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Cost-Benefit Analysis of Types of Trucking Utilized by SEPI: Basis for Action Plan

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Abstract—The study evaluates the cost-benefit analysis between company-owned fleets and outsourced trucking at SEPI, a manufacturing firm in Laguna. As of 2024, SEPI's truck usage consists of 62% company-owned and 38% outsourced. Due to aging trucks, maintenance is outsourced, leading to increased operating expenses (OpEx), including fuel, repairs, insurance, and salaries. The lack of prior analysis raises the question of whether investing in new trucks or continuing outsourcing would be more cost-effective. Using literature and surveys, the research analyzed Capital Expenditures (CAPEX), Operating Expenses (OPEX), and benefits such as Efficiency, Cost-Savings, Risk, and Operational Flexibility for both trucking options. Results showed that outsourced trucking had lower costs and provided greater benefits for SEPI. The study applied Transaction Cost Economics (TCE) and Resource-Based View (RBV), utilizing a descriptive comparative design with stratified random sampling and online surveys rated on a 4-point Likert scale. Findings revealed that company-owned fleets had higher cost ratings (CAPEX: 3.13, OPEX: 3.03), whereas outsourced trucking had moderate cost ratings (2.23 for CAPEX, 2.17 for OPEX). Additionally, outsourced trucking scored higher in Efficiency (3.34), Cost-Savings (3.33), Risk (3.28), and Operational Flexibility (3.39), demonstrating a more favorable outcome. In conclusion, outsourcing offers SEPI significant advantages, including lower capital investments, reduced operational costs, and improved focus on product quality and core business functions.

Index Terms— **Capital Expenditures (CAPEX), Company-owned Fleet, Cost-Benefit Analysis (CBA), Cost-Savings, Efficiency, Operating Expenses (OPEX), Operational Flexibility, Outsourced Trucking, Risk.**

1. Introduction

"In logistics, time is money and efficiency is wealth." – Benjamin Franklin.

The study examines the cost-benefit analysis of third-party trucking versus company-owned fleets in logistics, emphasizing efficiency, cost-effectiveness, and risk mitigation. Success in logistics relies on fast and cost-efficient movement of goods, where delays impact revenue, and optimized operations enhance competitiveness.

Globally, third-party trucking provides flexibility, scalability, and lower operational risks, allowing companies to focus on core business functions. However, owning a fleet ensures greater control, long-term financial benefits, and stronger supply chain integration, but it comes with high upfront investments and ongoing expenses. Many companies now adopt hybrid models, combining third-party services for specific routes while maintaining a fleet for high-demand transportation needs.

In the Asia-Pacific region, businesses with stable, high-volume needs may benefit from company-owned fleets, whereas those with fluctuating demands find third-party trucking more cost-effective and scalable. The Philippines, with its archipelagic geography and infrastructure challenges, sees third-party trucking as the preferred option due to low upfront investment, flexibility, and adaptability to e-commerce growth. Companies outsourcing trucking avoid capital expenses, while operational costs are bundled into service fees, reducing overhead and optimizing logistics.

SEPI, an electronics manufacturing company in Laguna, currently operates with 62% company-owned trucks and 38% outsourced trucking but struggles with high OPEX due to aging vehicles and outsourced maintenance. Without a cost-benefit analysis, SEPI lacks clarity on whether to invest in new trucks or fully shift to outsourcing. Research suggests short-term outsourcing benefits include lower overhead, operational cost savings, scalability, and technology access, while long-term advantages involve industry expertise, risk mitigation, adaptability, and efficiency gains.

Ultimately, companies must weigh cost, control, scalability, and operational risks when choosing between third-party trucking and in-house fleets. The study aims to provide financial and operational insights into SEPI's logistics strategy, ensuring cost-effective decision-making and competitive sustainability.

2. Conceptual Framework

The study integrates cost-benefit analysis (CBA) with two key theoretical frameworks—Transaction Cost Economics (TCE) and Resource-Based View (RBV)—to assess the profitability comparison between third-party trucking and company-owned fleets for SEPI.

Transaction Cost Economics (TCE), developed by Ronald Coase and Oliver Williamson, focuses on minimizing costs associated with transactions, operations, and monitoring. Organizations decide between outsourcing logistics and in-house fleet management by evaluating transaction costs versus internal costs. If internal costs are higher, outsourcing becomes

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more cost-effective. SEPI can apply TCE to determine whether managing its own fleet reduces transaction costs compared to third-party trucking. Factors such as economies of scale, operational complexity, and logistics control play a critical role.

Resource-Based View (RBV), introduced by Birger Wernerfelt, highlights that a firm's competitive advantage depends on its unique resources and capabilities. If SEPI possesses superior fleet management assets, such as advanced trucks, experienced drivers, and optimized logistics systems, it could outperform third-party trucking providers and achieve higher profitability. However, if external providers have greater economies of scale, SEPI might benefit from outsourcing.

The study uses these theories to evaluate whether SEPI should invest in a company-owned fleet or continue outsourcing based on cost-effectiveness, scalability, and strategic advantage.

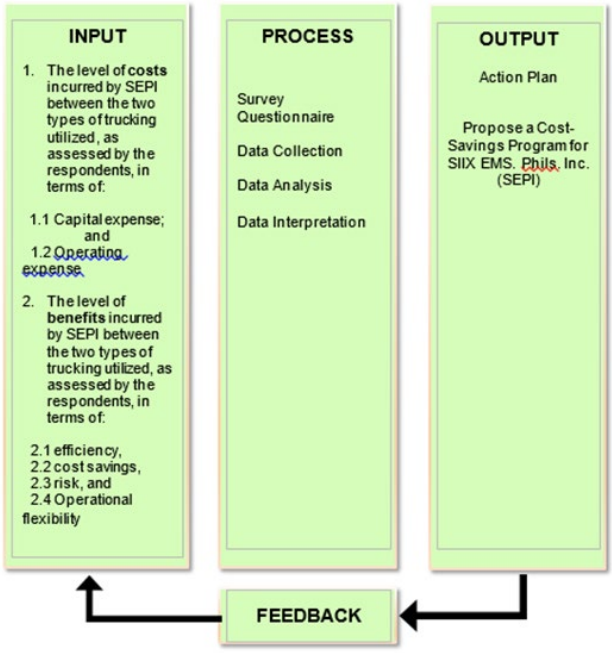

Fig. 1. The research paradigm of the study

Table 1
Level of cost incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of capital expenditure for a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.13	High

Table 2
Level of cost incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of capital expenditure of outsourced trucking services

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.23	Moderate

Table 3
Level of cost incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of operating expense for a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.03	High

Table 4
Level of cost incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of operating expense of outsourced trucking services

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.17	Moderate

Table 5
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of efficiency of a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.81	Moderately Beneficial

Table 6
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of cost savings of a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.67	Moderately Beneficial

Table 7
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of risk of a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.60	Moderately Beneficial

Table 8
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of operational flexibility of a company-owned fleet

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	2.68	Moderately Beneficial

Table 9
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of efficiency of outsourced trucking

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.34	Highly Beneficial

Table 10
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of cost savings of outsourced trucking

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.33	Highly Beneficial

Table 11
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of risk of outsourced trucking

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.28	Highly Beneficial

Table 12
Level of benefits incurred by SEPI between the two types of trucking utilized as assessed by the respondents in terms of operational flexibility of outsourced trucking services

Indicator	Weighted Mean	Verbal Interpretation
General Assessment	3.39	Highly Beneficial

3. Conclusion

This paper presented cost-benefit analysis of types of trucking utilized by SEPI.

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