

LB/TH/39/2025

TH5986

**USAGE OF GPS VEHICLE TRACKING SYSTEM FOR IMPROVING SUPPLY
CHAIN OPERATIONS**

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DECLARATION

I declare that all materials included in this report are the result of my own work and that due acknowledgment has been given in the bibliography and references to all sources, whether printed, electronic, or personal.

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Date: 21.07.2025

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CERTIFICATION

This is to certify that the research report presented by G. P. Dandeniya on “Usage of GPS Vehicle Tracking Systems for Improving Supply Chain Management Operations” can be accepted in partial fulfillment of the requirements for the MBA in Supply Chain Management.

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Date: 22.07.2025

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ABBREVIATIONS

GPS	Global Positioning System
GS	Global System for Mobile Communication
M	Estimated Time of Arrival
ETA	Key performance indicator
KPI	Operation Control Center
OCC	Proof of Delivery
POD	

ACKNOWLEDGMENTS

My foremost duty is to pay my special gratitude to my supervisor Prof. Amal S. Kumarage, for the guidance, encouragement, and support extended throughout the research. I am also grateful to thank the research coordinator Dr. Harishani Liyanage & Dr. Anuja Fernando for conducting the lecture sessions under Research Methodologies and sharing precious knowledge about the research process.

I extend my special gratitude to course director Dr. Indika Sigera, Department of Logistics for allowing conducting the individual research, and for their keen interest, encouragement, and guidance to complete a successful dissertation.

Also, I express my warm and sincere thanks to all participants who contributed to the data collection process in various ways. Finally, I am most sincerely grateful to my family members and all others who supported me throughout this effort to make it a success.

USAGE OF GPS VEHICLE TRACKING SYSTEM FOR IMPROVING SUPPLY CHAIN OPERATIONS

ABSTRACT

With ever-increasing competition, supply chains that can change and modernize themselves to enhance efficiency and effectiveness have been able to gain a vital competitive advantage. GPS vehicle tracking technology is one such significant enabler for supply chain performance improvement through creative and innovative utilization. This research was conducted to obtain answers to the questions, of whether the Sri Lankan supply chains use GPS vehicle tracking technology to its fullest potential and what are the barriers for its enhanced utilization. Identification of the motives to use the technology, analysis of the level of application, identification of major barriers to its enhanced utilization, and identification of suitable adjustments were the specific objectives of conducting the research. The lack of literature on the subject concerning Sri Lanka was identified as a requisite to be researched.

The literature largely focused on identifying the variety of applications and benefits available with GPS vehicle tracking technology. The focus areas included operations planning, customer service, vehicle and driver management, load factor improvement, and many more. The data was preliminary collected using a questionnaire survey from a sample of 34 respondents through email and interview. The population was defined as business organizations in the Colombo district that are involved in manufactured product delivery and are presently using GPS vehicle tracking technology. The judgment sampling method was used for sample selection. The questionnaire was developed based on the literature survey using a 5-point Likert scale. Descriptive statistics such as frequencies, descriptive, cross tables, and chi-square tests were used for data analysis. Reliability analysis was performed using Cronbach's alpha.

The research revealed that irrespective of whether a company specializes in logistics operations, its fleet size, or product transported detecting fraud is the primary motivation to adopt GPS vehicle tracking technology in Sri Lanka, followed by the motivation to improve safety. Although not for the majority, improvement in responsiveness and customer requests has also become the motivation to adopt GPS vehicle tracking. Surprisingly, reduction of operating costs is rarely the objective of Sri Lankan companies to adopt GPS vehicle tracking.

The objective of fraud detection is also the key objective to adopt GPS vehicle tracking for large companies (operating a fleet above 30) in Sri Lanka. In contrast, small companies (with a fleet of less than 10) are not very motivated to use GPS at all, unless otherwise their customers request. The research also revealed that, for companies transporting apparel, vehicles or machinery safety is the key motivation followed by responsiveness to adopt GPS vehicle tracking.

The research also highlighted the critical role of GPS vehicle tracking service providers and the development of collaborative relations between user and service provider was recommended.

Keywords: GPS vehicle tracking, Sri Lankan supply chains, motives, applications, barriers