



**The Chartered  
Institute of Logistics  
and Transport**

# **2<sup>nd</sup> RESEARCH SYMPOSIUM ON SUPPLY CHAIN MANAGEMENT & LOGISTICS**

**NAVIGATING THE FUTURE INNOVATIONS AND  
SUSTAINABILITY IN SUPPLY CHAIN MANAGEMENT**

**16<sup>th</sup> FEBRUARY 2024**

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**Navigating the Future Innovations and  
Sustainability in Supply Chain Management**

The Chartered Institute of Logistics and Transport  
Sri Lanka

16<sup>th</sup> February, 2024

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## Message of the President of CILT Sri Lanka

I am honored and privileged to pen this message in the second research symposium organized by the Chartered Institute of Logistics and Transport (CILT SL), as the president on the theme of Navigating the Future Innovations and Sustainability in Supply Chain Management. CILTSL education pillar has taken many initiatives in the past to enhance the capacity of young researchers and professionals in the field. For the second consecutive year, CILT has been able to organize this event with many research publications submitted by students, academia, and industry experts.

During a time when the entire world is experiencing a challenging time due to economic recessions, and conflicts in Israel, the Red Sea, and Ukraine which directly affect international Maritime trade and Supply Chain Management, Sri Lanka needs to strategize the operations and international business. New business opportunities, and cost optimization approaches are to be developed through research and analysis. This research symposium is a good platform for everyone to discuss new strategies and optimization techniques. CILT SL has taken the initiative to arrange platforms for the industry and academia to meet and share their knowledge and experiences through the research symposium.

My gratitude goes to the: keynote speaker Ms. Subhashini Abeysinghe, Research Director and head of economic research at Verite' Research, and a senior economist at the Ceylon Chamber of Commerce for accepting our invitation, the Chief Guest of the event Dr. Kingsley Bernard, Chairman/CEO of Sri Lanka Export Development Board for gracing this event and adding many values in the symposium, and the main sponsor of the event Hambantota International Port Group for your generosity.

Organizing a gigantic task of this nature would be next to impossible without proper leadership and teamwork. I would like to express my sincere thanks to the Vice President of Education and the head of the education subcommittee Prof. HR Pasindu, the General Chair of the symposium Prof. Renuka Herath, and the Programme Chair Dr. Sabeen Sharic. In addition, I should thank the education subcommittee members: Dr. Mahinda Bandara Yapa, Dr. Priyangani Jayasundara, Dr. Ishani Dias, Mr. Ashan Wickramasinghe, Mr. Shaja Musthaffa, Dr. Varuna Adikariwattage and Ms. Inoka Gunarathne on your commitments in organizing this event. I would like to thank CILTSL Education Coordinator Ms. Dinithi Tharushika, Office Manager Ms. Enoka Weerasooriya, and other secretariat members for their immense commitment and support to materialize today's flourishing pinnacle.

I wish all the success to all authors of this symposium and expect you to produce more advanced research in the future and commercialize it for the betterment of the Logistics and Transport fields.

**Dr. Namali Sirisoma, FCILT**

President

CILT Sri Lanka



## Message of the Vice President (Education) of CILT Sri Lanka

As the Vice President, Education of the Chartered Institute of Logistics and Transport (CILT) Sri Lanka, I am honored to extend a warm welcome to all attendees of the technical program for our Research Symposium on Supply Chain and Logistics

Management, scheduled to take place on the 16th of February 2024.

The inception of this symposium in 2023 was driven by our aim to create a collaborative platform where academia and industry professionals could converge to exchange research findings, share best practices, and engage in meaningful discussions on pressing issues facing the supply chain and logistics sector. Our aim was to foster an environment that would not only facilitate dialogue but also pave the way for the identification and implementation of effective solutions. It is with great pride that we announce the continuation of this symposium into 2024, a testament to the overwhelming success and positive reception of our inaugural event.

We are grateful for the unwavering support of our educational partners, whose encouragement has been instrumental in motivating students to contribute their abstracts to the symposium. Such contributions are vital to the enrichment of our collective knowledge base and the advancement of our field.

A special note of appreciation goes to Ms. Subhashini Abeysinghe, Research Director at Verité Research, for accepting our invitation to be the keynote speaker. Her insights will undoubtedly enrich the discussions at the symposium.

We are confident that the technical sessions at the CILT Research Symposium 2024 will prove to be insightful, fostering discussions among peers and inspiring innovative ideas. We look forward to your participation and to the collaborative efforts that will undoubtedly emerge from this gathering, driving forward the frontiers of supply chain and logistics management.

### **Prof. H. R. Pasindu, CMILT**

Vice President (Education)

CILT Sri Lanka



## Message of the General Chair of the 2nd Research Symposium

On behalf of the organizing committee, I have the distinct honor, as the Chair of the second research symposium of the Chartered Institute of Logistics and Transport, Sri Lanka to extend our sincerest congratulations on the remarkable success of this

year's Research Conference. In the last conference, we were able to witness a dynamic exchange of cutting-edge research, fostered profound intellectual discourse, and established valuable connections that will undoubtedly propel our field forward to this year as well.

The meticulous research, submitted with exceptional clarity and insight by our esteemed presenters, served as the cornerstone of this conference's success. Their dedication to pushing the boundaries of knowledge and exploring uncharted territories ignited countless conversations and sparked inspiration throughout the event. It is with deep gratitude that we acknowledge their invaluable contributions from the Logistics, Transport and Supply Chain industries.

We extend our warm appreciation to our enthusiastic student participants whose eagerness to learn made this conference a success. They are the next generation of research leaders, and their presence instilled in us renewed confidence in the continued advancement of our field.

Finally, we recognize the pivotal role of our esteemed industry partners. Your ongoing collaboration bridges the gap between theoretical exploration and practical application, ensuring that our research translates into real-world solutions with tangible impact. Your partnership is vital to the progress of our field, and we express our sincere gratitude for your unwavering support.

While the formal presentations have drawn to a close, the intellectual journey ignited during this conference will long outlast its duration. The seeds of collaboration, planted through meaningful connections and exchanges, will blossom into groundbreaking research and innovative solutions. Let us nurture these connections, continue to challenge the frontiers of knowledge, and work together to shape a brighter future.

As we turn our sights towards the future, we eagerly anticipate the next chapter in our collaborative journey. Mark your calendars, for the Research Symposium 2025 of the Chartered Institute of Logistics and Transport-Sri Lanka will reconvene in one year, promising an even more dynamic platform for sharing research, fostering dialogue, and building enduring partnerships.

### **Prof. Renuka Herath, CMILT**

General Chair

2<sup>nd</sup> Research Symposium 2024, CILT Sri Lanka



## Message of the Programme Chair of the 2nd Research Symposium

As the Program Chair of the second research symposium on Supply Chain Management organized by the Chartered Institute of Logistics and Transport (CILT) Sri Lanka, I am deeply honored to welcome all participants to this prestigious event.

This symposium serves as a vital platform for scholars, industry professionals, and researchers to come together and exchange invaluable insights, innovative ideas, and groundbreaking research findings in the field of supply chain management. With the theme of “Navigating the Future: Innovations and Sustainability in Supply Chain Management”, we aim to address the pressing challenges and explore promising opportunities facing the industry today.

I am thrilled to announce that we have compiled a diverse and compelling program featuring a wide array of topics such as inventory management and procurement practices to freight transportation, maritime logistics and sustainable mobility. Each session has been carefully crafted to facilitate engaging discussions and foster collaboration among attendees.

I extend my heartfelt gratitude to all the authors whose contributions have enriched our symposium with their research endeavors. Your dedication and expertise are instrumental in advancing the frontier of knowledge in supply chain management. Furthermore, I would like to express my sincere appreciation to the chief guest, keynote speaker, session chairs, reviewers, and organizing committee members for their tireless efforts in ensuring the success of this event. Your commitment and hard work have been indispensable in shaping this symposium into a truly enriching experience for all involved.

As we embark on this journey of exploration and discovery, I encourage all participants to actively engage, exchange ideas, and forge meaningful connections that will drive positive change and innovation in the field of supply chain management. I wish you all a fruitful and inspiring symposium experience.

### **Dr. Sabeen Sharic**

Program Chair

2<sup>nd</sup> Research Symposium 2024, CILT Sri Lanka

Chief Guest of the 2<sup>nd</sup> Research Symposium - 2024



**Dr. Kingsley Bernard**  
Chairman/ CEO of Sri Lanka Export Development Board

Keynote Address of the 2<sup>nd</sup> Research Symposium - 2024



**Ms. Subhashini Abeysinghe**  
Research Director at verité Research

## Organizing Committee

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**Ms. Enoka Weerasooriya**

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## Session 01

# Inventory, Warehouse, and Procurement Management for Sustainable Supply Chains

## Introducing a Warehouse to Trincomalee Harbour

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Trincomalee Harbour, located on the northeast coast of Sri Lanka, is one of the world's finest natural harbours. Its history dates back thousands of years, and it has played a significant role in maritime trade, military strategies, and cultural interactions. Trincomalee Harbour, with its strategic maritime posture, offers a one-of-a-kind opportunity for the creation of a cutting-edge storage facility. This effort seeks to leverage on Trincomalee's geographic advantage by establishing a logistics centre to assist efficient storage, distribution, and transportation of commodities. This research was carried out to introducing a warehouse to Trincomalee Harbour. This will not only meet the rising demand for solid supply chain solutions, but it also positions the region as a significant player in global trade and commerce. Furthermore, we can be an intermediary for Indian imports and exports from this since India is now a rapidly developing country. Not only that, but as time goes by, we will be able to connect to other countries' logistics through India. The need for a warehouse at Trincomalee Harbour arises from its strategic location and the growing demands of global trade. A warehouse facility would serve as a crucial component in supply chain management, facilitating efficient storage, distribution, and transportation of commodities. The methodology for establishing the warehouse can be enhanced by providing a more detailed breakdown of data requirements. This includes comprehensive market research to assess demand, identify potential clients, and understand the competitive landscape. A methodical process is used to introduce a warehouse to Trincomalee Harbour, beginning with a detailed market research to determine demand and identify possible clients. Following that, site selection and infrastructure planning take place, with an emphasis on optimal location and efficient design. Regulatory compliance, which includes getting relevant permissions and implementing standard operating procedures, ensures that standards are followed. Stakeholder engagement and cooperation efforts aim to increase local support and form collaborations with relevant entities. Technology integration focuses on deploying modern technologies for effective warehouse operations, whilst logistics and transportation connection improvements strive to improve the flow of commodities. Environmental sustainability is included into warehouse processes. Not only that, but the strategic location also allows for effective naval power projection and control over crucial sea routes, enabling a military to establish a formidable presence in the Indian Ocean. Its natural deep-water harbour facilitates naval operations, making it an ideal base for maritime forces to project strength and influence in the region. Facilitating by adding infrastructure and superstructure to this so-called harbour, will make things possible. This study will help us in a variety of ways, including more foreign currency, opportunities for employment to Sri Lankans, win foreign investment and attraction, and, in the long run, we can conversion this to a free zone hub.

**Keywords:** *Free zone hub, Logistic, Military strategy, Trincomalee harbour, Warehouse*

# Inventory Management Practices of Pharmaceutical Drugs and Consumables in Hospitals: Case Study Based on Hemas Hospitals

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Inventory management is a key parameter of working capital management. Three major purposes can be identified in inventory management. Meeting the customer expectation is a key objective. Secondly, the inventory cost should be managed, avoiding overstock and out-of-stock situations. Thirdly, operating costs should be managed effectively in order to manage the organization's working capital. It is essential to handle the optimum level of inventory from the right products, from the right quantity to the right quality to an affordable price. Hemas Hospital being a secondary care, multi-specialty hospital, drugs and consumables need to be provided depending on various specialties without compromising customer's needs while minimizing the inventory cost. This case study shows how the inventory management practices improved over the period throughout the hospitals in terms of expiry management practices, ordering practices through collaboration with cross-functional teams, and maintaining the required targets in inventory days related to working capital management. As the methodology, for the identification of short-expiry items in advance, the accuracy of the system-generated report and awareness regarding the process was improved among the unit in charge within the hospital. To improve the ordering efficacy and inventory visibility, a database was created and forums were conducted with the relative cross-functional teams to keep frequent updates regarding ongoing market status. As a result, the expiry management process was streamlined through the practice of using Near-Expiry reports from the Electronic Health Record (EHR) system. Non-value-adding practices such as inefficient manual report workings were eliminated from the workflow. Inventory visibility was established within the cross-functional teams so that the internal stakeholders get updated on the inventory status within both hospitals and the brands' availability. In conclusion, as an indicator of working capital management, inventory days were managed as 70 days. And for FY 23/24 from the total EBIT value, only 0.25% was allowed as the inventory slippage value. The total inventory slippage value was able to maintain below LKR 1.6 Mn. Customer experience was improved concerning the pharmaceutical drugs and consumables availability in both Thalawathugoda and Wattala hospitals. As a future research area, the supply chain team working on developing a scientific predictive model using the data infrastructure so that order efficacy can be improved further in the healthcare supply chain.

**Keywords:** *Inventory Management practices, Expiry Management, Hospitals, Pharmaceutical Drugs*

# Digital Transformation of Government Procurement in Sri Lanka

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Public procurement plays a pivotal role in Sri Lanka's government spending, influencing economic development and public trust. However, the current landscape is plagued by delays, non-compliance, and transparency issues, leading to increased costs and compromised quality. GEP SMART is a unified procurement software platform designed by seasoned industry specialists, especially for procurement professionals. Its goal is to maximise performance and efficiency by streamlining and automating the source-to-pay process. This study delves into the transformative potential of technology, particularly the GEP SMART platform and advancements in e-Procurement, to address these challenges and propel Sri Lanka's public procurement system towards a more efficient, transparent, and cost-effective future. Employing a scenario analysis approach, the study presents three potential outcomes based on the extent of technological adoption. The optimistic scenario envisions widespread GEP SMART adoption and expanded e-Procurement, resulting in streamlined operations, enhanced compliance, and improved procurement outcomes. The moderate scenario anticipates partial GEP SMART adoption and limited e-Procurement progress, yielding incremental improvements. The pessimistic scenario foresees minimal technological adoption, perpetuating existing weaknesses and hindering progress. To counteract these challenges and realize the envisioned transformative potential, a comprehensive five-year roadmap is proposed. The roadmap outlines a phased approach to technological transformation, encompassing the development of a comprehensive procurement regulation, capacity building through e-learning, and the implementation of an end-to-end e-procurement system. The roadmap emphasizes a pilot phase, followed by expanded functionalities, advanced features, and full integration at all government levels. The study underscores the dire consequences of the current issues in public procurement, including increased costs, substandard goods and services, a loss of public trust, and reduced economic growth. To remedy these concerns, the study advocates for technology adoption, encompassing the development of a comprehensive procurement regulation, e-learning for capacity building, and the introduction of an e-Government Procurement (e-GP) system. The study concludes with a set of recommendations to accelerate technological adoption and propel Sri Lanka's public procurement system towards a more efficient, transparent, and cost-effective future. These recommendations include prioritizing e-Procurement adoption, enforcing anti-corruption measures, centralizing procurement, investing in training, and leveraging technologies such as blockchain and data analytics. The study emphasizes the importance of continuous monitoring, stakeholder engagement, and extending reforms to provincial and local levels.

**Keywords:** *Public Procurement, Technology Adoption, E-Procurement, GEP SMART, Sri Lanka*

# Digitalization of Military Logistics: Key Issues in Implementation of E-Procurement in ERP Solution in the Sri Lanka Navy

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Digitalization is radically interfering and changing the fundamental assumption of the way of life and organization of work in a modern society which is becoming more interconnected and more digitalized than ever before. Therefore, it is becoming increasingly significant for any organization to rapidly, efficiently and appropriately plan the digital transformation to achieve flexibility, transparency, efficiency and competitiveness in the market even it is a public or private. In that scenario, it is common even military logistics to adopt digitalization in order to sustain in this virtual connected competitive world. As a result, the Integrated Logistics Management System (ILMS) has been implemented in the process of digitalization roadmap of the Sri Lanka Navy (SLN) in order to enhance the efficiency of supply chain. The ILMS is considered as Enterprise Resource Planning (ERP) solution that offer greater flexibility and management information to the command to exercise effective, efficient and timely control over all forms of resources. Hence, ILMS is an important component of ERP solution in the SLN with the objective of converting Navy in to 'Digitalization'. However, the SLN is still unable achieve full use of digitalization due to inability of implement e-procurement module which able to augment the competence of ERPsystem. Therefore, this study adopts a qualitative approach to understand the underlying barriers in implementing an e-procurement procedure. Qualitative data were collected from purposive sampling technique via conducting semi-structured interviews with 12 respondents. The thematic analysis was employed for analysing data and helped in framing constructs namely; (1) Technological Barriers: System process reediness, Security and privacy of technology, In-house resource constraints (2) Organizational Barriers: resistance to change (olive), management policy effectiveness, fear of losing the grip, Integration with vendors (3) Legal and Environmental Barriers: lack of Legal support, acceptance of Digital signature, SME issues.

**Key words:** *e-procurement, Military logistics, public procurement, ERP, Digitalization*

# Association Between Commute Time for Primary Job and Engagement in Extra Income Generation: Questionnaire Development

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Sri Lanka has been severely affected economically by the COVID-19 pandemic and the economic crisis, which has resulted in inflation and a drop in household incomes. At this junction, households require extra income in addition to their primary jobs. Recognizing the diverse influences of economic, social, cultural, and geographical factors on a community's ability to generate extra income, this research specifically investigates the role of commute time for the primary job. Geographical factors, notably commute time, are hypothesized to be crucial in determining a community's engagement in extra income-generating activities. However, a critical gap exists in the Sri Lankan literature, as no comprehensive questionnaire or survey form has been developed to explore this association in both urban and suburban areas. In the absence of a specific questionnaire in the Sri Lankan literature, this study created a thorough tool. The selection of travel, demographic, and socioeconomic factors for the questionnaire was guided by an informal discussion with commuters in both urban and suburban settings as well as a review of the literature. Gender, age, income, place of work, and engagement in extra income generation were recognized as categorical variables, and categories were established in accordance with relevant criteria. The questionnaire was divided into two sections: trip characteristics and demographic characteristics. Gender, age groups, monthly income levels, place of work, and engagement in extra income generation were demographic characteristics. The section on trip characteristics provided specifics on the commute, including travel duration, waiting time, travel distance, cost, and mode of transport. The entire amount of time spent commuting was to be categorized using statistical binning methods. The purpose of the study is to ascertain whether there is a significant association between commute time for primary jobs and engagement in extra income generation through a crosstabulation analysis employing chi-square tests. The questionnaire was set for testing the null hypothesis that of there was no association between commute time for primary job and engagement in extra income generation, and a substantial discovery would highlight the necessity of actions in transport planning to reduce commute times, possibly by improving public transit and offering flexible work schedules. To validate the study's findings, the questionnaire included insights into inspiring factors for engagement in extra income generation and challenges inhibiting participation. Inspirational elements included proximity to a workplace, living in a business area, continuing family business, entrepreneurial aspirations, and any other relevant reasons. The challenges for avoiding engagement in extra income generation such as higher commute times, risk aversion, lack of financial support, and any other factors were included. This study advances knowledge on the association between commute time for primary jobs and engagement in extra income generation activities in Sri Lankan urban and suburbs. The structured questionnaire created here is a useful instrument for further study in this underexplored area, providing information that can guide actions in transport planning to improve economic stability and community well-being.

**Keywords:** *Commute time, Economic Crisis, Extra Income*

## Session 2

# Effective and Efficient Freight Transportation in Supply Chain Management

# Achieving NDC 03 'Shift Freight to Efficient Modes' in the Sri Lankan Transport Sector by 2030

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The Sri Lankan Transport Sector is actively aligning its objectives with the Nationally Determined Contributions (NDCs) stipulated for the 2021-2030 period, with transportation assuming a pivotal role among the six key sectors. This study evaluates NDC 3 within the transportation sector, focusing on its three sub-components and assessing the need for additional aspects to fortify NDC 3. Emphasizing the shift to efficient freight modes, NDC 03 is a cornerstone for sustainability. This paper critically evaluates NDC 03's sub-components, elucidating challenges and proposing enhancement strategies. The study underscores the complexities and opportunities inherent in advancing sustainable transportation by adopting rail-based freight transportation over road transportation, promote transporting petroleum products by pipeline, and introducing rail-based transport systems with inland container depots. Insights derived from this research furnish valuable guidance for policymakers and stakeholders in navigating the intricate dynamics of freight transportation to achieve Sri Lanka's climate objectives. The attainment of targets delineated in NDC 03 necessitates the establishment of reliability in selected efficient freight transportation modes and resolving previously identified barriers. This underscores the importance of a well-defined framework for practically fulfilling NDC actions. Effective coordination among institutions is paramount to transcend declarative statements and ensure the tangible realization of sustainable transportation objectives, underscoring the crucial role of institutional collaboration in translating NDCs from aspirations into tangible outcomes.

**Keywords:** *Nationally Determined Contributions (NDCs), Freight Transport, Sustainable Transportation*

# Impact of Food Safety Standards on the Global Food Supply Chain

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Food is a necessity for every living being and with the recent development of technology and globalization the food supply chain has widened throughout the globe. Due to the drastic increase in world population, recent changes in climate conditions, and the reduction of cultivable land availability many countries have focused more on importing food produce from other countries where there is excess production capacity. In this study, a comprehensive analysis of the impact of food safety standards on the global food supply chain, with a focus on the regulatory framework established by major recognized standards has been conducted. By examining the complexity of these standards, their application mechanisms, impact on international trade and public health, this research seeks to contribute valuable insights into the dynamics of the global food safety standards and their consequential influence on the food supply chain. Here the Black letter approach is used. The primary sources considered are based on international conventions, domestic laws and case laws. As the secondary sources, the researchers have considered journal articles, books and web articles. The Findings include, due to these recent trends and changes in the global food supply chain, many international and regional organizations as well as local authorities have imposed and are maintaining certain food safety standards which are having a direct impact on the global food supply chain. As key international regulatory bodies FDA (United States Food and Drug Administration), and WTO (World Trade Organization) play a vital part in shaping global food safety standards by facilitating a framework for smooth international trade resolving trade disputes among nations. As recommendations for smooth operation of food supply chain, the researchers wish to provide suggestions for further improvement of food supply chain through strengthening the regulatory framework and international food safety standards which ensures the quality, safety, and efficiency of products and services of the food industry. The International Organization for Standardization (ISO), The British Retail Consortium (BRC), and standards set by the Codex Alimentarius Commission are widely adopted standards in the food industry, while Good Manufacturing Practices (GMPs), Good Hygienic Practices (GHPs), and Hazard Analysis Critical Control Point (HACCP) are considered base principles. These regulations are mainly focused on protecting the consumer while increasing economic viability and maintaining fair trade. Hence through this research, the researchers emphasize the importance of the establishment of widely recognized, robust, and uniform food safety standards which help to promote effective food supply chain international trade while safeguarding public health.

**Keywords:** *Supply chain management, Food safety, Food regulation, International standards, HACCP*

# Exploration of the Problems Faced by Cargo Operations in Sri Lankan Airlines

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In the dynamic realm of Supply Chain and Logistics in the digital age, this research explores into the intricacies faced by Sri Lankan Airlines Cargo Operations, shedding light on critical challenges and proposing strategic solutions for enhancing operational efficiency. The study identifies three pivotal areas: Documentation, Handling Perishable Cargo, and Digitalization. This is a qualitative study following thematic data analysis which uses both primary and secondary sources of data. Data was collected by conducting interviews with the Sri Lankan Cargo Operations Management team where a purposive sampling technique was used. Documentation bottlenecks are discovered, emphasizing excessive paperwork, rigorous evaluations prone to human errors, and communication gaps leading to fines. Perishable cargo handling unveils challenges such as the absence of a cold chain management system, limited freezer areas, and inadequate storage, posing risks to perishable cargo integrity. Digitalization barriers include outdated tracking systems and communication challenges during SLACDP system implementation. The research underscores the importance of addressing these challenges to streamline operations and adapt to the demands of the digital era. Proactive recommendations support for the adoption of e-AWB, electronic signatures, and unified communication platforms to revolutionize documentation processes. Upgrading the automated temperature monitoring system is proposed to ensure real-time data and alerts for perishable cargo. Collaborative efforts with shipping lines and freight forwarders are recommended for a steady supply of containers, overcoming space constraints in the cargo warehouse. In the digitalization domain, a transition to modern, cloud-based tracking systems is advised for real-time visibility. The study concludes by advocating for a comprehensive approach to these challenges, aligning operational strategies with technological advancements. For future research, the study suggests exploring diverse samples, conducting quantitative studies, and extending the focus beyond a single airline or country. The proposed solution involves transitioning to an e-AWB concept, leveraging electronic signatures to prevent forgery, and establishing a unified communication platform with customs integration. The upgrade of temperature monitoring systems, development of new terminals, and collaboration with shipping partners are suggested to address infrastructure limitations. The need for a modern, cloud-based cargo tracking system and automation tools is emphasized, recognizing the current technological constraints in the developing country context.

**Keywords:** *Air cargo operations, Supply chain, Digitalization, Documentation, Perishable cargo.*

# Developing Strategies to Improve the Trucking Sector in Sri Lanka

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The trucking sector plays a vital role in Sri Lanka's economic growth and development, facilitating the transportation of goods and materials across the country. However, the sector suffers several difficulties that impair its effectiveness and general performance. These issues range from a fragmented regulatory framework lacking enforcement mechanisms to challenges with driver retention and a lack of skilled workers. Consequently, the trucking industry struggles to contribute to Sri Lanka's economic potential fully. This study aims to address these concerns by identifying the key challenges faced by the trucking sector and developing a comprehensive framework for improvement. Employing an interpretive research philosophy and a qualitative approach, the research primarily relied on semi-structured interviews conducted with representatives from 11 trucking companies, chosen through snowball sampling. The study identified three major reasons for the trucking sector's issues: Lack of government intervention, Inadequate truck driver training, and Insufficient truck inspections. Beyond these primary findings, the research further identified additional challenges, including Driver shortage, Difficulty in adapting to new strategies, Infrastructure bottlenecks, Regulatory complexity, and Expensiveness of adapting to strategies. This framework has proposed several strategies to develop the efficiency of the trucking sector such as strengthening government involvement, enhancing driver training, improving truck inspections, addressing driver shortage, streamlining regulations, and facilitating collaboration. By implementing these strategies, Sri Lanka's trucking sector can overcome its current challenges and improve its overall performance. This will enhance efficiency, safety, and competitiveness, ultimately contributing to the country's economic growth and prosperity.

**Keywords:** *Trucking Industry, Challenges, Safety Culture, Regulatory Compliance, Driver Training*

# An empirical investigation on the feasibility of the joint venture of current Railway System with Sri Lanka Post to improve freight transportation

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The transportation of goods in Sri Lanka is carried out through both the public sector and the private sector participation. The Sri Lanka Railway System is a public sector stakeholder operating in the freight network. But the current railway system is primarily oriented towards passenger transport. There are major deficiencies in the infrastructure and technology required to freight transport through the railway system and due to such problems. Furthermore, Sri Lanka's railway system does not cover a large area of the island, which has resulted in the collapse of rail freight transport. However, in the field of freight transport, rail transport can be very beneficial in various aspects and should be improved. One such strategy to improve rail freight transportation was to collaborate with another suitable industry. In this research, joint venture with Sri Lanka Post was hypothesized to generate more meaningful effects. This research aims to study the preliminary background study on the feasibility of a joint venture of Sri Lanka Railway with Sri Lanka Post. The questionnaire was developed, and it contained close-ended and open-ended questions on the strength and weaknesses of the proposed joint venture. Interviews were conducted with key personnel from both organizations. A panel discussion was conducted to determine the feasibility of piloting this new project. Through those interviews, many problems in the railway system of Sri Lanka were identified. There, deficiencies in infrastructure, and technology, lack of efficiency, and employee issues were identified as the main problems. Through the held panel discussion, in the face of the acute economic crisis in the country, how to reduce the identified problems in the railway system and the feasibility of implementing the new project were discussed. There, through the analysis of the Main Line(Fort-Badulla), the Kelani-Valley Line(Maradana-Avissawella) and the Coast Line(Fort-Beliatta), focusing on the lack of facilities and shortcomings of rail lines and stations, it was said, Kelani-Valley line is not suitable due to the minimal facilities of the rail track and railway stations. And both the other lines require some level of development in infrastructure but due to the longer distance to be developed and the additional cost required to meet the existing high-powered locomotives/engines for the Main Line, it was decided that the Coast Line has more feasibility for the pilot project here due to the cost effectiveness and ease of development. The findings of the study have significant implications for logistics performance in the country and making the railway system more efficient. It also serves as a foundation for future research and implementation of transport sector partnership strategies.

**Keywords:** *Rail Freight, Postal Service, Joint Venture*

## Session 3

# Maritime Logistics: Challenges and Opportunities

# Determinants of Port Service Quality: A Literature Review

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The maritime industry holds a pivotal role in the global trade landscape, serving as the foundation of international trade. Ports function as crucial nodes in this complex trade system, seamlessly connecting the maritime and terrestrial domains. Port service quality (PSQ) plays a crucial role in the maritime industry, directly impacting customer satisfaction and overall performance. Despite its significance, only a limited number of studies have investigated the concept of PSQ. Consequently, this study seeks to make a valuable contribution in this area. Therefore, this paper aims to provide a comprehensive review of the existing literature on the determinants of PSQ. The study employs a systematic literature review methodology which entails a thorough process of identifying and selecting relevant academic articles. The inclusion criteria for selecting articles encompass studies that delve into factors, criteria, and obstacles related to port service quality, significantly influencing customer satisfaction. Papers considered for review were limited to those presented at conferences or published in peer-reviewed journals between 2000 and 2022. The systematic review involved searching specialized databases including Emerald, ScienceDirect, and Research Gate, using keywords like "Port Service Quality," "Service Quality," and "Customer Satisfaction". This process identified 24 potential articles, with a focus on descriptive information and a categorization of studies into major areas such as service quality in container ports, port competitiveness, and container shipping service quality. After conducting a thorough literature review, determinants of PSQ were identified under six key areas: resources, outcomes, processes, management, image, and social responsibility. Under the resources category, four factors emerged as significant determinants of PSQ: tangible and intangible assets, personnel, financial resources, and technological resources. The outcomes category highlighted two key factors: quality of service and neatness. The processes category encompassed four factors: process quality, automation, staff skills, and smart applications. The management category identified five factors: leadership skills, communication, resource allocation, service quality management, and problem-solving skills. Finally, the image and social responsibility category comprised four factors: image, social responsibility, corporate social responsibility (CSR) programs, and sustainability. While all six categories contribute to the overall PSQ, it is essential to conduct in-depth empirical investigations specifically focused on the Sri Lankan maritime sector to explore the significance and interplay of these determinants, thereby improving customer satisfaction and the overall competitiveness of the industry.

**Keywords:** *Customer Satisfaction, Maritime Industry, Port Service Quality (PSQ), Service Quality*

# Impact of Cost, Time, and Reliability on the Operational Collaboration in Sea Transportation

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This research aims to identify the impact of cost, time, and reliability on the operational collaboration between shippers and carriers in sea transportation. This study has a significant pragmatic and theoretical contribution. The insights of the study help stakeholders such as the first-line managers, directors, freight forwarders, truckers, and industry professionals, to identify potential benefits and opportunities to strengthen the relationship among shippers and carriers to gain a competitive edge by using sea transportation. Due to the rapid growth in the industry and technological movements, researchers have identified that centralized collaboration and the bond between shippers and carriers are comparatively low. Therefore, the study provides valuable insights for strategy development based on cost, time and reliability to enhance the operational collaboration between shippers and carriers. Researchers have taken the philosophical assumption of an objective stance under ontological and epistemological stances. The researchers have incorporated a deductive research approach. Guided by the philosophical assumption researchers have incorporated a quantitative research method. Researchers used the survey technique by distributing 150 questionnaires to apparel industry workers who are working as shippers and carriers. The study sample also included employees who are directly involved in the supply chain operations handling shipper and carrier operational collaboration. The authors conducted the research mainly by using primary sources of data. The main data collection technique was the survey technique. Under the secondary sources of data, the data was gathered through the journal articles, books, company websites, company publications relating to the study. Supported by the theory and literature, the study incorporated cost, time and reliability as independent variables (Lai et al., 2022; Joshi 2023). Loyalty, mutual benefits, availability and ability on providing transparent data were the attributes taken under the dependent variable, operational collaboration between shippers and carriers in the sea transportation (Fan et al.,2020; Lai et al., 2022; Joshi 2023).

The findings of the study emphasize the importance of ensuring effective operational collaboration between shippers and carriers in sea transportation. The study found that cost, time and reliability significantly impacted the shipper and carriers' operational collaboration. The study emphasized that on-time delivery, cost considerations and reliability play a crucial role in shaping the shippers and carriers' relationship influencing the decision-making process for both parties. Effective strategies developed to ensure the right balance between cost and service quality are essential for building strong operational collaboration between shippers and carriers resulting in mutual benefits such as avoiding delays, effective transportation, and seamless delivery. The study is valued to be one step forward as it addresses the current problem within the shipping industry and provides recommendations contributing to enhancing the industry standards.

**Keywords:** *Operations Collaboration, Shippers and Carriers relationship, Strategies on Cost, Time, and Reliability*

# Analysis of International Legal Instruments and Domestic Law in relation to vessel source marine pollution and its importance to achieve the sustainability in supply chain management

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The maritime industry is becoming popular and is a vital component for global transportation network. It is responsible for almost 90% of the global trade by volume as marine transportation has become one of the most prominent modes of transportation all over the world today. Thus, marine industry is responsible for the global economy and this helps all the nations together through an advanced global market. Most of the countries rely on their ports as a significant source of revenue and the activities related to marine transportation are mainly associated with adverse environmental effects. Ship operations are considered to be the primary factor of marine pollution. As the research is in relation to vessel source marine pollution, the objectives of this are to identify the different methods of vessel source marine pollution, to evaluate the effect of such pollution, to elaborate how important to protect the marine biodiversity, to analyze the international legal instruments and local statutes, to identify the loopholes in law and to provide suitable recommendations for them. Here the Black letter approach is used and the primary sources considered are based on international conventions, domestic laws and case laws. As the secondary sources, the researchers have considered journal articles, books and web articles. For the identified gaps, the researchers recommend to include provisions in the constitution of Sri Lanka with reference to marine environment protection, to establish a special team for encountering the emergency situations related to marine environment via the Marine Pollution Prevention Act No.35 of 2008. Also recommend establishing a special court or tribunal related to shipping matters with proper knowledgeable lawyers and judges related to the subject. When considering the Sri Lankan context, Sri Lanka is placed in the middle of the global trade and shipping network. Its strategic location creates a crucial logistics service hub facilitating for distribution of goods and logistics services. Therefore, as a nation, it is needed to take immediate actions to start with mutual agreements with neighbor countries in order to avoid the environmental pollution caused by vessel sources. Hence the researchers emphasize the importance of implementation of preventive measures to protect the marine bio diversity from vessel source marine pollution as shipping in the era of digitalization helps to navigate the future innovations while reaching the sustainability in supply chain management.

**Key words:** *International conventions, Supply chain, Sustainability, Marine pollution, Maritime industry*

# The Effects of Internet of Things on Supply Chain Integrational Practices and Sustainability Performance.

## (Reference to Sri Lanka Tea Industry)

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The traditional and typical supply chains are currently facing more challenges and risks as low effectivity and efficiency in production manufacturing process, lack of coordination and communication process between the supply chain actors. Along with industrial revolution 4.0 in the globalization context, new technologies were introduced and implemented. With the digitalization global supply chain techniques are changed to the SMART effective concept. Internet of Things (IoT) is one of the famous technologies is adopted and implemented to maintain the integrational practices and achieve the sustainability performance. This study developed with the Sri Lanka tea supply chain context, aimed to identify the effects of internet of things on supply chain integrational practices and sustainability performances. The Sri Lanka tea supply chain entire process is interconnected with IoT as wireless sensor network, radio frequency identification (RFID), cloud computing and middleware applications. At the beginning of this study the small pilot study was done to identify the research gap while adopting and implementing the IoT. Through the previous scholars and textbooks developed the conceptual framework and structured questionnaire. The study generates insights population from the key stakeholders of Sri Lanka tea chain as manufacturers, distributors, retailers and logistics partners. With this big population area, the sample of the study was selected by simple random sampling technique. Over the 300 structured questionnaires were emailed to the tea supply chain actors. There were only 143 responses collected and 121 responses only acceptable. Collected data were analyzed through Partial Square Structural Equation Model with Smart PLS4 analytical tool validity with reliability. The study tested with five hypotheses. The findings are the implementing and adapting the digital supply chain technologies in the Sri Lankan tea supply chain industry, like internet of things technologies are very important to compete and overcome the supply chain logistics processes effectively and efficiently. The benefits of the internet of things significantly relationship with the supplier integration, customer integration and internally integration within the organization towards to achieve the sustainability performance. More over the effects IoT and supply chain integrational practices has the positive significant relationship and between the effects of IoT and Sustainability Performance also has the positive relationship. The limitations are most of the tea supply chain participants don't know the aware of supply chain digitalization process, lack of finance and lack of training to implement and adopt the IoT techniques.

**Keywords:** *Internet of Things (IoT), Supply Chain Integrational Practices, Sustainable Performance*

# Optimizing Patient Discharge Processes in Healthcare: A Case Study of Lean Methodology Implementation at Hemas Hospitals

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Efficient patient discharge is a critical aspect of healthcare delivery, impacting both patient satisfaction and overall hospital operations. This abstract outlines a comprehensive approach undertaken by Hemas Hospitals and Laboratory Chain, a leading healthcare provider in Sri Lanka, to enhance their patient discharge process through the application of lean methodology. The patient discharge time, representing the moment when a patient is officially released from the healthcare facility, is a multifaceted event influenced by various factors such as Final diagnostics, billing completion, discharge medication, and administrative processes. Recognizing the need for improvement, Hemas Hospitals initiated a project in response to a surge in unsatisfactory patient feedback during the year 2022. The average patient discharge Turnaround Time (TAT) was identified as 112 minutes, with a maximum recorded time of 120 minutes, prompting a detailed examination of the existing process. Applying the Plan-Do-Check-Act (PDCA) cycle, a dedicated team was formed based on internal customer-supplier relationships to address the root causes of the problem. The team conducted a thorough Gemba walk to observe and map the current patient discharge process. Task-based timing analysis revealed that 38% of the time was allocated to completing diagnostic cards, 25% to the billing process, and 21% to medication ordering and receiving points. The comprehensive action plan focused on eliminating non-value adding activities and deviations in the discharge process. Over the course of three months, significant improvements were achieved. The overall cash patient discharge time for the Araliya ward was reduced to below 90 minutes, marking a 26% improvement. Instances of discharge times below 90 minutes increased to 70%, while instances above 120 minutes decreased from 50% to 29%. Tangible benefits of the project included increased hospital profitability through higher admissions and room turnover. Intangible benefits encompassed improved employee morale, reduced confusion, and enhanced customer satisfaction, as evidenced by positive customer feedback supporting the Net Promoter Score (NPS) improvement. The standardization of the optimized discharge process was ensured through training sessions for wards staff, the creation of Standard Operating Procedures (SOPs), additional audits, and regular progress review meetings. The success of the initiative in the Araliya ward paved the way for horizontal deployment, with plans to extend the improvements to other wards within Hemas Hospitals and eventually to WTL hospitals. This case study exemplifies the successful application of lean methodology in healthcare, showcasing how collaborative efforts and systematic improvements can lead to tangible and intangible benefits, ultimately aligning with Hemas Hospitals' vision of providing affordable, seamless healthcare solutions to positively impact millions of lives by 2030.

**Keywords:** *Discharge Time, Hospitals, Lean Management, Sri Lanka*

## Session 4

# Mobility Landscape for Sustainable Transportation

## Vulnerable Road User Crashes in Sri Lanka

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Vulnerable road users (VRUs), encompassing pedestrians, cyclists, motorcyclists, and three-wheeler users, who constitute a significant share of global traffic fatalities, particularly in low- to middle-income countries. According to the World Health Organization (WHO), annual road crashes claim the lives of over 1.3 million individuals, with 93% of these fatalities occurring in low- and low-middle-income countries. The study's objective is to conduct a comprehensive analysis of VRU trends, identifying patterns within road crashes and fundamental contributing factors using crash data from VRUs between 2010 and 2020. Data were analysed, with the exclusion of 2020 data due to the influence of COVID-19 on travel behaviour.

To analyse crashes, the study uses Sri Lanka police road crash databases from 2010 to 2020, excluding damage-only crashes due to underreporting and inconsistencies in data accuracy. This study employed Pearson Correlation and Granger Causality Tests to examine the relationship between economic and social factors. The significance of trends was evaluated using the ANOVA Test. To ensure trend accuracy, Mann-Kendall and Innovative Trend Analysis methods were employed for further analysis and comparison. Findings reveal that VRU-related fatalities accounted for 87% of total road crash fatalities in Sri Lanka from 2010 to 2020. On average, there were 6.57 VRU fatalities per day, resulting in an average death rate of 11.38 per 100,000 population per year between 2010 and 2019. The analysis also highlights a strong correlation between new motorcycle registrations and VRU involvement in road crashes. From 2010 to 2019, VRU involvement, VRU fatalities, VRU motorcycle crashes, motorcycle fatalities, three-wheeler crashes, three-wheeler fatalities, pedestrian crashes, and pedestrian fatalities exhibited a statistically significant increasing trend. Conversely, bicycle crashes displayed a statistically significant decreasing trend. While pedestrian crashes were statistically significant, but they did not demonstrate a trend.

The study highlights concerning trends in VRU crashes in Sri Lanka, emphasizing the need for prompt, targeted interventions. The notably high fatality rates, especially among motorcyclists, underscore the urgency of implementing immediate road safety measures. Correlations with events like the Easter attack and Google Mobility to Workplaces indicate the intricate nature of contributing factors. The findings underscore the necessity for swift action to address the rising VRU fatalities, aligning road safety strategies with Sustainable Development Goals (SDGs).

**Keywords:** *Vulnerable Road Users, Road Crash Data, Trend Analysis*

# Evaluating The Viability of Using Electric Vehicles (EV) in Sri Lankan Freight Transport Industry: A Feasibility Study

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Electric vehicles (EV) are often considered as a potential solution to address the challenge of sustainable freight transport. The purchase cost, high maintenance cost, lack of logistics infrastructure in the country and lack of data-driven pioneering studies for reference to evaluate the viability of these vehicles are commonly viewed as barriers to their adoption.

In this context, we have selected Advantis Projects and Engineering, a leading provider of container freight transport services, as the primary resource company for conducting a comprehensive feasibility study. The feasibility study evaluates various key metrics in order to assess and conclude the viability of electric vehicles in comparison to traditional conventional vehicle (CV) fleets within the dynamic landscape of the Sri Lankan commercial transport industry. The associated data are collected mainly using past records of the company, publications of the vehicle manufacturers and related other research and articles.

This study encompasses three key impact indicators of metrics. First, it delves into Financial Factors, which involve the calculation of three vital metrics: Total Cost of Ownership (TCO), Return on Investment (ROI), and Cost of Operation. The findings from these metrics lay the groundwork for the recommendations on the economic feasibility and long-term financial benefits associated with the transition and use of electric vehicles.

Secondly, Operational Factors are examined, which include efficiency, utilization, and energy consumption metrics. This analysis aims to gauge the day-to-day performance and reliability of electric vehicles in the context of Sri Lankan commercial transport operations. Lastly, the study addresses Environmental Factors, wherein assessments are conducted to measure the carbon footprint, waste generation, and Lifecycle Assessment (LCA). These evaluations provide valuable insights into the environmental impact and sustainability implications of adopting electric vehicles within the industry.

Initial findings suggest that economic and operational factors currently favour the use of conventional vehicles due to infrastructure constraints and operational efficiency concerns. However, the research recognizes the ongoing worldwide shift toward electric mobility. Factors influencing this trend include sustainability initiatives like UNSDG (United Nations Sustainable Development Goals), policies implemented by the Sri Lankan Government, and corporate-level strategies such as "HELIOS," introduced by the parent company, Hayleys Advantis. These factors collectively promote and encourages the adoption of electric vehicles.

**Keywords:** *Carbon footprint, Conventional Vehicles (CV), Efficiency, Electric vehicles (EV), Total Cost of Ownership (TCO)*

# Prioritizing Emission Reduction Measures for Complying with Carbon Offsetting and Reporting Scheme for International Aviation (CORSIA) - Case Study: Airline Operators in Sri Lanka

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The aviation industry is grappling with significant challenges related to Carbon Dioxide (CO<sub>2</sub>) emissions, a major contributor to climate change. Initiatives such as the exploration of sustainable aviation fuels, regulatory measures like CORSIA, and advancements in aircraft technology are underway to mitigate the industry's environmental impact. Currently, airline operators in Sri Lanka do not have considered the measures to be taken to comply with CORSIA mandatory offsetting requirements. This study was conducted to review the current emission reduction or abatement strategies and prioritize them for potential application with airline operators in Sri Lanka to align with CORSIA standards. This research focuses on the implications of CORSIA for airline operators in Sri Lanka, as a member state obligated to comply with CORSIA's CO<sub>2</sub> emission reduction requirements. The CORSIA scheme, initiated in 2020, employs a market-based approach to achieve carbon-neutral growth. Sri Lanka, although not a voluntary participant, adheres to CORSIA's Monitoring, Reporting, and Verification (MRV) guidelines. As of the 39th ICAO assembly, CORSIA is scheduled to be implemented across all member states in three phases: pilot phase (2021-2023), phase 1 (2024-2026), and phase 2 (2027-2035). Thus, Sri Lanka will be obligated to comply with CORSIA from 2027 mandatorily. A systematic literature review was conducted to focus on determining key impacts of CO<sub>2</sub> reduction measures on airline business models and their key attributes. Then, the study developed a list of available CO<sub>2</sub> abatement measures from the reviewed industry articles and research publications and categorized them based on key attributes. Furthermore, the study defined a set of criteria for evaluating the applicability of abatement measures. Finally, a two-level decision hierarchy was developed to evaluate the relative weight of a set of abatement measures based on the evaluation criteria established in the previous step. The analysis was performed using a multicriteria decision making model (MCDM) such as the Analytical Hierarchy Process (AHP). Data for the analysis was collected using a Delphi survey technique. Key finding of the research is cost-efficient abatement measures based on defined criteria. The paper concludes by highlighting the necessity for airline operators in Sri Lanka to navigate the CORSIA framework, considering emission reduction measures followed by a defined set of criteria to comply with mandatory requirements from 2027. Any airline operator can use the findings of the study with a similar capacity described in the study to meet the mandatory requirements of CORSIA. This study contributes to the development of sustainable practices within the global aviation industry, valuable insights for policymakers, industry stakeholders, and researchers, offering a roadmap for sustainable practices in the aviation sector in the face of global climate change challenges.

**Keywords:** *Aviation, CORSIA, CO<sub>2</sub> Emissions, Emission Reduction Measures, Sustainability*

# Queue Modelling & Development of a Forecasting Tool for Passenger Delays at Airport Check-In

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Efficient airport operations are integral to ensuring passenger satisfaction and optimizing overall efficiency of an airport. Current knowledge in queue modelling at airport terminal servers is limited to using either simulation or analytical queuing models. These methods are more often applicable to planning and designing of the terminal systems. However, above techniques have critical limitations when it comes to operational level applications such as real time delay prediction. Simulation methods while more accurate and less dependent on steady state assumptions are very time and labour intensive to generate. Thus, difficult to be utilised under operational conditions by airport employees. Analytical queuing models rely heavily on assumptions regarding steady state conditions. Daily demand variation in an airport does not allow to achieve steady state conditions. Therefore, an important research gap exists for developing a methodology to estimate passenger delay at airport servers for operational purposes such as monitoring delay in daily operations, allocating staff and determining variation in capacity levels on an hourly basis. This research is dedicated for the development and application of a user-friendly predictive tool for airport operators, aimed at anticipating and mitigating passenger delays specifically at airport check-in counters. The study proposes to use machine learning techniques to relate a multitude of causal factors to variation in passenger queuing and delay. Airport operations are inherently complex, influenced by numerous interconnected variables, ranging from passenger behaviour and preferences to operational constraints and environmental factors. By advocating for a comprehensive model that considers this extensive array of factors, the study provides an involved representation of check-in dynamics, steering clear of the oversimplified assumptions made by traditional queuing models. Handling variability, providing real-time adaptability, and considering a wide range of factors, this research aims to provide a more accurate representation of check-in dynamics, there forth enabling robust decision-making. Data collection involves a simulation modelling approach. A comprehensive simulation model using discrete event simulation approach will be developed to generate the required data sample. The tool developed in this study empowers airport authorities to proactively manage passenger flow, allocate resources efficiently, and ultimately enhance operational efficiency. Results indicate a significant improvement in predicting and addressing passenger delays at check-in counters. The study concludes with application and validation of the tool at Bandaranaike International Airport demonstrating its effectiveness in a real-world operational environment and providing transferable insights applicable across the aviation industry, emphasizing the potential impact of the proposed approach on overall airport operations.

**Keywords:** *Optimization, Airport check-in, Discrete Event Simulation, Regression Model, Random Forest algorithm*

# Evaluation of the Resources Mobilization and the Performance of the Grassroots Groups Involved in Humanitarian Logistics Activities in Sri Lanka

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Disasters are becoming more often all over the world posing a hazard to human life. International humanitarian groups are performing a remarkable service by partnering with a wide range of stakeholders to preserve the lives of victims and transport them to safe locations. The problems that assistance groups and individuals encounter are numerous. Only the military and a few well-known NGOs have acquired professional training in humanitarian logistical operations. The performance of grassroots groups is hampered by a lack of expertise and training in the field of humanitarian logistics. The conceptual framework of the study has been developed by utilizing Resource Mobilization (Human resources, Tools and Equipment, Finance, Procurement, and Warehouse facility) as the independent variable and the performance of grassroots groups in Kaluthara district who actively participated in the flood disasters as the dependent variable. In this study, the sample consisted of 286 registered grassroots groups in the Kaluthara district, and the Simple random sampling approach was utilized to select the sample. The reliability and validity of the data collection tool were tested using inter-rater reliability and face validity. The collected data were screened for detecting missing values, extreme values, and unengaged respondents before the analysis. Descriptive statistics tools and correlation analysis were utilized to analyze the collected data. The results of the analysis show that the variable Human Resource has a significantly moderate relationship with the performance of grassroots groups while the variables Tools and Equipment, Finance, Procurement, and Warehouse facility do not have a significant relationship with the performance of grassroots groups in the Kaluthara district in Sri Lanka.

**Keywords:** *Humanitarian Logistics, Logistics Management, Grassroots groups, Resources mobilization*

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Community development

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