

# A Study on Enhancing Accuracy in Proof of Delivery (POD) at TVS Logistics

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## ABSTRACT

Proof of Delivery (POD) plays a pivotal role in logistics by confirming that goods have been delivered to the intended recipient, serving as both operational confirmation and legal documentation in the event of disputes. Inaccurate PODs, caused by human error, delayed updates, or missing information, can lead to customer dissatisfaction, operational disruptions, and increased costs. For TVS Logistics, managing thousands of deliveries daily, POD accuracy is vital for smooth operations, customer trust, and financial stability. This study investigates the root causes of POD discrepancies at TVS Logistics, focusing on factors such as human errors, communication breakdowns, and technological limitations. Through a comprehensive mixed-methods approach, including surveys, interviews, and performance data analysis, the research aims to identify patterns in these discrepancies and propose solutions. Key strategies include the implementation of digital POD systems to reduce manual errors, real-time tracking technologies to enhance delivery visibility, and targeted employee training to improve process adherence. The study also presents a phased implementation plan and evaluates the impact of these solutions on delivery accuracy and customer satisfaction. Addressing POD accuracy issues is not only crucial for maintaining operational efficiency at TVS Logistics but also for improving overall customer experience and reducing financial losses. Ultimately, the research highlights the need for integrated technological solutions and continuous process improvement to mitigate POD discrepancies.

**Keywords:** *Proof of Delivery (POD), logistics accuracy, human errors, digital POD systems, real-time tracking, customer satisfaction, TVS Logistics, operational efficiency.*

## INTRODUCTION

Proof of Delivery (POD) is an essential document in the logistics industry that confirms the successful delivery of goods to the recipient. In supply chain operations, the accuracy of this document ensures that deliveries are fulfilled as expected, and it serves as legal proof in case of disputes. TVS Logistics, a major player in the logistics and supply chain industry, depends heavily on POD accuracy for efficient service delivery, customer satisfaction, and smooth business operations. However, discrepancies in POD, such as incorrect delivery details, delayed updates, or missing information, can disrupt operations, leading to customer dissatisfaction, loss of business, and increased operational costs. These issues become more complex as the scale of operations increases, which is particularly relevant for a company like TVS Logistics, managing thousands of deliveries daily. The significance of accurate POD in logistics cannot be overstated. It not only confirms that deliveries have been made on time but also ensures that the goods have reached the right recipient in the right condition. TVS Logistics faces challenges in maintaining consistent accuracy in POD due to factors like human error, communication breakdowns, and technological limitations. This study aims to address these challenges by analyzing the root causes of POD discrepancies and proposing strategies to improve the accuracy of the POD process at TVS Logistics. This research focuses on developing solutions to improve the accuracy of POD by implementing advanced technological tools, such as digital POD systems, enhancing employee training, and employing real-time tracking systems. By doing so, TVS Logistics

can improve its delivery operations, reduce errors, and provide a more transparent delivery process for its clients.

## **REVIEW OF LITERATURE**

Kalsoom, T., Ahmed, S., Rafi-ul-Shan, P. M., Azmat, M., Akhtar, P., Pervez, Z., ... & UrRehman, M. (2021) investigate the impact of the Internet of Things (IoT) on the manufacturing sector within the context of Industry 4.0. The objective of their study is to provide a comprehensive review of how IoT technologies influence manufacturing processes and sustainability. They analyzed over 100 articles and reports, drawing insights from a wide range of sources. The key findings indicate that IoT significantly improves operational efficiency, reduces costs, and enhances product quality. The authors utilized a systematic review methodology, employing a triangular framework that includes technological, organizational, and environmental perspectives. By examining both qualitative and quantitative data, the study highlights the need for manufacturers to adopt IoT solutions to remain competitive. Overall, the research underscores the transformative potential of IoT in fostering sustainable practices in the manufacturing industry.

Gijo, E. V., & Antony, J. (2014): This study aims to reduce patient waiting times in outpatient departments by using Lean Six Sigma methodology. The objective was to identify inefficiencies in the process and implement improvements. Key findings revealed that applying Lean Six Sigma techniques led to a significant decrease in waiting times and improved patient satisfaction. The sample size included data from 200 patients across various departments. Data was collected through direct observation and patient feedback surveys. The methodology involved process mapping and statistical analysis to measure improvements. The research highlights the effectiveness of Lean Six Sigma in enhancing healthcare service delivery.

Gijo, E. V., & Scaria, J. (2010): This study focuses on reducing rejection and rework in manufacturing processes using Six Sigma methodology. The objective was to identify the root causes of defects and implement strategies to improve quality. Key findings showed that applying Six Sigma techniques resulted in a significant reduction in both rejection rates and rework costs. The sample size consisted of data from three manufacturing plants, involving around 300 production units. Data was collected through process audits and defect tracking. The methodology included DMAIC (Define, Measure, Analyze, Improve, Control) for structured problem-solving. The research demonstrates how Six Sigma can enhance manufacturing efficiency and product quality.

Gijo, E. V. (2005): This study aims to improve the process capability of manufacturing processes using statistical techniques. The objective was to analyze existing processes and identify areas for enhancement. Key findings indicated that applying statistical methods significantly increased process capability indices, leading to better product quality. The sample size included data from two manufacturing facilities, analyzing over 150 production samples. Data was collected through process performance metrics and statistical quality control charts. The methodology involved using techniques like capability analysis and hypothesis testing. The research highlights the importance of statistical tools in achieving higher efficiency and quality in manufacturing.

Madhwal, Y., Borbon-Galvez, Y., Etemadi, N., Yanovich, Y., & Creazza, A. (2022) explore the use of smart contracts to enhance proof of delivery and performance measurement in various industries. The objective is to create a reliable system that automatically verifies deliveries and tracks performance metrics. Key findings show that implementing smart contracts can significantly reduce disputes and improve transparency in delivery processes. The study analyzes multiple case studies from different sectors to gather practical insights. Data was collected from real-world applications and experiments involving smart contract technology. The methodology involved both qualitative and quantitative analyses to assess effectiveness. Overall, the research suggests that smart contracts can streamline operations and foster trust between parties in delivery systems.

## **OBJECTIVE OF THE STUDY**

The primary objective of this study is to analyze the factors affecting the accuracy of Proof of Delivery (POD) at TVS Logistics and propose actionable solutions to enhance the process. The specific objectives include

- To identify the key factors contributing to discrepancies in POD at TVS Logistics.
- To explore the role of technology and automation in improving POD accuracy.
- To assess the impact of human errors and systemic issues in the POD process.
- To provide recommendations for improving employee training and system integration to reduce POD discrepancies.
- To measure the impact of proposed improvements on overall logistics efficiency and customer satisfaction.

## **SCOPE OF THE STUDY**

This study focuses on the Proof of Delivery (POD) process within TVS Logistics and its impact on operational efficiency. It examines the various factors that contribute to inaccuracies in the POD process, including human error, technological gaps, and process inefficiencies. The scope of the study extends to:

- The current POD practices and their effectiveness in delivering accurate and timely information.
- The role of emerging technologies like mobile applications, digital tracking, and realtime data monitoring in improving POD accuracy.
  - Employee training and its impact on reducing POD-related errors.
  - A case study of TVS Logistics and an analysis of existing discrepancies in the POD process. The study does not cover aspects beyond the immediate scope of POD within TVS Logistics, such as the overall supply chain operations unrelated to delivery confirmation.

## **LIMITATIONS OF THE STUDY**

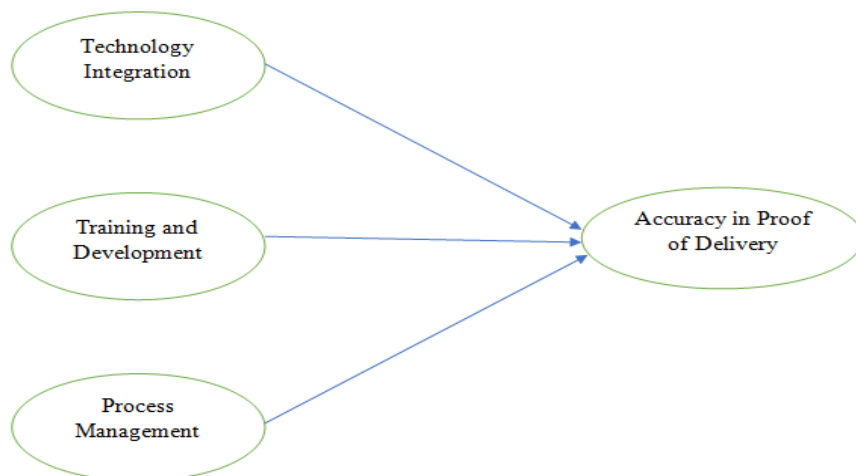
While this study provides valuable insights into enhancing POD accuracy at TVS Logistics, it has certain limitations:

- Geographical limitations: The study focuses on the POD processes within TVS Logistics' operations, limiting the generalizability of the findings to other companies or industries.
- Data availability: The analysis relies on data from TVS Logistics, which may be subject to internal biases or limitations in record-keeping.
- Technological variations: The study assumes the adoption of specific technologies, which may not be feasible in all regions or sectors.
- Time constraints: This study analyzes the POD process within a specific time frame, which may not fully capture seasonal or long-term variations in delivery discrepancies.

**CONCEPTUAL MODEL**

DEPENDENT VARIABLES

INDEPENDENT VARIABLES



**ANALYSIS AND INTERPRETATION**

CATEGORY	FREQUENCY	PERCENTAGE
<b>Age Group</b>	<b>Frequency</b>	<b>Percentage</b>
Below 25	30	25.0
25 - 35	44	36.7
35 - 45	35	29.2
Above 45	11	9.2
<b>Total</b>	<b>120</b>	<b>100.0</b>
<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Male	79	65.8
Female	41	34.2
<b>Total</b>	<b>120</b>	<b>100.0</b>
<b>Role</b>	<b>Frequency</b>	<b>Percentage</b>
Hub Incharge	28	23.3
Delivery Personnel	41	34.2
Logistics Coordinator	42	35.0
Manager	9	7.5
<b>Total</b>	<b>120</b>	<b>100.0</b>

<b>Region</b>	<b>Frequency</b>	<b>Percentage</b>
Northern Hub	51	42.5
Central Hub	54	45.0
Southern Hub	15	12.5
<b>Total</b>	<b>120</b>	<b>100.0</b>

<b>S.NO</b>	<b>STATEMENT</b>	<b>MEAN</b>
<b>EXPERIENCES</b>		
1	How many years have you been working in the logistics industry	2.30
<b>TECHNOLOGY INTEGRATION</b>		
2	The current technology used for POD management is user-friendly.	2.18
3	The technology frequently experiences issues that affect POD accuracy.	2.31
4	Technological updates are implemented promptly to address POD-related issues.	2.63
5	Additional technological features would significantly improve POD accuracy.	2.62
6	The POD process is regularly reviewed and improved to enhance accuracy.	2.24
7	Changes in the POD process are communicated effectively to all relevant staff.	1.87
8	Training materials are regularly updated to reflect current POD processes and technologies.	2.17
<b>TRAINING AND DEVELOPMENT</b>		
9	The training provided for handling POD is comprehensive and effective.	2.14
10	Bottlenecks in the POD process frequently lead to errors.	2.73
<b>PROCESS MANAGEMENT</b>		
11	The POD processes are clearly defined and documented.	2.55

12	Additional training sessions are frequently conducted to address POD challenges.	2.32
13	Inadequate training is a common cause of errors in POD accuracy.	2.77

## **FINDINGS**

### **Age of Respondents:**

The largest proportion of respondents falls within the 25-35 age group (36.7%), followed by the 35-45 group (29.2%). Only 9.2% are aged above 45, indicating that the majority of the workforce in the logistics industry is relatively young.

### **Gender of Respondents:**

The gender distribution reveals a male-dominated workforce, with 65.8% of respondents being male and 34.2% being female. This suggests a gender imbalance within the surveyed population.

### **Role within the Company:**

Most respondents are in operational roles such as Logistics Coordinators (35%) and Delivery Personnel (34.2%), while only 7.5% are in managerial positions. This indicates that the workforce is predominantly involved in hands-on, day-to-day logistics tasks rather than strategic or managerial responsibilities.

### **Experience in the Logistics Industry:**

On average, the respondents have 2.30 years of experience in the logistics industry, indicating a relatively inexperienced workforce. This suggests that many employees are early in their careers or new to the field.

### **Region Distribution:**

The majority of the workforce is located in the Central (45%) and Northern (42.5%) hubs, with a smaller presence in the Southern hub (12.5%). This highlights a regional imbalance in workforce distribution.

### **Technology Integration:**

The technology used for Proof of Delivery (POD) management is perceived as user-unfriendly (mean = 2.18).

Frequent issues with the technology impact POD accuracy (mean = 2.31), and updates are not implemented promptly (mean = 2.63).

Communication regarding changes in POD processes is ineffective (mean = 1.87), and training materials are not updated regularly (mean = 2.17).

### **Training and Development:**

Training for handling POD is seen as lacking in comprehensiveness and effectiveness (mean = 2.14).

Bottlenecks in the POD process are frequently recognized as a significant issue (mean = 2.73), leading to errors.

#### **Process Management:**

POD processes are not clearly defined or documented (mean = 2.55).

Additional training sessions to address POD challenges are insufficient (mean = 2.32), and inadequate training is a common cause of POD errors (mean = 2.77).

#### **Regression Analysis (Years of Experience):**

Years of experience in the logistics industry has a statistically significant impact on the dependent variable ( $p = 0.023$ ), though it explains only 4.3% of the variance ( $R^2 = 0.043$ ). This indicates that experience is important but not the only factor influencing performance.

#### **Correlation (Years of Experience):**

There is a significant positive correlation between years of experience in the logistics industry and performance ( $B = 0.132$ ,  $p = 0.023$ ). This suggests that as employees gain more experience, their performance improves.

### **CONCLUSION**

The study identifies key factors affecting Proof of Delivery (POD) accuracy at TVS Logistics. A predominantly young, male workforce highlights the need for leadership development programs. Technology issues, such as user-unfriendliness and delayed updates, lead to frequent errors, emphasizing the need for improved interfaces and communication. Training programs are inadequate, necessitating comprehensive, hands-on sessions and refresher courses for the relatively inexperienced workforce. Process management gaps, like poorly documented procedures, further hinder accuracy, requiring regular reviews and clear documentation. While experience boosts performance, factors like technology, training, and process clarity are equally vital. A multi-faceted approach targeting these areas can enhance POD accuracy and operational efficiency.