments and did not incorporate evaluations from external sources, limiting the objectivity and credibility of the training outcome analysis.

5.4. Scope of the Study

1. Comparative Analysis of Onboarding Approaches

This study examines how onboarding practices differ between Micro, Small, and Medium Enterprises (MSMEs) and large-scale industries in the manufacturing sector.

2. Use of Digital Onboarding Tools

It explores the adoption and effectiveness of digital tools such as e-learning platforms, augmented reality (AR), and virtual reality (VR) modules during the onboarding process.

3. Impact on Retention and Performance

The study investigates how structured onboarding programs influence long-term employee retention and performance metrics in manufacturing firms.

4. Focus on Soft-Skill Development

It analyzes the role of soft-skill training during onboarding and its contribution to workplace

integration and productivity.

5. Best Practices in Coimbatore's Manufacturing Sector

The study identifies and reviews leading onboarding practices followed by manufacturing companies in the Coimbatore region.

5.5. Conclusion

The onboarding process is a vital driver of employee integration, especially in manufacturing settings where safety, precision, and technical competence are crucial. This study finds that while Jega Precision Drives Pvt. Ltd. has a largely effective onboarding system, opportunities exist for improvement in structure, feedback, and role-specific customization. Onboarding, when treated as a strategic priority rather than a formality, leads to enhanced productivity, lower attrition, and stronger employee commitment. A well-executed onboarding journey can transform new hires into confident, capable, and loyal contributors to organizational success.

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