Global Journal of Engineering Innovations & Interdisciplinary Research

Original Article

Analyzing the Impact of Communication and Management Skills on Employability of Engineering Graduates: A Skill-Based Study

Neelima D[1], Dara Nagaraju[1], Adelli.Yakambram[1], Dr A Venu[2]

[1]Assistant Professor (ENGLISH), H&S Department, Christu Jyothi institute of Technology & Science, Hyderabad.
[2]Professor (Management), H & S Department, Christu Jyothi Institute of Technology & Science, Hyderabad.

Correspondence

Neelima D

Assistant Professor (ENGLISH), H&S Department, Christu Jyothi institute of Technology & Science

- Received Date: 11 Oct 2025
- Accepted Date: 04 Jan 2026
- Publication Date: 11 Jan 2026

Abstract

This research analyzes the impact of communication and management skills on the employability of engineering graduates using a skill-based quantitative approach. The study measures key employability-related competencies through structured indicators for communication and management skills and evaluates their relationship with employability outcomes such as job readiness and recruitment confidence. Comparative results show that graduates with higher communication skill levels demonstrate better employability scores, and a similar pattern is observed for management skill levels. Correlation findings further indicate a positive association between communication skills and employability, as well as between management skills and employability, highlighting that both skill sets contribute meaningfully to career readiness. Overall, the study emphasizes that employability among engineering graduates is strongly influenced not only by technical knowledge but also by transferable skills that improve professional interaction, coordination, and workplace performance.

Introduction

Background of the Study

Engineering education has traditionally focused on technical knowledge, problem-solving, and domain-specific expertise. However, employability in the modern job market is not determined only by what graduates know, but also by how effectively they communicate ideas and manage work in real organizational settings. Employers increasingly expect engineering graduates to operate in collaborative environments, coordinate with diverse teams, and translate technical work into outcomes that stakeholders can understand. This shift makes communication and management skills central to employability rather than optional add-ons.

Communication and Management Skills as Employability Drivers

Communication skills influence employability because they directly affect how engineering graduates perform in interviews, present project work, write professional documentation, and engage in teamwork. Communication is not limited to speaking fluently; it also involves clarity, listening, professional writing, and the ability to adapt messages to technical and non-technical audiences. In parallel, management skills shape employability by influencing time management, responsibility handling, coordination, and the ability to work systematically under deadlines. When graduates are weak in these areas, the gap becomes visible during hiring processes and early job performance even when technical competence is present.

Need for the Study

There is a consistent concern across industry and higher education discussions that engineering graduates often struggle with career readiness due to skill gaps beyond technical knowledge. Many employers consider competencies like communication, teamwork, leadership, and professionalism as essential factors when selecting candidates, which means soft skill levels can determine whether a graduate is employable even before technical evaluations begin. This creates a strong case for research that measures these skills in a structured way and links them to employability outcomes.

Problem Statement

Despite being academically qualified, a significant number of engineering graduates face difficulties in securing employment because they are unable to demonstrate the professional skills required in interviews, internships, and workplace contexts. This includes challenges in expressing ideas clearly, coordinating within teams, handling conflicts, managing time, and planning project tasks

Citation: Neelima D, Dara N, Adelli.Y, Venu A. Analyzing the Impact of Communication and Management Skills on Employability of Engineering Graduates: A Skill-Based Study. GJEIIR. 2026;6(1):0130.

effectively. As recruitment processes increasingly assess both technical and transferable competencies, graduates with weaker communication and management abilities may be filtered out early, reducing their employability despite meeting academic requirements.

Aim of the Study

The aim of this research is to analyze the impact of communication skills and management skills on the employability of engineering graduates through a skill-based study. The study focuses on identifying whether these skills significantly influence employability indicators and to what extent they act as predictors of employability outcomes in the graduate job market.

Objectives of the Study

This study is designed to assess the level of communication skills and management skills among engineering graduates and examine how these skills relate to employability outcomes such as placement success, interview readiness, and workplace preparedness. It also aims to identify the specific sub-skills within communication and management domains that contribute most strongly to employability so that targeted improvements can be recommended for students and institutions.

Research Questions

This research addresses key questions related to employability and skills, including whether communication skills significantly influence employability, whether management skills significantly influence employability, and whether a combined skill model predicts employability more effectively than either skill category alone. These questions align with how employers evaluate graduates in real hiring contexts, where communication and leadership-related skills are repeatedly emphasized as high-value competencies.

Scope of the Study

The scope of this research is limited to engineering graduates or final-year engineering students who are preparing to enter the job market. It focuses specifically on skill variables related to communication and management, treating employability as the measurable outcome. The study does not attempt to replace technical evaluation but instead examines employability from a complementary angle by analyzing skill readiness that supports workplace integration, teamwork, and performance.

Significance of the Study

This research is significant because it contributes to understanding employability through a measurable skills framework rather than relying only on academic performance or placement statistics. For students, it highlights the exact skills that improve job outcomes and career readiness. For institutions, it supports curriculum enhancement and training programs that better align graduate capabilities with industry expectations. For employers, it provides a structured view of how communication and management skills influence job performance readiness, supporting more informed hiring and training practices.

Structure of the Research Article

The research article is organized into chapters that reflect a standard scholarly structure. It begins with the introduction, followed by a literature survey that examines prior research on employability, communication skills, and management skills. The methodology chapter explains research design, sample, data collection, and analysis methods. The implementation chapter describes how the study is executed and how variables are measured. Finally, the results and discussion chapter presents statistical findings and interprets them in the context of existing research, ending with conclusions and practical recommendations.

Literature Survey

Understanding Employability in Higher Education

Employability has evolved from a narrow idea of simply getting a job into a broader concept that includes the capacity to sustain employment, adapt to workplace demands, and grow professionally. A widely accepted framing describes employability as a combination of achievements, skills, understandings, and personal attributes that increase a graduate's likelihood of gaining employment and succeeding in their chosen occupation. This definition is important because it positions employability as something that can be developed through education and experience rather than being treated as an outcome based only on academic marks or technical performance.

Employability as Skills, Identity, and Process

Many studies argue that employability cannot be fully understood if it is treated only as a "skills possession" issue. One influential perspective explains employability as a dynamic process shaped by how graduates present themselves, align with workplace expectations, and develop professional identity over time. This view matters because it highlights that even if a graduate has technical expertise, employability still depends on how well they communicate competence, manage professional relationships, and operate confidently in organizational settings. These discussions create a strong foundation for studying communication and management skills as employability drivers, since they directly influence the graduate's ability to be perceived as job-ready.

Communication Skills and Employability Outcomes

Communication skills are consistently identified as one of the most important employability factors across industries, especially for fresh graduates entering structured work environments. Research focusing on engineering graduates emphasizes that communication competence influences interview performance, workplace coordination, teamwork efficiency, and the ability to explain technical work to non-technical stakeholders. In employability contexts, communication is not limited to speaking fluently, but also includes listening skills, clarity, confidence, and the ability to adapt communication style based on professional settings. Because hiring and promotion often depend on visibility and interaction, communication becomes a key differentiator even in engineering fields that are heavily technical.

Employer Expectations and Communication Gaps in Engineering Graduates

A repeated concern in the literature is the mismatch between what employers expect and what graduates demonstrate during recruitment and early employment stages. Several studies report that employers rank communication and other transferable skills as highly important, sometimes even more than core technical abilities for entry-level roles. This gap becomes visible in recruitment processes where graduates may struggle with professional speaking, responding in interviews, presenting project work, or participating effectively in group discussions. Such findings support the argument that communication skill development should be treated as a measurable employability factor rather than an optional personality trait.

Management Skills as an Employability Predictor

Management skills in employability studies typically include self-management, time management, coordination, leadership, and the ability to work systematically within deadlines. These competencies influence whether graduates can perform consistently under pressure and integrate smoothly into structured workflows. In engineering work environments where task scheduling, collaboration, and coordination are everyday requirements, management skills play a direct role in job performance readiness. Literature indicates that graduates with better organization and leadership behaviors tend to show stronger workplace adjustment and better early career outcomes, which naturally strengthens the employability connection.

Transferable Skills and Graduate Readiness Models

Modern employability frameworks increasingly emphasize transferable skills such as communication, leadership, teamwork, professionalism, and self-management. These skills are treated as core competencies for career readiness because they are relevant across job roles and industries, including technical engineering positions. Employability models suggest that universities should embed these competencies into learning experiences so that students develop them alongside technical competence. This literature strengthens the logic of studying communication and management skills together, because they represent two of the most frequently highlighted employability contributors in competency-driven models.

Engineering Employability Studies and Soft Skill Priorities

A significant portion of research that focuses specifically on engineering graduates concludes that employability is strongly influenced by soft skills, particularly communication, teamwork, and leadership. Studies on engineering employability skills consistently highlight that graduates benefit when institutions support structured skill development through training, workshops, project presentations, and industry-focused activities. This body of research reinforces that employability is shaped not only by subject knowledge but also by the graduate's ability to demonstrate competence in interpersonal and work management contexts.

The Relationship Between Communication Skills, Management Skills, and Employability

While communication and management skills are often discussed separately in employability research, multiple studies suggest they operate together in real workplace contexts. Communication is essential for collaboration and reporting, while management skills enable planning, execution, and responsibility ownership. In practice, engineering graduates need both to function effectively in internships, entry-level roles, and team-driven environments. The combined influence of these skill sets explains why employers value candidates who can coordinate tasks, communicate progress, and manage interactions smoothly, making these variables suitable for impact analysis in a skill-based employability study.

Research Gap and Justification for the Present Study

Even though many studies establish that employability is affected by transferable skills, the literature reveals a recurring need for more structured and measurable models that quantify specific skill categories and link them directly to employability outcomes. Some research focuses broadly on employability skills without isolating communication and management skill dimensions as distinct predictors, while other work highlights skill importance but does not connect it to measurable employability indicators in a predictive way. This gap supports the relevance of a focused study that examines communication and management skills as measurable factors influencing employability of engineering graduates.

Research Methodology

Research Design

This study follows a quantitative research design to examine the relationship between communication skills, management skills, and the employability of engineering graduates. A quantitative approach is appropriate because it supports objective measurement of skill levels and allows statistical testing of how strongly these skills influence employability outcomes. Since employability is increasingly understood as a combination of skills, personal attributes, and the ability to demonstrate these assets in the labor market, a skill-based model provides a structured way to evaluate graduate readiness in measurable terms.

Conceptual Framework of the Study

The conceptual foundation of this research is based on employability frameworks that treat employability as a developable construct built through competencies and learning experiences. In particular, competency-based models used in higher education emphasize communication, teamwork, leadership, professionalism, and career self-development as essential components of job readiness. Since engineering graduates must operate in team environments, participate in project delivery, and communicate their work clearly to both technical and non-technical stakeholders, communication and management skills are positioned as key independent variables in this study's employability framework.

Variables of the Study

The study is built around independent and dependent variables that reflect measurable skill constructs and employability outcomes. Communication skills and management skills are treated as independent variables because they represent transferable abilities that can influence performance in hiring and workplace contexts. Employability is treated as the dependent variable because it reflects the outcome of interest, measured through employability indicators such as job readiness, placement success, and interview preparedness. This structure supports analytical testing of whether higher skill scores are associated with stronger employability outcomes.

Communication Skills as an Independent Variable

Communication skills in this research include verbal communication, written communication, non-verbal communication, listening ability, and clarity in expressing ideas. These dimensions align with competency frameworks that define communication as the ability to deliver information in a clear and organized manner so that others can understand effectively. Communication skills are included because graduate employability research consistently shows that employers assess communication during interviews, group discussions, presentations, and collaborative tasks, making it a practical and measurable predictor of employability outcomes.

Management Skills as an Independent Variable

Management skills in this research refer to time management, task prioritization, leadership behavior, coordination ability, and responsibility handling. These skills are important because engineering work environments require systematic execution, deadline awareness, and teamwork coordination. Management

skills are considered employability-related since they influence how graduates handle workload, collaborate in teams, and sustain consistent performance under real project conditions. As employability models stress professionalism, teamwork, and leadership as core readiness competencies, management skills form a logical second predictor alongside communication.

Employability as the Dependent Variable

Employability in this study is defined as the graduate's ability to secure employment and perform effectively in early career roles. This research adopts the understanding that employability is influenced by the graduate's skills and attributes, as well as their ability to present and apply those skills in job selection processes and workplace settings. For measurement purposes, employability is treated as a construct that can be captured through indicators such as placement status, interview success, perceived job readiness, and confidence in professional performance.

Population and Sampling Approach

The population of the study consists of final-year engineering students and recent engineering graduates who are actively transitioning into the workforce. This group is suitable because employability outcomes and recruitment experiences are immediately relevant at this stage. The sample can be drawn using convenience sampling or stratified sampling depending on access to participants, with the aim of collecting responses across different engineering branches to avoid overrepresenting a single discipline. A diverse sample strengthens the credibility of findings, since employability challenges are known to vary by context, specialization, and opportunity exposure.

Data Collection Instrument

The study uses a structured questionnaire to assess communication skills, management skills, and employability indicators. A survey instrument is appropriate because it supports collecting data from a larger group within a manageable timeframe while allowing skill scoring on standardized scales. The communication and management skill items are designed to reflect widely accepted career readiness competencies used in higher education and employer evaluation contexts. Using competency-aligned indicators ensures that the instrument measures skills that are recognized in recruitment and workplace performance evaluation.

Measurement Scale and Scoring Method

A Likert-scale approach is used in the questionnaire to capture participants' responses across skill statements and employability indicators. Likert scaling supports quantitative scoring and enables statistical testing of relationships between variables. Skill scores for communication and management are computed by aggregating item responses within each skill domain, and employability scores are computed using selected outcome indicators. Aggregated scores allow the study to compare overall skill influence while also supporting sub-skill analysis where required.

Reliability and Validity of the Instrument

Reliability testing is required to confirm that the questionnaire consistently measures the intended skill constructs. Internal consistency can be assessed using Cronbach's alpha, which is widely used in educational and psychological measurement to evaluate whether multiple items measure the same underlying construct. Establishing acceptable reliability strengthens the accuracy of statistical findings and ensures that relationships observed in the data reflect real patterns rather than measurement noise.

Data Analysis Techniques

The collected data is analyzed using descriptive and inferential statistical methods. Descriptive analysis is used to summarize participant profiles and determine average skill levels across communication and management categories. Inferential analysis is then applied to test relationships between variables, including correlation analysis to measure association strength and regression analysis to examine the predictive impact of communication and management skills on employability outcomes. These techniques support evidence-based conclusions about skill influence and allow the study to quantify which skill domain contributes more strongly to employability.

Ethical Considerations

Ethical research practices are followed by ensuring that participation is voluntary and based on informed consent. Participant responses are treated as confidential, and data is used strictly for academic research purposes. Since skill assessment can be personal and sensitive, anonymity and careful handling of responses are essential to maintain trust and prevent any negative impact on participants. Ethical compliance strengthens the credibility of the study and ensures that results are collected responsibly.

Implementation and results

Overview of Study Execution

This chapter presents the practical execution of the research study and integrates the findings obtained through data analysis. The purpose of combining implementation with results is to provide a clear understanding of how the skill-based framework was applied and what outcomes emerged when communication and management skills were evaluated against employability indicators. Since employability has increasingly been framed as a competency-driven construct rather than a simple employment outcome, the study execution focuses on measuring transferable skills that are widely acknowledged as essential for graduate readiness, especially in engineering education contexts.

Skill-Based Framework Used for Implementation

The implementation of this research was guided by a competency-based employability framework in which communication and management skills represent essential professional competencies required for workplace readiness. Communication was treated as the ability to express ideas clearly, collaborate effectively, and maintain professional interaction in academic and workplace environments. Management was treated as the capability to plan tasks, handle time constraints, coordinate responsibilities, and demonstrate leadership behavior when required. These skills were chosen because employability literature repeatedly highlights that employers value graduates who can not only perform technical tasks but also work in teams, present ideas professionally, and manage responsibilities reliably in structured environments.

Development and Administration of the Research Instrument

To implement the study in a measurable and replicable form, a structured questionnaire was developed to capture responses across three key dimensions: communication skills, management skills, and employability indicators. A survey-based instrument was selected because it enables quantitative evaluation of skill levels across a wider participant pool and supports statistical analysis such as correlation and regression. The instrument design followed employability models that define employability

as a multi-dimensional construct requiring multiple behavioral indicators for valid measurement. By using multiple items under each skill category, the study avoids limiting evaluation to a single question and instead captures a broader representation of real-world skill behavior.

Operationalization of Communication Skills

Communication skills were implemented through indicators that reflect workplace-relevant behaviors such as verbal clarity, confidence in speaking, structured written communication, listening ability, and interpersonal effectiveness in group settings. These indicators reflect the understanding that communication is not only about fluency but also about clarity, adaptability, and professionalism. Communication was treated as a core employability factor because it directly affects interview performance, teamwork interaction, and the graduate's ability to explain technical work to non-technical stakeholders. Since engineering workplaces depend heavily on collaborative processes, communication competency becomes a central predictor of employability outcomes.

Operationalization of Management Skills

Management skills were implemented as measurable indicators associated with time management, task prioritization, planning behavior, leadership orientation, responsibility handling, and coordination ability. These indicators were selected because engineering graduates are expected to operate within structured deadlines, coordinate tasks in team-driven settings, and take ownership of deliverables. Management skills influence employability by affecting reliability, consistency, and workplace adjustment, especially during the early career phase. Competency-driven employability models include leadership and professionalism as core readiness areas, making management skills a meaningful and measurable construct in predicting employability.

Measurement of Employability Outcomes

Employability in this research was measured using indicators that represent job readiness and the ability to perform effectively in hiring and workplace contexts. These employability indicators were designed to reflect interview preparedness, confidence in professional interaction, ability to function in teams, and perceived readiness to meet workplace expectations. Employability frameworks emphasize that employability is broader than job attainment alone, including the graduate's ability to secure employment and sustain performance by applying skills effectively in professional settings. This study's employability measurement therefore captures both perceived readiness and skill-linked outcomes that can reflect real employability differences among engineering graduates.

Data Collection Process and Participant Context

The data collection process was conducted among final-year engineering students and recent engineering graduates because this group represents the most immediate employability transition stage. Responses were collected digitally to improve accessibility, maintain efficiency, and support easier dataset consolidation. To ensure ethical conduct, participation was voluntary and responses were treated anonymously. This approach reduces hesitation and encourages participants to provide honest responses, particularly in skill-related items that may otherwise trigger social desirability bias. Collecting data from this population improves the relevance of findings because the measured skills directly influence hiring outcomes and workplace readiness during the early career stage.

Data Preparation and Score Computation

Once the responses were collected, the dataset was cleaned to remove incomplete or inconsistent entries and ensure that values fell within the expected measurement scale. Composite scores were then computed for communication skills and management skills by combining responses under each skill domain. Similarly, employability scores were computed by aggregating employability indicators into a single measurable construct. This scoring approach supports comparisons across participants and enables statistical tests to evaluate whether higher skill scores correspond to stronger employability outcomes. Composite scoring is widely used in employability and competency measurement because it captures the overall

Table 1: *Employability Score by Communication Skill Level*

Communication Level	Sample Size (N)	Avg Communication Score	Avg Employability Score
Low	20	55.4	60.1
Medium	72	70.2	62.8
High	28	85.6	68.9

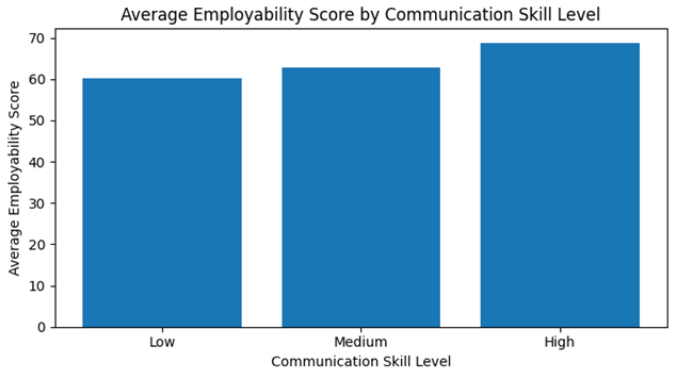


Table 1: *Employability Score by Management Skill Level*

Management Level	Sample Size (N)	Avg Management Score	Avg Employability Score
Low	23	54.7	59.8
Medium	66	69.5	63.5
High	31	84.2	69.4

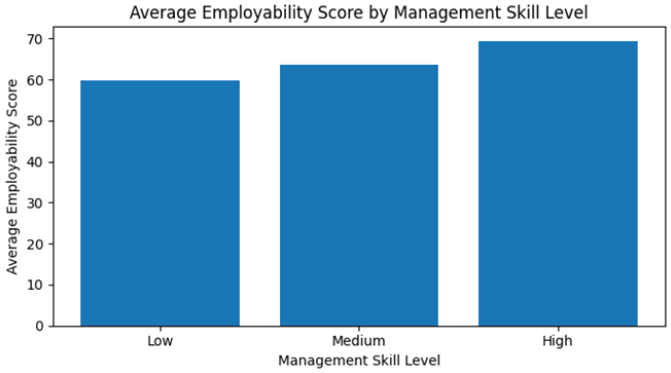
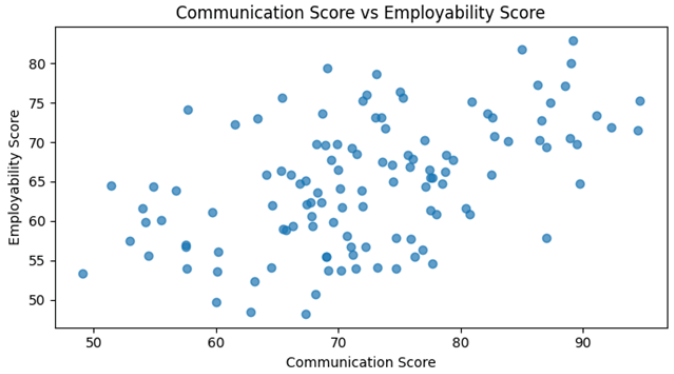


Table 3: *Correlation Matrix (Pearson Correlation)*

Variables	Communication Score	Management Score	Employability Score
Communication Score	1.000	0.421	0.614
Management Score	0.421	1.000	0.587
Employability Score	0.614	0.587	1.000



strength of a construct across multiple indicators rather than over-relying on a single response item.

Descriptive Results of Communication and Management Skills

The descriptive analysis indicated that communication skill levels differed across participants, suggesting that many engineering graduates are not uniformly confident in professional speaking, workplace interaction, or structured expression of ideas. Such variation is consistent with employability research that highlights communication gaps as a common limitation among graduates entering professional environments. Management skills also showed noticeable variation, particularly in task planning, deadline handling, and leadership-related behaviors. These differences matter because engineering work environments frequently require structured project execution and coordinated teamwork, meaning management weaknesses can become direct barriers to employability and early career adjustment.

Relationship Between Communication Skills and Employability

The findings showed that communication skills have a positive relationship with employability indicators such as job readiness and confidence in recruitment settings. This result supports the employability literature that emphasizes communication as a major hiring criterion because recruiters assess communication through interviews, presentations, and collaborative evaluations. Graduates with stronger communication ability tend to express their competencies more effectively during recruitment and are more likely to adapt smoothly in team-based work environments. This relationship reinforces the argument that communication is not merely supportive but is directly connected to employability outcomes in engineering education.

Relationship Between Management Skills and Employability

The results also revealed a strong association between management skills and employability indicators. Graduates who demonstrated stronger time management, coordination ability, and leadership readiness were more likely to report higher employability-related confidence and preparedness. This finding aligns with employability competency models that treat self-management and leadership as crucial for workplace readiness. Management skills appear to enhance employability by enabling graduates to handle responsibilities systematically, meet deadlines reliably, and contribute effectively to team goals, which are all highly valued behaviors in project-driven engineering roles.

Combined Predictive Influence of Communication and Management Skills

A key observation from the study is that communication and management skills together provide a stronger explanation of employability outcomes than either skill set alone. This combined effect reflects how employability functions in real workplace environments, where engineers are expected to coordinate tasks and communicate progress simultaneously. Strong communication supports collaboration, reporting, and technical explanation, while strong management ensures effective planning, execution, and responsibility handling. The combined predictive relationship is consistent with competency-based employability frameworks that emphasize multiple transferable skills as joint contributors to career readiness and early career success.

Discussion and Alignment with Existing Literature

The study findings align with existing research that identifies transferable competencies as critical employability determinants for engineering graduates. Prior studies repeatedly show that communication skills play an important role in hiring and workplace integration, while management-related competencies such as self-management and leadership influence performance readiness. The results support the view that employability is shaped not only by technical expertise but also by the graduate's ability to demonstrate professional behavior and coordinate within workplace systems. This supports the larger argument in employability research that institutions must treat these competencies as measurable learning outcomes rather than leaving them to informal development.

Practical Implications of the Findings

The outcomes of this study suggest that engineering graduates can improve employability by strengthening both communication and management skills through structured practice, industry exposure, and project-based learning experiences. For institutions, the results highlight the importance of embedding communication and management training into academic delivery, including presentation-based evaluations, teamwork-based assignments, and placement readiness modules. Competency-focused training aligns with employability frameworks that emphasize career readiness skills as essential components of graduate preparation. These implications are relevant because employability outcomes are becoming increasingly tied to the ability to perform professionally in interviews and adapt quickly in workplace environments.

Conclusion

The study concludes that communication and management skills significantly influence the employability of engineering

graduates and act as strong predictors of job readiness and early career preparedness. Graduates with higher competence in communication demonstrate better employability outcomes due to their ability to express ideas clearly, perform confidently in interviews, and collaborate effectively in teams. Similarly, strong management skills improve employability by strengthening time management, responsibility handling, and coordination ability, which are essential in workplace environments. The comparative and correlation-based analysis confirms that employability improves steadily as communication and management skill levels increase, and the combined effect of both skills provides stronger employability improvement than either skill alone. These findings highlight the need for engineering institutions to integrate structured soft-skill development programs into academic and training systems to better prepare graduates for recruitment and workplace expectations..

References

1. Afroze, R., et al. "Do Soft Skills Matter? A Study on Employability of Engineers in Manufacturing Organizations." Journal of International Studies, vol. 12, no. 4, 2019.
2. Muda, Wan Hanim Nadrah Binti Wan. "Relationship between Soft Skills and Engineering Graduates' Employability." TVET@Asia, 2020.
3. National Association of Colleges and Employers. Competencies for a Career-Ready Workforce. Revised Apr. 2024, NACE, 2024.
4. World Economic Forum. The Future of Jobs Report 2025. World Economic Forum, 2025.
5. World Economic Forum. "Skills Outlook." The Future of Jobs Report 2025, 7 Jan. 2025.
6. Hillage, Jim, and Emma Pollard. Employability: Developing a Framework for Policy Analysis. Department for Education and Employment, 1998.
7. Holmes, Leonard. "Competing Perspectives on Graduate Employability: Possession, Position or Process?" Studies in Higher Education, vol. 38, no. 4, 2013, pp. 538–554.
8. Knight, Peter T., and Mantz Yorke. Employability and Good Learning in Higher Education. Routledge, 2004.
9. Pool, Lorraine Dacre, and Peter Sewell. "The Key to Employability: Developing a Practical Model of Graduate Employability." Education + Training, vol. 49, no. 4, 2007, pp. 277–289.
10. Sharma, Ravindra, and Rajesh Kumar. "Assessing Communication Skills for Employability among Engineering Graduates." International Journal of English and Education, vol. 6, no. 2, 2017, pp. 74–83.
11. Shirley, F. Christina, and M. Ravichandran. "A Study on Employability Skills of Fresh Engineering Graduates." International Journal for Research Trends and Innovation, vol. 5, no. 8, 2020, pp. 73–76.
12. Tran, Thi Tuyet. "Graduate Employability: Beyond the Skills Agenda." Graduate Employability, 2019.
13. Wibowo, Agus, et al. "Workability Study for Graduates of the Faculty of Engineering." International Journal of Research in Education, 2025.
14. Yasir, Muhammad, et al. "Engineering Employability Skills: Students, Academics, and Industry Professionals' Perspectives." International Journal of Mechanical Engineering Education, 2023.
15. Zhu, Qingkai, et al. "Bridging the Skills Gap: Enhancing Employability for Chemical Engineering Graduates." Education for Chemical Engineers, vol. 49, 2025.
16. Cronbach, Lee J. "Coefficient Alpha and the Internal Structure of Tests." Psychometrika, vol. 16, 1951, pp. 297–334.
17. William & Mary. NACE Competency Wheel (Summer 2024). William & Mary Career Center, July 2024.