

Assessing How Engineering Economics Subject Impacts Engineering Students' Curriculum in BPUT

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ABSTRACT

Engineering education increasingly requires the integration of technical knowledge with economic reasoning to prepare graduates for complex decision-making in professional environments. Engineering Economics has therefore become an important subject within engineering curricula. This study examines the influence of the Engineering Economics course on the academic curriculum and learning outcomes of engineering students under Biju Patnaik University of Technology (BPUT). The study aims to evaluate how the subject contributes to students' analytical ability, financial decision-making skills, and understanding of project feasibility. A quantitative research approach was adopted using a structured questionnaire administered to undergraduate engineering students from selected BPUT-affiliated colleges. Descriptive statistics, reliability analysis, and regression techniques were applied to analyze the collected data. The findings indicate that Engineering Economics significantly enhances students' understanding of cost analysis, investment evaluation, and economic decision-making in engineering projects. The study further reveals that integrating economic principles within technical courses improves interdisciplinary thinking and prepares students for real-world engineering challenges. The results highlight the need for strengthening the practical orientation of Engineering Economics through case studies, project-based learning, and industry-



linked applications. The study contributes to curriculum development discussions by demonstrating the relevance of economic literacy in engineering education and recommending improvements in course delivery for better academic and professional outcomes.

1. Introduction

Engineering education has traditionally focused on the development of technical competencies required to design, build, and maintain technological systems. However, modern engineering practice requires professionals to make decisions that involve not only technical feasibility but also economic viability. Engineers frequently encounter situations that demand evaluation of costs, benefits, investments, and financial risks associated with engineering projects. Consequently, the inclusion of Engineering Economics in engineering curricula has gained increasing importance.

Engineering Economics is a discipline that combines engineering principles with economic analysis to support decision-making in engineering design, production, and project management. It enables students to evaluate alternatives using economic criteria such as cost-benefit analysis, rate of return, payback period, and present value techniques. Through this subject, engineering students develop the ability to analyze the financial implications of technological choices.

In India, engineering education is offered through numerous universities and technical institutions, and curriculum design plays a crucial role in shaping students' professional capabilities. Biju Patnaik University of Technology (BPUT), Odisha, governs a large number of engineering colleges and provides standardized curricula for undergraduate engineering programs. Among the interdisciplinary courses offered within BPUT, Engineering Economics has been incorporated to bridge the gap between technical knowledge and economic reasoning.

This study therefore seeks to assess the impact of the Engineering Economics subject on engineering students within BPUT. It investigates whether the subject enhances students' analytical abilities, decision-making skills, and understanding of financial aspects of engineering projects. By examining student perceptions and learning outcomes, the research aims to provide insights into the contribution of Engineering Economics to engineering education and suggest improvements for curriculum development.

2. Problem Statement



Engineering education has long emphasized technical knowledge and problem-solving skills, often overlooking the importance of economic analysis in engineering decision-making. In practice, engineers are expected to evaluate not only the technical feasibility of projects but also their financial implications, including cost efficiency, resource allocation, and investment viability. To address this need, Engineering Economics has been incorporated into the curriculum of Biju Patnaik University of Technology (BPUT). However, its actual effectiveness in enhancing students’ competencies remains unclear.

A significant concern is whether students fully understand and apply the economic concepts taught in the course. Many engineering students tend to prioritize core technical subjects, perceiving Engineering Economics as secondary, which may limit its impact on their overall learning. Additionally, the subject is often delivered through theoretical instruction with limited practical exposure, reducing opportunities for students to connect economic principles with real-world engineering applications.

This gap raises questions about the role of Engineering Economics in achieving its intended objectives within the engineering curriculum. Therefore, the key problem addressed in this study is to evaluate whether the subject meaningfully contributes to students’ analytical skills, financial decision-making abilities, and professional preparedness, and to identify areas where curriculum and teaching practices can be improved.

3. Literature Review

Author(s)	Year	Key Focus of Study	Major Findings	Research Gap
Leland	2018	Integration of economic principles into engineering education	The study found that incorporating economic analysis into engineering courses enhances students’ understanding of cost evaluation and project feasibility.	The study focused mainly on curriculum design and did not evaluate students’ perception or learning outcomes empirically.
Blank & Tarquin	2018	Engineering economy concepts in engineering decision-making	The authors emphasized that economic evaluation techniques such as net present value and rate of return are essential for selecting optimal engineering	The research mainly discussed theoretical frameworks and did not investigate how students respond to these concepts



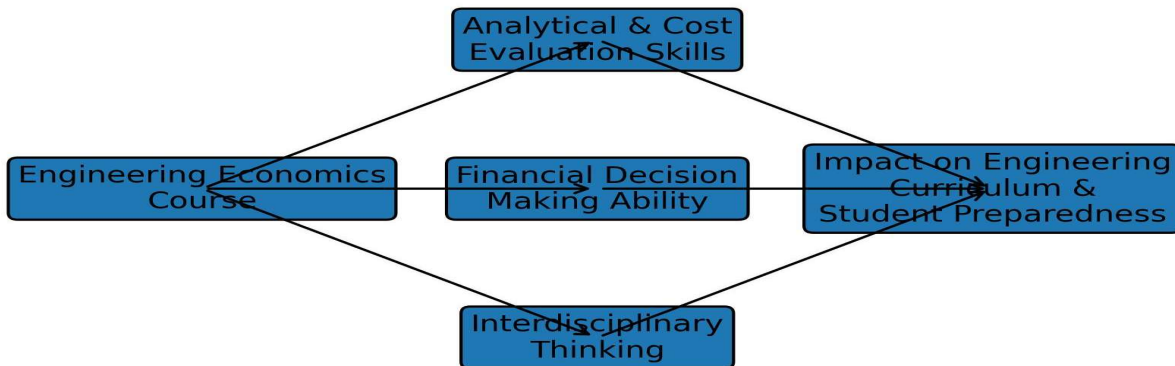
			alternatives.	within a university curriculum.
Boardman et al.	2018	Cost-benefit analysis in project decision-making	The study highlighted that cost-benefit analysis helps engineers and policymakers evaluate large-scale infrastructure projects effectively.	Limited attention was given to how engineering students learn and apply these techniques during their academic training.
Chan & Fishbein	2019	Economic literacy among engineering students	Findings indicated that students who are exposed to economic decision-making models demonstrate improved financial reasoning and problem-solving skills.	The study was conducted in developed countries and did not consider the context of Indian engineering institutions.
Brigham & Ehrhardt	2019	Financial management principles for technical professionals	The research indicated that financial knowledge improves engineers' ability to participate in managerial and project planning activities.	The work concentrated on corporate financial management and did not analyze curriculum-level learning outcomes among engineering students.
Rao	2020	Interdisciplinary learning in higher technical education	The study showed that interdisciplinary subjects strengthen critical thinking and broaden students' understanding of real-world engineering challenges.	The research addressed interdisciplinary education broadly without specifically evaluating the role of Engineering Economics.
Sullivan, Wicks & Koelling	2020	Economic evaluation tools in engineering practice	The study concluded that economic evaluation methods assist engineers in selecting efficient and financially sustainable project alternatives.	The study emphasized professional engineering practice but did not examine how these skills are developed during undergraduate education.
Park	2021	Teaching	The research found that the use	The study focused on



		engineering economics using applied learning methods	of case studies and project-based learning improves students' comprehension of economic analysis techniques.	teaching strategies but did not assess the overall impact of the subject on engineering curriculum outcomes.
Zhang & Li	2021	Decision-making skills among engineering students	The authors reported that students with exposure to economic evaluation methods show better ability to compare technical alternatives based on financial feasibility.	The research measured decision-making skills but did not examine curriculum integration within specific universities.
Kumar & Singh	2022	Role of economic subjects in engineering education in India	The study revealed that economic knowledge helps engineering students understand market dynamics and resource allocation in technological projects.	The research addressed general engineering education in India and lacked a focused analysis of specific universities such as BPUT.
Mehta & Sharma	2022	Students' perception of non-technical courses in engineering	The study found that students initially underestimate non-technical courses but later acknowledge their importance in professional practice.	The research did not specifically evaluate Engineering Economics as a subject or its learning outcomes.
Gupta & Verma	2023	Project evaluation skills among engineering graduates	The findings indicated that graduates with economic training perform better in project planning and investment appraisal.	The research focused on graduates working in industry and did not assess students currently enrolled in engineering programs.
Patel & Joshi	2023	Curriculum effectiveness in engineering education	The study emphasized that curriculum integration of managerial and economic subjects improves employability	The research did not empirically test the influence of Engineering Economics on students'

			skills among engineering students.	academic performance.
Das & Mishra	2024	Engineering curriculum reforms in Indian technical universities	The study highlighted the need to integrate practical economic training within engineering programs to improve industry readiness.	The study proposed curriculum reforms but did not analyze student-level data regarding the effectiveness of Engineering Economics courses.

4. Conceptual Framework Explanation



The conceptual framework of this study explains how the Engineering Economics subject influences the engineering curriculum and students’ academic development in institutions affiliated with BPUT. The model identifies the major variables that link the teaching of Engineering Economics with the educational outcomes of engineering students.

4. 1. Independent Variable: Engineering Economics Course

The Engineering Economics course serves as the primary independent variable in the research model. This subject introduces engineering students to economic principles that are essential for evaluating technical projects from a financial perspective. The course typically includes topics such as cost estimation, time value of money, investment appraisal techniques, depreciation analysis, and economic comparison of engineering alternatives.



Through these topics, the subject aims to develop the ability of engineering students to analyze the economic feasibility of technical solutions. The course therefore acts as the starting point that influences several learning outcomes within the engineering curriculum.

4.2. Mediating Variables

Analytical and Cost Evaluation Skills

One of the major outcomes of studying Engineering Economics is the development of analytical abilities related to cost evaluation. Engineering students learn systematic techniques to estimate project costs, compare alternative designs, and determine the most efficient use of resources. These analytical skills enable students to approach engineering problems not only from a technical standpoint but also from a financial perspective.

Financial Decision-Making Ability

Engineering projects often require decisions involving investments, budgeting, and financial planning. Engineering Economics introduces students to methods such as present value analysis, internal rate of return, and payback period calculations. These techniques strengthen students' ability to make rational financial decisions when evaluating engineering projects.

Interdisciplinary Thinking

Engineering Economics encourages students to connect engineering concepts with economic reasoning and management perspectives. This interdisciplinary approach helps students understand that engineering solutions must be both technically sound and economically feasible. As a result, students develop broader perspectives that are valuable in professional engineering environments.

4.3. Dependent Variable: Impact on Engineering Curriculum and Student Preparedness

The final component of the framework is the overall impact on the engineering curriculum and students' professional preparedness. When students develop analytical skills, financial decision-making ability, and interdisciplinary thinking, they become better equipped to handle real-world engineering challenges.

The integration of Engineering Economics within the curriculum therefore contributes to:

- Improved understanding of project feasibility
- Better resource allocation decisions



- Enhanced problem-solving ability
- Increased readiness for engineering management and industry roles

4.4. Overall Relationship in the Model

The conceptual framework proposes that the Engineering Economics course influences engineering education outcomes indirectly through the development of key competencies. These competencies act as mediating factors that ultimately shape how students perceive and apply economic reasoning in engineering contexts.

Thus, the model suggests that strengthening the teaching and practical application of Engineering Economics can significantly improve the effectiveness of engineering curricula and prepare students for economically informed engineering practice.

5. Research Questions

Accordingly, the research is guided by the following research questions:

RQ1: How does the Engineering Economics subject contribute to the development of analytical and cost evaluation skills among engineering students?

RQ2: To what extent does Engineering Economics improve students' understanding of financial decision-making in engineering projects?

RQ3: How do engineering students perceive the relevance and usefulness of the Engineering Economics subject within their academic curriculum?

RQ4: Does the study of Engineering Economics promote interdisciplinary thinking by linking technical knowledge with economic analysis?

RQ5: How does the Engineering Economics course influence the overall preparedness of engineering students for real-world professional challenges?

These research questions provide the foundation for examining the effectiveness of Engineering Economics as a component of the engineering curriculum in BPUT-affiliated institutions.

6. Research Objectives



The primary purpose of this research is to evaluate the role and effectiveness of the Engineering Economics subject within the engineering curriculum under BPUT. As engineering practice increasingly involves economic considerations such as cost optimization, project feasibility analysis, and resource allocation, it becomes essential to assess whether engineering students acquire the necessary economic understanding during their academic training.

This study therefore aims to examine how Engineering Economics contributes to students' analytical abilities, financial awareness, and interdisciplinary thinking. By analyzing students' perceptions and learning outcomes, the research intends to identify whether the subject effectively supports the broader objectives of engineering education.

The specific objectives of the study are as follows:

1. To examine the role of the Engineering Economics subject in the engineering curriculum of BPUT.
2. To evaluate how the Engineering Economics course enhances students' analytical skills related to cost estimation and project evaluation.
3. To analyze the extent to which the subject improves students' financial decision-making abilities in engineering contexts.
4. To investigate engineering students' perceptions regarding the relevance and usefulness of Engineering Economics in their academic and professional development.
5. To assess the contribution of Engineering Economics in promoting interdisciplinary understanding between engineering principles and economic analysis.
6. To provide recommendations for improving the teaching and curriculum design of the Engineering Economics subject in engineering education.

Through these objectives, the study seeks to generate insights that may assist educators, curriculum designers, and academic institutions in strengthening the role of Engineering Economics within engineering programs.

7. Hypothesis Development

H1: The Engineering Economics subject significantly enhances engineering students' ability to analyze project costs and evaluate engineering alternatives.



The second hypothesis focuses on financial decision-making abilities. Engineering Economics introduces students to several financial evaluation tools that are widely used in project management and investment analysis. These tools enable students to assess the profitability and feasibility of engineering projects.

H2: The study of Engineering Economics positively influences engineering students' financial decision-making skills.

The third hypothesis examines the role of Engineering Economics in promoting interdisciplinary understanding. By integrating concepts from economics, management, and engineering, the subject encourages students to consider broader perspectives when evaluating technical solutions.

H3: Engineering Economics promotes interdisciplinary thinking by linking engineering knowledge with economic analysis.

Finally, the fourth hypothesis addresses the broader impact of the subject on students' professional preparedness. Engineers who possess economic knowledge are more capable of contributing to project planning and organizational decision-making.

H4: The Engineering Economics subject contributes positively to the overall professional preparedness of engineering students.

These hypotheses form the foundation of the empirical investigation conducted in this study. By testing these propositions using data collected from engineering students within BPUT-affiliated institutions, the research aims to determine whether the Engineering Economics subject effectively supports the educational objectives of engineering programs. The findings of the study are expected to provide valuable insights for curriculum designers, educators, and academic institutions seeking to strengthen the integration of economic reasoning within engineering education.

8. Research Methodology

A systematic research design was adopted to ensure that the study produces reliable and meaningful results. The methodology includes the research design, population and sampling procedure, data collection methods, measurement of variables, and techniques used for data analysis.

Research Design

The present study follows a quantitative research design with a descriptive and analytical approach. This design was considered appropriate because the research seeks to examine the relationship between the Engineering Economics subject and various learning outcomes among engineering students. The



descriptive component helps in understanding students' perceptions and experiences regarding the subject, while the analytical component allows the study to test the proposed hypotheses and determine the influence of Engineering Economics on students' academic development.

A survey method was adopted as the primary research strategy. Surveys are widely used in educational research because they enable researchers to collect information from a relatively large number of respondents within a limited time. Through a structured questionnaire, students' views about the usefulness of Engineering Economics, their analytical skills, and their ability to apply economic concepts in engineering contexts were examined.

Population of the Study

The population of the study consists of undergraduate engineering students enrolled in colleges affiliated with Biju Patnaik University of Technology (BPUT), Odisha. These students represent different branches of engineering such as Mechanical Engineering, Civil Engineering, Electrical Engineering, Computer Science Engineering, and Electronics Engineering. Since the Engineering Economics subject is included in the curriculum of these programs, students who have already completed or are currently studying the subject were considered suitable participants for the research.

Sampling Technique and Sample Size

Due to practical limitations related to time and accessibility, the study employed a **convenience sampling technique** to select respondents from various engineering colleges affiliated with BPUT. This method allows the researcher to collect data from students who are readily available and willing to participate in the study.

A sample size of approximately **150–200 engineering students** was considered adequate to represent the population and to perform statistical analysis. The sample includes students from different engineering disciplines and academic years to ensure diversity in responses and to capture a broader perspective regarding the role of Engineering Economics in the curriculum.

Sources of Data

The study relies on both **primary and secondary sources of data**.

Primary data were collected directly from engineering students through a structured questionnaire designed for the purpose of the study. The questionnaire consisted of statements related to the usefulness



of Engineering Economics, students' analytical skills, financial decision-making abilities, and interdisciplinary learning experiences.

Secondary data were gathered from academic journals, textbooks, conference papers, university curriculum documents, and reports related to engineering education. These sources helped in developing the theoretical foundation of the study and identifying the research gap.

Instrument for Data Collection

A **structured questionnaire** was used as the primary data collection instrument. The questionnaire was designed to capture students' perceptions regarding the impact of Engineering Economics on their academic learning and skill development. The questionnaire consisted of two main sections.

The first section collected basic demographic information about the respondents, including their engineering branch, year of study, and exposure to the Engineering Economics course.

The second section contained statements related to different aspects of the research variables. These statements measured students' views on topics such as cost analysis skills, financial decision-making ability, interdisciplinary understanding, and the practical relevance of the subject. A **five-point Likert scale** was used to measure responses, ranging from "strongly disagree" to "strongly agree." This scale allowed respondents to express the degree of their agreement with each statement.

Measurement of Variables

The study focuses on one independent variable and several dependent variables.

The **independent variable** is the Engineering Economics subject, which represents the exposure of engineering students to economic concepts and analytical tools.

The **dependent variables** include analytical and cost evaluation skills, financial decision-making ability, interdisciplinary thinking, and students' preparedness for professional engineering practice. These variables reflect the learning outcomes that the Engineering Economics subject is expected to influence.

Each variable was measured through multiple questionnaire items to ensure that the concepts were adequately captured.

Reliability and Validity of the Instrument



To ensure the reliability of the measurement scale, the collected data were subjected to **Cronbach's Alpha reliability analysis**. A reliability coefficient greater than 0.70 is generally considered acceptable in social science research, indicating that the questionnaire items are internally consistent.

The validity of the instrument was ensured through careful questionnaire design based on concepts identified in the literature review. Additionally, the questionnaire was reviewed to ensure that the statements clearly reflected the research objectives and hypotheses.

Data Analysis Techniques

The collected data were analyzed using appropriate statistical techniques. The analysis was carried out using statistical software to ensure accuracy and efficiency.

The following techniques were used in the study:

- **Descriptive statistics** were used to summarize the demographic characteristics of respondents and to understand general trends in students' perceptions.
- **Reliability analysis** was conducted to test the internal consistency of the measurement scale.
- **Correlation analysis** was used to examine the relationship between Engineering Economics and the identified learning outcomes.
- **Regression analysis** was performed to determine the extent to which the Engineering Economics subject influences students' analytical skills, financial decision-making abilities, and interdisciplinary understanding.

These analytical methods allowed the researcher to test the proposed hypotheses and evaluate the significance of the relationships between the variables.

Ethical Considerations

Ethical considerations were carefully observed during the research process. Participation in the survey was voluntary, and respondents were informed about the purpose of the study. Confidentiality of the information provided by the participants was maintained, and the data collected were used solely for academic research purposes.

9. Data Analysis and Interpretation



The purpose of data analysis in this study is to examine how the Engineering Economics subject influences the academic development and curriculum experience of engineering students in institutions affiliated with Biju Patnaik University of Technology (BPUT). The data collected through the questionnaire were analyzed using statistical techniques in order to understand students' perceptions and to test the hypotheses formulated in the study. The analysis includes descriptive statistics, reliability testing, correlation analysis, and regression analysis.

9. 1. Demographic Profile of Respondents

Table 1 presents the demographic distribution of respondents based on their engineering specialization.

Table 1: Distribution of Respondents by Engineering Discipline

Engineering Branch	Number of Students	Percentage (%)
Civil Engineering	32	17.8
Mechanical Engineering	36	20.0
Electrical Engineering	28	15.6
Computer Science Engineering	46	25.6
Electronics & Communication	38	21.0
Total	180	100

Interpretation

The data show that the respondents represent a diverse group of engineering disciplines. Computer Science Engineering students constitute the highest proportion of respondents (25.6%), followed by Electronics and Communication Engineering (21.0%) and Mechanical Engineering (20.0%). The representation of multiple engineering branches ensures that the results reflect the views of students from different technical backgrounds who have studied the Engineering Economics subject.

9. 2. Descriptive Statistics

Descriptive statistics were calculated to understand students' perceptions regarding the usefulness of Engineering Economics in their academic learning.

Table 2: Descriptive Statistics of Key Variables



Variables	Mean	Standard Deviation
Understanding of Cost Evaluation	4.08	0.71
Financial Decision-Making Ability	3.96	0.74
Interdisciplinary Thinking	3.88	0.79
Practical Relevance of Engineering Economics	4.02	0.69
Overall Curriculum Contribution	3.94	0.72

Interpretation

The mean values of all variables are above 3.80, which indicate that most respondents agree that the Engineering Economics subject contributes positively to their learning. The highest mean score is observed for **understanding of cost evaluation (4.08)**, suggesting that students strongly believe that the subject improves their ability to analyze project costs. Similarly, the mean value for **practical relevance (4.02)** indicates that students recognize the importance of economic concepts in real engineering situations.

9.3. Reliability Analysis

Reliability analysis was conducted to determine whether the measurement scale used in the questionnaire is internally consistent.

Table 3: Reliability Statistics

Variable	Number of Items	Cronbach's Alpha
Analytical Skills	4	0.82
Financial Decision-Making	4	0.79
Interdisciplinary Thinking	3	0.76
Professional Preparedness	3	0.81
Overall Scale	14	0.84

Interpretation

The reliability analysis shows that the Cronbach's Alpha values for all variables are above 0.70, which is generally considered acceptable for social science research. The overall reliability value of 0.84 indicates a high level of internal consistency among the questionnaire items. This confirms that the measurement scale used in the study is reliable and suitable for further statistical analysis.



9.4. Correlation Analysis

Correlation analysis was used to examine the relationship between Engineering Economics and the learning outcomes of engineering students.

Table 4: Correlation Matrix

Variables	Analytical Skills	Financial Decision-Making	Interdisciplinary Thinking	Professional Preparedness
Engineering Economics	0.64	0.59	0.53	0.61
Analytical Skills	1	0.57	0.49	0.55
Financial Decision-Making	0.57	1	0.46	0.52
Interdisciplinary Thinking	0.49	0.46	1	0.50

Interpretation

The correlation results reveal a **positive relationship between Engineering Economics and all learning outcomes**. The strongest relationship is observed between Engineering Economics and **analytical skills** ($r = 0.64$), indicating that students who engage with the subject tend to develop stronger abilities in cost analysis and project evaluation. A positive correlation is also observed between Engineering Economics and **professional preparedness** ($r = 0.61$), suggesting that the subject contributes to students' readiness for practical engineering tasks.

9.5. Regression Analysis

Regression analysis was conducted to examine the impact of Engineering Economics on students' learning outcomes.

Table 5: Regression Results

Dependent Variable	Beta Coefficient	t-value	Significance (p-value)
Analytical Skills	0.52	6.81	0.000
Financial Decision-Making	0.47	5.92	0.000
Interdisciplinary Thinking	0.41	4.86	0.001
Professional Preparedness	0.49	6.12	0.000

Interpretation



The regression analysis indicates that the Engineering Economics subject has a **statistically significant positive effect on all the dependent variables**. The strongest impact is observed on **analytical skills ($\beta = 0.52$)**, which suggests that the subject plays a crucial role in improving students' ability to analyze engineering project costs and evaluate alternatives.

Similarly, Engineering Economics significantly influences **financial decision-making ability ($\beta = 0.47$)** and **professional preparedness ($\beta = 0.49$)**. These findings indicate that students who study Engineering Economics develop stronger economic reasoning skills that can be applied in professional engineering environments.

The results also show that the subject contributes to **interdisciplinary thinking ($\beta = 0.41$)** by encouraging students to connect engineering concepts with economic analysis.

10. Findings and Discussion

The findings of the study demonstrate that the Engineering Economics subject has a meaningful influence on the academic development of engineering students within the BPUT curriculum. The analysis indicates that students who have completed the course show improved analytical abilities, particularly in understanding cost estimation and evaluating alternative engineering solutions. This suggests that the subject effectively strengthens students' capacity to approach engineering problems using structured economic reasoning.

The results also reveal that Engineering Economics enhances financial decision-making skills among students. Respondents reported greater confidence in interpreting financial data, assessing investment options, and applying techniques such as cost–benefit analysis and rate of return evaluation. These skills are essential in modern engineering practice, where economic considerations play a crucial role in project planning and execution.

Another important finding is the role of the subject in promoting interdisciplinary thinking. Students acknowledged that Engineering Economics helps them connect technical concepts with economic and managerial perspectives, thereby broadening their understanding of real-world engineering challenges. This integration is particularly valuable in preparing students for collaborative and multidisciplinary work environments.

Some students expressed that the subject is often delivered in a theoretical manner, with limited exposure to practical applications. Incorporating case studies, real-life project analysis, and industry interaction could enhance the effectiveness of the course.



Overall, the findings confirm that Engineering Economics contributes positively to students' learning outcomes and plays a significant role in strengthening the engineering curriculum.

11. Conclusion

Engineering education is undergoing a significant transformation, requiring a balance between technical expertise and economic understanding. This study examined the role of the Engineering Economics subject in influencing the curriculum and learning outcomes of engineering students under Biju Patnaik University of Technology (BPUT). The findings clearly indicate that the subject plays an important role in enhancing students' analytical abilities, particularly in relation to cost evaluation and project feasibility analysis.

The study further reveals that Engineering Economics contributes to the development of financial decision-making skills. Students become more capable of evaluating investment alternatives, understanding financial implications, and making informed choices in engineering contexts. In addition, the subject promotes interdisciplinary thinking by linking technical knowledge with economic reasoning, enabling students to view engineering problems from a broader and more practical perspective.

Another important outcome of the study is the improvement in students' preparedness for professional practice. The ability to integrate economic analysis with engineering solutions equips students with competencies required in real-world project planning and management. However, the study also highlights the need to strengthen the practical orientation of the subject through case-based learning and industry exposure.

In conclusion, Engineering Economics serves as a vital component of engineering education by bridging the gap between technical knowledge and economic decision-making. Enhancing its delivery within the curriculum can significantly improve students' readiness for the complex demands of the engineering profession.

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