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## **IMPACT OF SUPPLY CHAIN MANAGEMENT (SCM) PRACTICES ON NANDKISHOR ROADLINES: AN EMPIRICAL STUDY**

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### **ABSTRACT**

This study looks at how customer satisfaction at the petrochemical transportation business Nandkishor Roadlines is affected by Supply Chain Management (SCM) techniques. A structured questionnaire that focused on four aspects—time efficiency, supplier reliability, operational convenience, and technological adoption—was used to gather primary data from 103 clients. While time, supply, and convenience considerations had no discernible effect on customer satisfaction, technology-based practices—such as GPS tracking, electronic documentation, and real-time information sharing—had a considerable positive impact, according to data analysis using linear regression. The model's total explanatory power was limited ( $R^2 = 7.8\%$ ), suggesting that client opinions are also influenced by other qualitative aspects including pricing, relationship management, and after-sales support. The study recommends prioritizing investments in advanced logistics technologies, staff training, and continuous feedback mechanisms to enhance service quality. These findings provide empirical evidence for technology-focused SCM improvements and lay the groundwork for further research on broader determinants of customer satisfaction in petrochemical logistics.

**Keywords:** Supply chain management, Customer satisfaction, Nandakishor roadlines

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### **Introduction:**

Effective logistics are crucial to the petrochemical industry's ability to transport hazardous liquids in a cost-effective and safe manner. One of the most important aspects of this process is liquid logistics, which encompasses the processing, storage, and transportation of fuel and chemicals in liquid form. Due to the delicate and uncertain nature of these materials, supply chain efficiency is essential for both environmental compliance and economic performance. The significance of supply chain management (SCM) techniques in resolving business-related issues has grown as the oil industry's operations become more complex.

With a focus on four key factors—time efficiency, operational ease, supply consistency, and technological challenges—the current study attempts to investigate how SCM techniques affect the liquid logistics of petrochemicals. These factors are essential for guaranteeing the supply system's overall effectiveness, responsiveness, and dependability. Time is essential for cutting down on lead times and delays, especially when working with hazardous or perishable materials. Convenience encapsulates the ease and flexibility of logistics operations for all parties involved, including clients, warehouse keepers, and carriers. Supply chain

problems include supply chain coordination failures, inventory imbalances, and disruptions in availability. On the other side, technological issues relate to the challenges of implementing digital platforms, automation, real-time information interchange, and tracking systems—all of which are critical to modern supply chain management.

Poor time management, technological limitations, erratic supply flows, and onerous procedures continue to cause bottlenecks in the majority of petrochemical logistics operations, despite advancements in SCM tools and frameworks. Investigating the extent to which efficient supply chain management (SCM) techniques might lessen these difficulties and enhance overall logistics performance in the petrochemical sector is the goal. The study intends to produce evidence-based information on how companies can improve their liquid logistics operations by collecting and analysing primary data from suppliers, logistics experts, and industry specialists. The findings should aid stakeholders in putting targeted SCM strategies into practice that improve time management, expedite processes, ensure supplier reliability, and address technological obstacles.

## **Review of Literature:**

One tactic that has become essential to making companies environmentally friendly is the use of green supply chains. The study will investigate the kinds of environmental management strategies used by businesses when deciding on green supply chains and how these strategies affect the businesses' financial and environmental performance. The study adds to the growing corpus of research that examines the relationship between corporate performance and environmental legislation (Hasan, 2013). This study examines how Batam Naval Base's operating capabilities is impacted by its freshwater and port facilities as well as its liquid logistics supply. Using a descriptive quantitative methodology and Likert-scale questionnaires completed by sixty-three naval officers, the study analyzes data using SPSS. The findings show that base facilities and liquid logistics both significantly and favorably impact the base's overall and individual operational performance. The study concludes that in order to enhance operations at Batam Naval Base, efficient liquid logistics and reputable facilities are essential (Jamaluddin et al., n.d.). In order to investigate the impact of lean and green upstream supply chain strategies on sustainable business development, this work presents a theoretical model. Despite the fact that businesses frequently employ each practice separately, it is not generally known how both techniques work together to improve performance. Metrics for social, environmental, and economic performance make up the model. The model is demonstrated through a case study at a Portuguese automaker, showing how lean and green practices taken together can improve sustainability in terms of supplier relationships, cost, and environmental responsibility (S. G. Azevedo et al., 2012). This study looks into how logistics management techniques affect Jordanian road transport companies' operational performance. The study used a 30-item questionnaire and a descriptive-analytical approach. It found that improving logistical activities such inventory, warehousing, order processing, transportation, and packaging improves performance. Based on these results, it is recommended that Jordanian industrial companies prioritize the enhancement of all logistics-related activities, including purchasing, storing, distributing, handling, customer service, and scheduling, in order to guarantee efficiency and competitiveness (Omoush, 2022). A logistic security system for the supply of petroleum products and crude oil has been discussed in order to address issues related to technology, politics, the environment, the economy, and society. It conceptually investigates the system's efficacy, continuity, flexibility, and efficiency. The logistics system's methodology, the functioning of the crude oil market, and the key components of energy security are all mentioned in the study. It concludes by

identifying the structure of the logistics system for liquid fuels and highlights its relevance to further study in secure supply systems (JEDYNAK, n.d.). The impact of logistics management on customer satisfaction in mid- and small-sized Algerian industrial businesses is examined in this study. Logistics activities, which include distribution and supply, are crucial to meeting market demands in terms of quality, cost, and time. Logistics guarantees business continuity and customer loyalty based on client requirements and purchasing power. Good logistics are essential to maintaining competitiveness and improving service quality in the face of shifting markets and rising production costs. Based on important topics in earlier research, the study gathers information through interviews with managers of logistics-related businesses (Ghoumrassi & Tigu, 2018). This study examines how supply chain resilience in the distribution of petroleum products is impacted by IT flexibility through compatibility, connectivity, and modularity. The study, which surveyed 327 managers at gas stations, found that modularity has the greatest impact on resilience and that IT flexibility plays a significant role. The results emphasize cooperation and information sharing as the main strategies for overcoming obstacles and seizing opportunities, and it is evident that flexible IT infrastructure is crucial for maintaining business continuity and growth (Mijbas et al., 2025). In the oil and gas distribution industry, this study examines how key supply chain operations are affected by Sustainable Supply Chain Management (SSCM) tactics, specifically supplier selection, product stewardship, and logistics management. Based on actual data collected from 79 firms in Romania and Moldova, the results show that SSCM tactics significantly improve planning, execution, coordination, and teamwork. Based on the available data, companies can improve supply chain performance and meet their social and environmental responsibilities by implementing sustainable practices (Florescu et al., 2019). This study looks at how corporate efficacy and efficiency are affected by logistics management, which includes transportation, warehousing, packaging, inventory, and information management. An analysis of 80 Macedonian businesses confirms that enhancing these logistics operations significantly lowers expenses and boosts output. The key conclusions highlight how crucial logistics managers are to resource management for raising customer satisfaction, competitiveness, and overall business performance (Ristovska et al., 2017). This study examines how various logistics management techniques—such as information systems, inventory management, transportation control, and order handling—affect organizational performance. Effective logistics and internal management are essential to a company's ability to please customers, which in turn leads to a competitive edge, according to a case study supported by data from 80 employees. Data was collected using questionnaires and interviews, and it was analyzed using descriptive statistics. The findings highlight how crucial effective logistics procedures are to enhancing service delivery, and more study on how logistics affects service quality and procurement concerns in modern businesses is suggested (Nyaberi & Mwangangi, 2014). A framework and analytical model for assessing the impact of traditional supply chain management (SCM) techniques on sustainable performance on the social, environmental, and economic fronts are proposed in this study. By using a sustainability triad to evaluate SCM practices, the model helps determine how these practices affect company performance and competitiveness over time. In order to demonstrate how businesses can combine supply chain strategy with sustainable development goals, this study applies this approach to two best practices. To determine which SCM methods are most helpful in promoting sustainability goals, the model is a helpful tool (Chardine-Baumann & Botta-Genoulaz, 2014). This study looks at how supply chain management (SCM) techniques and competitive success are affected by human resource concerns. Utilizing survey data from 358 sizable manufacturing and service businesses in the United States, the study finds that employee and manager support boosts training efficacy and streamlines implementation. The findings highlight HRM's strategic role in improving SCM success and show that even when rivals adopt the same SCM best practices, effective HR initiatives

can provide a long-term competitive edge (Gowen & Tallon, 2003). This study looks at China's supply chain financing (SCF) and how crucial it is becoming to supporting sustainable supply chain management (SCM). Through an analysis of 151 SCF articles written by Chinese authors and published in prestigious journals between 2004 and 2014, this study finds important topics, theories, and methodologies in Chinese SCF literature. It concludes that SCF practices in developed nations are not the same as those in China, which has developed differently due to the country's particular economic climate. By adding Chinese SCF studies to the body of worldwide SCM literature, this study closes a gap (Liu et al., 2015). According to the study, logistics is becoming more and more important as a strategic endeavor to attain both product quality and competitive advantage. From the viewpoint of Logistics Service Providers (LSPs), it develops a reliable tool to assess several aspects of Supply Chain Management (SCM) in India. The data suggests that while supply chain orientation does not substantially affect financial success, it does have a considerable impact on the link between SCM practices and business performance (Peelen et al., 2009). With storage, transportation, and packaging being the most significant components, logistics and supply chains play a critical role in corporate operations. Previously hindered by strict regulations, India's logistics sector is currently expanding as a result of government initiatives like the Sagarmala Project, which develops ports to improve trade efficiency. In addition to discussing a case study on export-import optimization through port expansion, the article highlights recent advancements and trends in the industry (Soni et al., 2017). The cost of oil and its derivatives is greatly impacted by the particular logistical constraints that supply chain management in the petroleum industry encounters. Despite these obstacles, there are ways to cut costs, such the popular "swap" strategy utilized by big businesses like BP and BASF. This study examines these issues and demonstrates how swap methods, which are frequently disregarded in operations management studies, provide effective answers (Hussain et al., 2006). Due mostly to a lack of communication and consumer reluctance, the petrochemical industry has a difficult time implementing sustainable supply chain procedures. By applying a decision-making framework to the Saudi environment, this study assists in prioritizing these obstacles and provides information for improved managerial choices (Barahona et al., 2024). 230 supply chain workers' data is used in this study to create a system for integrating the closed-loop supply chain in the petrochemical industry. According to the findings of SEM study, sustainability is positively impacted by environmental laws, consumer awareness, and economic incentives. Closed-loop supply chains, in general, significantly and favorably affect sustainable performance (El-Sheikh & Kovačič Lukman, 2022). Limited transportation choices, lengthy lead times, and supplier constraints result in an inflexible logistics network for the oil industry. This study emphasizes important elements such as automated information systems, better transportation scheduling, demand management, and distribution optimization. Supply chain management increases overall profitability, enhances delivery planning, and lowers expenses (Lisitsa et al., 2019). This study emphasizes how crucial efficient supply chain management (SCM) is to enhancing flexible system (FS) and total quality management (TQM) procedures in the oil and gas industry. According to data from significant industry participants, TQM and FS are positively correlated with SCM processes, particularly strategy and customer interactions. The results highlight the necessity of effective SCM and FS procedures to boost productivity and draw capital to India's undeveloped oil industry (Siddiqui et al., 2012).

## **Objectives:**

To examine how Nandkishor Roadlines clients are satisfied with time-related supply chain management procedures, such as planning and on-time delivery.

To assess how supply-related factors (such as vehicle availability, load constancy and routing) contribute to improved SCM performance and service dependability.

To examine the impact that convenience – related services (such as tracking, booking processes and communication ease) have on the client experience.

To look into how adopted technology (such as GPS monitoring, electronic documentation and automated warnings) affects SCM operations' efficiency and transparency.

To provide recommendations for enhancing Nandkishor Roadlines' tactics based on client input.

## **Hypothesis:**

Four main variables—time-related issues, supply-related issues, convenience, and technology usage—were used to construct hypotheses about how Supply Chain Management (SCM) practices impact customer satisfaction at Nandkishor Roadlines. The purpose of the hypothesis is to investigate each SCM factor's unique effect as well as its combined association.

**4.1: Main Hypotheses** **H<sub>0</sub> (Null Hypothesis): Nandkishor Roadlines' customer satisfaction and SCM practices (time, supply, convenience, and technology) do not significantly correlate.** **H<sub>1</sub> (Alternative Hypothesis): At Nandkishor Roadlines, customer satisfaction is strongly correlated with SCM practices (time, supply, convenience, and technology).**

**4.2: Sub-Hypotheses** **4.2.1: Time-Related Issues** **H<sub>0a</sub>: Customer satisfaction is not significantly predicted by time-related SCM practices (delivery speed, scheduling efficiency).**

**H<sub>1b</sub>:** Customer satisfaction is not significantly predicted by supply chain management strategies (such as vehicle availability and load consistency).

### **4.2.2: Supply-Related Issues**

H<sub>0b</sub>: SCM practices related to supply (vehicle availability, load consistency) are not significant predictors of customer satisfaction. H<sub>1b</sub>: Supply-related SCM procedures significantly predict customer satisfaction.

**4.2.3: Convenience-Related Issues** **H<sub>0c</sub>:** Customer satisfaction is not significantly impacted by convenience-oriented SCM methods (easier booking, easier documentation, and less manual involvement).

H<sub>1c</sub>: Customer satisfaction is significantly impacted by convenience-oriented SCM methods.

**4.2.4: Technology-Related Issues** **H<sub>0d</sub>:** Customer satisfaction is not significantly impacted by technology-related SCM techniques (such as automation, electronic documentation, and GPS monitoring). **H<sub>1d</sub>:** Customer satisfaction is significantly impacted by SCM practices related to technology.

With the four SCM characteristics as independent variables and customer satisfaction as the dependent variable, these hypotheses provide a structured framework for testing using linear regression analysis. Each null hypothesis is accepted or rejected based on the statistical results (p-values, coefficients).

## **Research Methodology:**

### **5.1: Census/Population**

All of Nandkishor Roadlines' customers who regularly utilize its hazardous liquid and petrochemical carriage services make up the research population. They come from a variety of industries, including

chemicals, petroleum, and related ones, where dependable, safe, and timely logistics solutions are critical. These companies' perspectives provide a comprehensive picture of how supply chain management (SCM) techniques impact operational performance and customer satisfaction because they are heavily dependent on SCM. The census population is a representation of all business partners who have used the company's services personally and are qualified to evaluate aspects like technology adoption, ease, supply consistency, and time efficiency.

## **5.2: Sample**

A sample of 103 was chosen from the total clientele. Given the study's time constraints, this sample size is both appropriate for producing meaningful insights and manageable for collecting and analyzing data. To guarantee that the responses were based on real-world experience, the respondents were chosen based on their current or past association with Nandkishor Roadlines. Feedback from this sample is accurate in expressing concerns, satisfaction levels, and suggestions for improvement because petrochemical logistics involves strict safety and service criteria.

## **5.3: Sampling Methods**

Using a non-probability convenience sampling technique, the study selected participants based on their availability, willingness, and cooperation. This is because practical considerations such as time constraints, the geographical dispersion of clients, and the need for quick communication led to the technique's adoption. Convenience sampling made data collection quick and efficient, but because not every customer had an equal chance of being interviewed, it can also increase the risk of sample bias. However, the sample still represents a variety of customer industries, offering a broad view of service performance.

## **5.4: Data Collection Methods**

To give the information a sense of uniqueness and importance, the study only used primary data collecting. A pre-formatted questionnaire was used to gather data, and it was sent online as well as through direct communication channels (phone or in-person contact, if possible). To guarantee the maximum response rate and reach clients located in different states such as Gujarat, Maharashtra, Odisha, Chhattisgarh, and Rajasthan, a double-stranded strategy was employed. The study avoided using stale or secondary data by collecting first-hand replies, which allowed for an accurate assessment of the current perceptions of SCM processes.

## **5.5: Data Collection Instruments**

A self-administered questionnaire that was meticulously designed to meet the study's goals served as the primary research tool. Four major SCM dimensions were the focus of the multiple-choice and Likert scale questions that made up the test:

Time-related problems (delivery speed, scheduling efficiency)

Supply-related problems (vehicle availability, material flow uniformity)

Convenience-related problems (easiness of booking, paperwork, and operation)

Issues pertaining to technology (GPS tracking automatically, internet systems, automation challenges)

Additional inquiries measured client satisfaction in areas such as service quality, responsiveness, and complaint management.

To increase response dependability, the survey was designed to be straightforward, precise, and easy for respondents to complete.

The survey was made simple, specific, and respondent-friendly to maximize response reliability. A self-report questionnaire including multiple-choice and Likert scale questions served as the main tool for gathering data.

## Data Analysis and Interpretation

Descriptive statistics and inferential techniques (linear regression analysis) were used to evaluate the collected data:

In order to summarize customer input and find patterns or trends in the perceptions of SCM procedures, descriptive statistics were used.

Validity and reliability testing ensured that the items on the questionnaire accurately expressed the research variables and were unambiguous and consistent.

To investigate the connections between customer satisfaction and the four SCM aspects, linear regression analysis was used. The results showed that while time, supply, and convenience had no bearing, technology-based practices had a considerable positive influence.

The study's robustness and trustworthiness were increased since the statistical results (R, R<sup>2</sup>, p-values, and coefficients) offered evidence-based interpretation rather than assumption-based interpretation.

## Results

### Linear Regression

| Model                                                    | R                                                 | R <sup>2</sup>                                    | Adjusted R <sup>2</sup>                           | AIC                                               | BIC                                               | RMSE                                              |
|----------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| <b>1</b>                                                 | 0.280                                             | 0.0781                                            | 0.0405                                            | 235                                               | 251                                               | 0.715                                             |
| <b>Note. Models estimated using sample size of N=103</b> | Note. Models estimated using sample size of N=103 | Note. Models estimated using sample size of N=103 | Note. Models estimated using sample size of N=103 | Note. Models estimated using sample size of N=103 | Note. Models estimated using sample size of N=103 | Note. Models estimated using sample size of N=103 |

The weakly positive correlation between customer satisfaction and SCM variables (A, B, C, and D) is indicated by the R value of 0.280. The R<sup>2</sup> value (0.0781) suggests that just 7.8% of the SCM practices discussed in your study may account for the variation in customer satisfaction. With the number of variables included taken into account, the Adjusted R<sup>2</sup> (0.0405) is marginally lower, indicating that the model's explanatory ability is restricted. Since there is just one model, AIC (235) and BIC (251) are only reference values. The lower the AIC, the better.

The RMSE (0.715) shows the average difference between the expected and actual values, indicating a modest level of inaccuracy.

| Predictor | Estimate | SE     | Lower   | Upper | t     | p     | Stand. Estimate | Lower  | Upper  |
|-----------|----------|--------|---------|-------|-------|-------|-----------------|--------|--------|
| Intercept | 2.5000   | 0.6172 | 1.2752  | 3.725 | 3.725 | 4.051 | <.001           |        |        |
| A         | 0.0687   | 0.0974 | -0.1246 | 0.262 | 0.262 | 0.705 | 0.482           | 0.0733 | 0.0733 |
| B         | 0.0706   | 0.0878 | -0.1037 | 0.245 | 0.245 | 0.803 | 0.424           | 0.0841 | 0.0841 |
| C         | 0.0105   | 0.1039 | -0.1957 | 0.217 | 0.217 | 0.101 | 0.919           | 0.0106 | 0.0106 |
| D         | 0.2436   | 0.1051 | 0.0351  | 0.452 | 0.452 | 2.319 | 0.022           | 0.2356 | 0.2356 |

The baseline or intercept is 2.5, meaning that on the used scale, baseline happiness is at 2.5 when all SCM elements are zero.

With a relatively small positive estimate (0.0687) and an exaggerated p-value (0.482), variable A (time-related slowness or speedup) is not significant in this data, satisfaction was not significantly impacted by time-related issue.

With a p-value of 0.424 and a minor effect (0.0706), variable B (supply issues) is likewise not significant. With an estimate of almost zero (0.0105) and an exceptionally high p-value (0.919), variable C (convenience) indicates no influence at all.

With a p-value of 0.022 and an estimated value of 0.2436, variable D (technology-related difficulties) is significant. This suggests that technology, such as GPS monitoring, online reservations, or real-time information, has a favorable and substantial impact on customer satisfaction.

## Assumption Checks

### Residual Plots

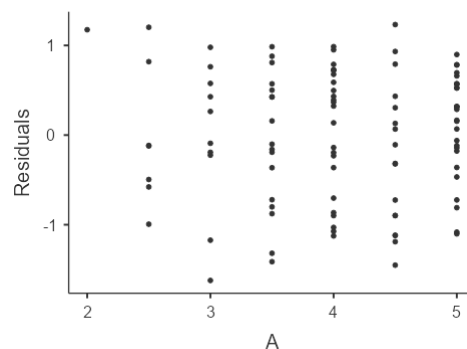
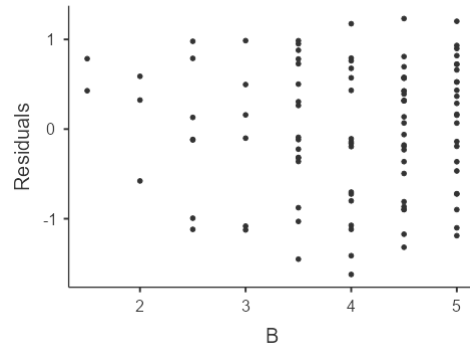
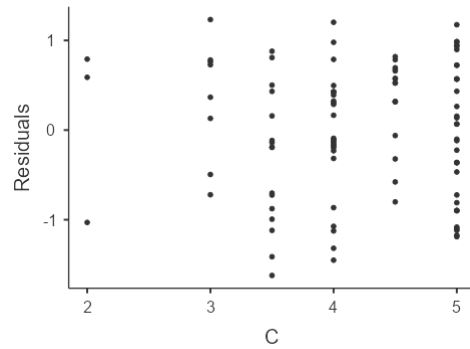


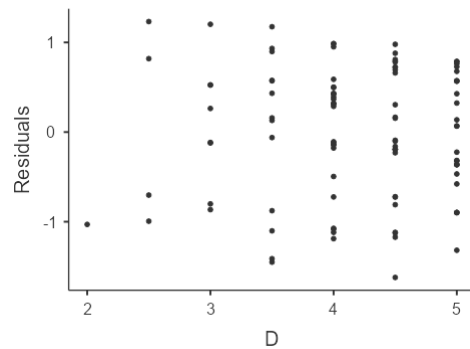
Figure 1. Residuals vs Variable A



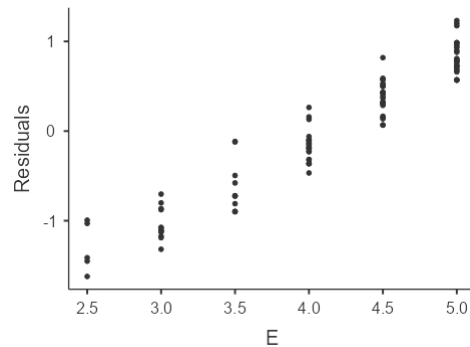
*Figure 2. Residuals vs Variable B*



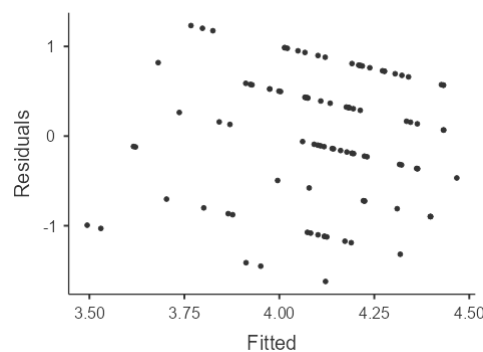
*Figure 3. Residuals vs Variable C*



*Figure 4. Residuals vs Variable D*



*Figure 5. Residuals vs Variable E*



*Figure 6. Residuals vs Fitted Values*

Since there is no obvious pattern to the residual plots, it appears that the errors (residuals) are distributed randomly. This shows that the assumptions of independence, linearity, and homoscedasticity—or equal variance—are supported.

The regression model has a weak explanatory power, but it is mathematically sound because there are no obvious strong outliers or trends in the residuals. Customer satisfaction is considerably and favourably impacted by technology-based supply chain management strategies, according to the regression equation.

Time, supply, and convenience are the other variables that show no discernible influence in the study. Even though the model only takes into consideration a tiny portion of customer satisfaction ( $R^2 = 7.8\%$ ), Nandkishor Roadlines can still benefit from using it to help them prioritize improving their logistics operations' technological capabilities.

## Results and Findings

The study examined the relationship between customer satisfaction at Nandkishor Roadlines and four important Supply Chain Management (SCM) dimensions: time-related concerns, supply-related issues, convenience-related issues, and technology adoption. A standardized questionnaire was used to gather a sample of 103 client replies, and each variable's importance was tested using linear regression analysis.

### 7.1: Performance of the Model

Customer satisfaction and SCM practices have a weakly positive association, as indicated by the R value of 0.280.

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**0.0781 (7.8%) → R<sup>2</sup> The four SCM factors taken into consideration in the study only account for roughly 7.8% of customer satisfaction.**

Adjusted R<sup>2</sup> = 0.0405 => The explanatory power is still low even after accounting for the number of predictors.

A moderate average error between the expected and actual satisfaction levels is shown by the RMSE of 0.715.

Residual plots showed no major patterns, confirming that model assumptions such as linearity, homoscedasticity, and independence of errors were met.

## **7.2: Findings for Individual Variables 7.2.1: Problems with time (Variable A)**

P-value: 0.482, estimate: 0.0687

No discernible effect on client satisfaction.

shows that customers do not view scheduling effectiveness or delivery speed as key differentiators.

### **7.2.2: Problems with the supply (Variable B)**

P-value: 0.424, estimate: 0.0706

No discernible effect on client satisfaction.

Implies that supply consistency and vehicle availability are not seen as urgent issues, perhaps because customers currently regard these to be sufficient.

### **7.2.3: Issues pertaining to convenience (Variable C)**

P-value: 0.919, estimate: 0.0105

no discernible impact on client satisfaction.

Client perceptions are not significantly impacted by automated documentation or less manual intervention, according to the coefficient's near-zero value.

### **7.2.4: Problems with technology (Variable D)**

P-value 0.022, estimate: 0.2436 (statistically significant at the 5% level)

Customer happiness is positively and significantly impacted by technology.

Customer experiences and confidence are greatly influenced by features like digital monitoring, real-time updates, online booking, and GPS tracking.

The only factor that significantly affects customer happiness is technology-based supply chain management. Convenience, supply dependability, and time efficiency all have no discernible effects, suggesting that they either already satisfy baseline expectations or are not important factors influencing satisfaction. Despite being statistically sound, the regression model's low explanatory power (R<sup>2</sup> = 7.8%) indicates that a wide range of additional factors outside the purview of the study affect customer satisfaction (e.g., pricing, relationship quality, after-sales assistance).

## **Limitations of the study**

**8.1: Sampling limitations:** The dataset used convenience sampling, which may not be ideal for all of Nandkishor Roadlines' customers. **8.2: Cross-sectional design:** Since data was collected just once, it is unable to analyze how long-term customer perception has evolved. **8.3: Low explanatory power:** The model only explains a small portion of the variation in customer satisfaction, with an  $R^2$  of 7.8%, suggesting that additional factors require investigation. **8.4: Subjectivity of responses:** Rather than being based solely on objective measurements, customer feedback is perception-based and subject to change depending on personal experiences or biases.

Only a few SCM factors were taken into account; no other potential dimensions, such as cost, after-sales support, or relationship quality, were taken into account.

## **Contribution of the study**

**9.1: Empirical proof:** In a subject with few in-depth studies, the research provides measurable evidence on how SCM methods affect customer satisfaction in petrochemical logistics. **9.2: Technology prioritization:** It identifies Nandkishor Roadlines' use of technology as the SCM practice that has the biggest impact on customer satisfaction. **9.3: Useful advice:** Offers helpful recommendations for enhancing logistics management, which informs the business's investment plan. **9.4: Future research foundation:** Offers the groundwork for more comprehensive studies that incorporate other qualitative components including service flexibility, price, and relationship management. **9.5: Relevance to the industry:** Expands on the broad understanding of how logistics companies involved in the transportation of hazardous materials should align supply chain management (SCM) procedures with customer demands and industry safety standards.

## **Conclusion**

The purpose of this study was to find out how much Nandkishor Roadlines' customers are satisfied with the Supply Chain Management (SCM) practices of time efficiency, supply stability, operational ease, and technology adoption.

The following conclusions were drawn from 103 customers' feedback and the result of linear regression analysis:

Practices using technology (such as GPS tracking, real-time information sharing, and electronic documentation) have a major and favourable impact on customer satisfaction.

The lack of statistically significant influence for time, supply, and convenience-related activities suggests that customers either view these factors as less critical than technology or believe they are enough.

The model's overall explanatory power ( $R^2 = 7.8\%$ ) is poor, suggesting that a wide range of additional factors—in addition to the four examined—have an impact on customer satisfaction.

In essence, Nandkishor Roadlines must take into consideration other qualitative elements like relationship management, price flexibility, and personalized services in order to fully understand the aspects that influence customer happiness, even though technology surely contributes to better service perception.

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