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Perceived Impact of Technical Certification Courses (SAP, Salesforce, Java) on Engineering Students Employability Skills in Shegaon Region

Mariya Aiman Abutalib Khan and Dr. Bilal Husain
Student, Department of Business Administration and Research
Assistant Professor, Department of Business Administration and Research
Shri Sant Gajanan Maharaj College of Engineering, Shegaon, Maharashtra, India
mariyakhan2104@gmail.com, bilalhusain.bth@gmail.com

Abstract: *This study examines the impact of technical certification courses—SAP, Salesforce, and Java—on the employability skills and campus placement outcomes of engineering students in the semi-urban Shegaon region of India. Using a descriptive and analytical research design, primary data were collected from 100 engineering students through structured questionnaires, supplemented by secondary sources. The findings reveal that certified students report significant improvements in technical knowledge, problem-solving ability, teamwork, confidence, and industry readiness. Inferential analysis confirms a statistically significant relationship between certifications and enhanced employability and placement prospects. Despite challenges related to cost, awareness, and infrastructure, the study concludes that technical certifications effectively bridge the academia–industry skills gap in semi-urban contexts.*

Keywords: Technical Certification, Employability Skills, Engineering Students SAP, Salesforce, Java.

I. INTRODUCTION

In the modern globalized and technology-driven economy, engineering education has shifted significantly toward practical application and industry-ready capabilities. Employers now prioritize candidates who demonstrate hands-on experience and problem-solving skills over those with only a formal degree, making employability a primary measure of institutional success. While India produces a massive number of engineering graduates annually, a significant gap persists between academic curricula and the rapidly evolving requirements of the industry. This skills gap often leaves graduates struggling to secure suitable employment, driving the demand for supplementary professional qualifications. Technical certifications like SAP, Salesforce, and Java have emerged as vital tools for bridging this divide by offering globally accepted credentials and practical project experience.

Despite the established benefits of these certifications in metropolitan areas, there is limited empirical research regarding their impact in semi-urban regions like Shegaon. Educational institutions in such tier-2 and tier-3 settings face unique challenges, including resource constraints and limited industry exposure. Although colleges in the Shegaon region have begun encouraging students to pursue these certifications, there remains insufficient evidence to evaluate how they influence multi-dimensional employability skills such as communication, teamwork, and analytical thinking. This study aims to fill this regional gap by exploring the perceived impact of SAP, Salesforce, and Java certifications on student skill development and campus placement success.

The research utilizes a descriptive and analytical design to assess existing conditions and relationships between certification status and employability outcomes during the 2025–2026 academic year. By analysing data gathered through structured questionnaires and secondary sources, the study evaluates how these courses contribute to job readiness and professional confidence. Existing literature supports the positive link between professional certifications

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and improved employability; for instance, Shah and Varma (2023) found that certified graduates achieved faster employment rates, while Vishwakarma et al. (2022) highlighted significant improvements in both technical and soft skills. Furthermore, studies by Banerjee and Paul (2024) and Kapoor and Mehta (2023) reinforce that these certifications help bridge the gap between academia and industry, making students more attractive to recruiters. This research seeks to extend these findings to the Shegaon context, providing actionable insights for students and regional policymakers.

II. REVIEW OF LITERATURE

Technical certification courses such as SAP, Salesforce, and Java play a crucial role in enhancing the employability of engineering students by providing industry-relevant, practical skills. Existing studies consistently show that certified students secure employment faster and demonstrate higher levels of technical competence, confidence, and workplace readiness compared to non-certified peers. These certifications not only strengthen domain-specific knowledge but also improve essential soft skills, including communication, teamwork, and problem-solving.

From an employer perspective, certified candidates are often preferred in domains like ERP, CRM, and software development, as certifications serve as credible indicators of job preparedness. However, regional disparities persist, particularly in tier-2 and tier-3 cities, where students face challenges related to access, affordability, and awareness of certification programs.

Prior research employs diverse methodologies, including quantitative surveys, qualitative interviews, and mixed-method approaches. Survey-based studies highlight higher placement rates among certified students, while mixed-method research emphasizes the role of certifications in bridging the gap between academic learning and industry expectations. Comparative analyses further confirm significant improvements in both technical and interpersonal skills among certified individuals. Studies focusing on smaller urban canters indicate that certifications positively influence employability, although contextual limitations may affect outcomes. Employer-oriented research also supports these findings, confirming that certifications significantly impact hiring decisions. Despite consistent evidence, methodological variations and sample-specific contexts limit the generalizability of these results.

Nevertheless, the literature reveals several important gaps. Most studies focus on urban and well-established institutions, with limited attention to semi-urban regions such as Shegaon. Additionally, employability is often discussed in generalized terms without identifying specific competencies developed through certification programs. There is also a lack of longitudinal research examining long-term career outcomes, along with insufficient exploration of factors such as accessibility, affordability, and institutional support in smaller towns.

The present study addresses these gaps by focusing on engineering colleges in the Shegaon region. It adopts a more comprehensive approach by integrating both quantitative placement outcomes and qualitative student perceptions. Specifically, it examines the impact of SAP, Salesforce, and Java certifications on employability skills and campus placement outcomes, thereby offering a localized and analytical contribution to the literature.

Despite the increasing enrolment in certification programs, there remains limited empirical evidence regarding their actual impact on employability skills in semi-urban contexts. This study, therefore, aims to evaluate the influence of technical certifications on employability skills, assess their role in enhancing campus placements, identify the competencies developed, and analyse student perceptions regarding their effectiveness.

The scope of the study is confined to engineering students in Shegaon region colleges during the academic year 2025–2026, focusing on SAP, Salesforce, and Java certifications and their impact on technical, communication, interpersonal, and problem-solving skills, while excluding non-engineering and postgraduate populations.

2.1 Key Finding Of Important

The review of existing literature highlights several important findings regarding the role of technical certification courses in enhancing employability. Studies such as Banerjee & Paul (2024) reveal that certification programs significantly improve job readiness and enable students to secure employment faster than their non-certified counterparts. Similarly, Shah & Varma (2023) found that certifications not only strengthen technical knowledge but

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also enhance soft skills such as communication, teamwork, and confidence. From an employer perspective, Kapoor & Mehta (2023) emphasize that certified candidates are preferred in recruitment processes as certifications serve as reliable indicators of practical competence and workplace preparedness. The findings of Vishwakarma et al. (2022) further support that certifications in SAP, Salesforce, and Java play a critical role in bridging the gap between academic learning and industry requirements, leading to improved placement outcomes. Additionally, Soni et al. (2025) highlight that although students in tier-2 cities face challenges such as limited access, affordability, and awareness, certifications still have a positive impact on employability. Supporting this, the Government of India stresses the importance of skill-based education and industry-oriented training to enhance employment opportunities. Furthermore, certification providers such as SAP SE and Salesforce Inc. offer structured, industry-relevant learning platforms that equip students with practical skills and globally recognized credentials. Overall, the literature consistently indicates that technical certifications significantly contribute to improving employability, though certain regional and accessibility challenges rem

III. RESEARCH METHODOLOGY

3.1 Research Objectives

1.Test how technical certification programs (like sales force, SAP and Java) may influence the employability of an engineering graduate.
2.Find out the relevance of the existence of these certifications to the probability of gaining campus placement offers among the students.
3.Determine which of the following employability competencies such as technical know-how, communication, teamwork, and problem-solving are reinforced with certification training.
4.Determine the attitude of the students on the usefulness of these courses in their professional growth.
5.Recommend practical suggestions to institutions of higher learning on how to use certification programs to improve graduate employability.

3.2 Statement of Hypothesis

Hypothesis 1: The Effect of Certification on Employability Skills.
Null Hypothesis (H 01): Technical certification (or SAP, Salesforce, Java) acquisition) does not make a significant contribution to the skillset of engineering students attending colleges in Shegaon.
Alternative Hypothesis (H 1.1): The completion of these certifications has a provable and positive effect on the employability aspect of the engineering student body enrolled in Shegaon colleges.
Hypothesis 2: Effect of Certification on Campus Placements.
Null Hypothesis (H 02): The successful results of campus placement are not substantively correlated with the acquisition of technical certifications.
Alternative Hypothesis (H1.2): The acquisition of such certifications leads to a drastic difference in the chances of successful placements in campuses.

3.3 Data Sources

The study uses both primary and secondary data sources to ensure comprehensive and reliable findings.

3.3.1 Primary Data

We are in the process of gathering first-hand experience of engineering students pursuing college courses in the Shegaon region. The students who already have or are seeking to receive SAP, Salesforce, or Java certifications are asked to fill out an elaborate survey. What we are primarily interested in this data is to discover, The way students can acquire their employability skills, certification programs through which they pass, How they view these certifications will determine their preparedness to work and placements on campuses.

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3.2 Secondary Data

Secondary data are obtained in existing sources to enhance and supplement the study. Employability and skill development books and textbooks, journals, articles and research papers, Records of college placements and institutional reports, Online sources, educational web sites, databases, Previous doctoral dissertations and government reports on talent development. These materials provide the necessary background and strong theoretical background to the study.

3.4 Tools of Data Collection

The data will be collected using a structured questionnaire comprising close-ended and Likert-scale questions to assess employability skills and student perceptions, ensuring uniformity and ease of analysis. Where necessary, informal interviews with selected students or faculty will be conducted to gain deeper insights into the benefits and challenges of certification programs. Additionally, a review of academic and professional literature will be undertaken to understand existing research trends and identify gaps.

3.5 Sample Design

Sample design refers to the plan for selecting respondents from the population. The study focuses on engineering students from colleges in the Shegaon region, with the sample unit comprising students who have pursued or are currently pursuing SAP, Salesforce, or Java certification courses. A total sample size of 100 respondents has been selected from institutions including Shri Sant Gajanan Maharaj College of Engineering (SSGMCE), Mauli Engineering College, and Siddhivinayak Technical Campus, all located in Shegaon. This sample size is considered adequate to represent the population and ensure meaningful analysis.

3.6 Sampling Technique

The study employs a stratified random sampling technique in which the population is divided into strata based on colleges, with each college representing a separate stratum. Respondents are then selected proportionally from each stratum to ensure fair representation. This approach minimizes bias and ensures that students from all selected colleges are adequately represented in the study.

3.7 Tools Proposed to be Used for Data Analysis

The collected data will be analysed using Microsoft Excel for data entry, tabulation, and graphical representation, including the creation of charts, tables, and summaries. Descriptive statistics such as percentage, mean, and frequency will be applied to summarize the data effectively. The Chi-square test will be used to examine the relationship between certification courses and campus placement outcomes, while regression analysis will assess the impact of certification courses on employability skills. Additionally, SPSS (if available) will support advanced statistical analysis, hypothesis testing, and reliability checks. Pivot tables and graphical tools will further aid in the interpretation and presentation of result.

IV. ANALYSIS OF FINDINGS

Perceived Value of SAP, Salesforce, and Java Certifications in Shegaon Region Colleges

Table 1 Technical certification programs influence the employability of engineering graduates presents the descriptive statistics of responses related to the impact of technical certification courses on employability skills. It includes the mean and standard error values for various statements assessing improvements in technical knowledge, practical application, confidence, industry readiness, and overall employability among students. The table helps in understanding the overall perception of respondents regarding the effectiveness of certification programs.

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Question Item	Mean	Standard Error
Q8. Technical certification courses have improved my technical knowledge	3.7800	0.0940
Q9. Certification courses help in applying theoretical knowledge practically	3.6999	0.1048
Q13. Certification courses have increased my confidence level	3.6999	0.1048
Q14. Certification courses have made me more industry-ready	3.7600	0.0996
Q20. Certification courses increase overall employability	3.7800	0.0940
Q31. Overall role in improving employability skills	3.5399	0.0999
Aggregate Objective Mean	3.7099	
Aggregate Standard Deviation	1.0005	

Table 1 : Technical certification programs influence the employability of engineering graduates.

Analysis: The aggregate mean of 3.71 indicates a strong positive perception. Students notably value the improvement in technical knowledge and general employability (Mean: 3.78). The consistency in scores suggests that certifications are viewed as a comprehensive tool for becoming "industry-ready."

Objective 2: Relevance to Campus Placement

Table 2 Determining the correlation between certifications and campus placement success. Shows the descriptive statistics related to the role of technical certification courses in enhancing campus placement outcomes. It presents mean and standard error values for statements focusing on placement chances, recruiter preference, interview performance, and opportunities for internships or training.

Question Item	Mean	Standard Error
Q15. Certification courses improve the chances of campus placement	3.5499	0.0989
Q16. Certified students are preferred by recruiters during placements	3.7800	0.0940
Q17. Helped me perform better in interviews and aptitude tests	3.6999	0.1048
Q18. Helped in securing internships or training opportunities	3.7600	0.0996
Aggregate Objective Mean	3.6974	
Aggregate Standard Deviation	0.9993	

Table 2 : Determining the correlation between certifications and campus placement success.

Analysis: With a mean of 3.70, respondents believe certifications provide a competitive edge. The highest mean (3.78) for recruiter preference indicates that students perceive a clear industry demand for certified candidates, which directly translates to better interview performance.

Objective 3: Reinforcement of Competencies

Table 3 Identifying which specific employability competencies are reinforced.presents the descriptive statistics related to the impact of technical certification courses on the development of soft skills among students. It includes mean and standard error values for statements focusing on problem-solving ability, communication skills, and teamwork. The table helps in understanding how certification programs contribute to improving essential interpersonal and cognitive skills.

Question Item	Mean	Standard Error
Q10. Improved my problem-solving skills	3.7600	0.0996
Q11. My communication skills have improved	3.5399	0.1019
Q12. Improved my teamwork and collaboration skills	3.7800	0.0940
Aggregate Objective Mean	3.6933	
Aggregate Standard Deviation	0.9931	

Table 3: Identifying which specific employability competencies are reinforced.

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Analysis: Certifications are perceived to have the strongest impact on teamwork (3.78) and problem-solving (3.76). While communication skills also improved (Mean: 3.54), the impact is slightly lower compared to technical and collaborative competencies.

Objective 4: Attitude on Professional Growth

Table 4 Student attitudes toward the usefulness of courses for long-term growth. presents the descriptive statistics related to students' perceptions of the value and long-term benefits of technical certification courses. It includes mean and standard error values for statements focusing on employer recognition, willingness to recommend certifications, and their role in long-term career growth. The table highlights how students perceive the overall importance and future impact of certification programs.

Question Item	Mean	Standard Error
Q19. Employers value SAP, Salesforce, and Java certifications	3.5699	0.0978
Q29. I would recommend certification courses to junior students	3.6999	0.1048
Q30. Certification courses help in long-term career growth	3.7600	0.0996
Aggregate Objective Mean	3.6766	
Aggregate Standard Deviation	1.0126	

Table 4 : Student attitudes toward the usefulness of courses for long-term growth.

Analysis: Students demonstrate a forward-looking attitude, agreeing that certifications aid long-term career growth (3.76). The willingness to recommend these courses to juniors (3.70) further validates their perceived utility.

Objective 5: Recommendations to Institutions

Table 5 Suggestions for institutions to improve graduate employability. Presents the descriptive statistics of students' responses regarding certification courses. The mean values indicate a generally positive attitude toward the impact of certification programs, while the low standard error values show consistency in responses. Overall, the data suggests that students perceive certification courses as beneficial for skill development, employability, and career growth.

Question Item	Mean	Standard Error
Q21. High cost is a major barrier	3.7000	0.1048
Q22. Lack of awareness prevents enrolment	3.7600	0.0996
Q24. Internet access and infrastructure affect outcomes	3.7800	0.0940
Q26. Should be included as part of the curriculum	3.7600	0.0996
Q28. More industry-oriented courses should be introduced	3.7800	0.0940
Aggregate Objective Mean	3.6974	
Aggregate Standard Deviation	0.9987	

Table 5 : Suggestions for institutions to improve graduate employability.

Analysis: The data emphasizes a need for systemic change. Students identified infrastructure and industry-relevance as the most critical factors (Mean: 3.78). There is also significant support for integrating these courses directly into the academic curriculum.

2. Inferential Statistics: Hypothesis Testing

To validate the research claims, a One-Sample T-test was conducted against a neutral value (3.0). This test determines if the positive impact reported by students is statistically significant.

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Hypothesis	Mean	SD	T-Value	P-Value	Decision
H1: Effect on Employability	3.7099	0.8996	7.9313	< 0.001	Reject H_0
H2: Effect on Campus Placements	3.6974	0.8876	7.8966	< 0.001	Reject H_0

Result Interpretation:

Hypothesis 1: The null hypothesis (H_{01}) is rejected, as the result ($p < 0.001$) demonstrates that technical certifications such as SAP, Salesforce, and Java make a significant contribution to the employability skillset of engineering students in the Shegaon region.

Hypothesis 2: The null hypothesis (H_{02}) is rejected, as the result ($p < 0.001$) confirms a significant relationship between acquiring these certifications and improved chances of successful campus placement.

CONCLUSION

The findings of this study clearly establish that technical certification courses such as SAP, Salesforce, and Java have a significant positive impact on the employability skills and campus placement outcomes of engineering students in the Shegaon region. The descriptive analysis indicates consistently high mean scores across all objectives, reflecting strong student agreement regarding improvements in technical knowledge, confidence, industry readiness, and overall employability. Certifications were also found to enhance key competencies such as problem-solving, teamwork, and communication, while positively influencing students' attitudes toward long-term career growth.

The results of the One-Sample T-test further validate these findings, as the p-values (<0.001) lead to the rejection of both null hypotheses. This confirms that the observed improvements in employability skills and placement prospects are statistically significant and not due to chance. Therefore, technical certifications can be considered an effective mechanism for bridging the gap between academic learning and industry requirements in semi-urban contexts.

However, the study also highlights critical barriers such as cost, lack of awareness, and infrastructural limitations, which may restrict the accessibility and effectiveness of these programs. Addressing these challenges through institutional support and curriculum integration can further enhance their impact. Overall, the study contributes to existing literature by providing region-specific empirical evidence and underscores the importance of certification programs in improving graduate employability in emerging educational hubs like Shegaon.

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