

UNIVERSITI TEKNOLOGI MARA

**IMPLEMENTATION OF
SUSTAINABLE URBAN
TRANSPORT INDEX (iSUTI) IN AIR
FREIGHT SYSTEM: A CASE STUDY
IN MALAYSIA**

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Thesis submitted in fulfilment
of the requirements for the degree of
Master of Science
(Transport and Logistics)

Malaysia Institute of Transport

January 2024

ABSTRACT

This dissertation delves into enhancing sustainability in the air freight sector, introducing and assessing a new measurement tool called the Integrated Sustainability Urban Transport Index (iSUTI). The study is structured around three main objectives: identifying critical sustainability factors for air freight services, developing the iSUTI framework, and testing its effectiveness with real-world data from Malaysian air freight companies. Initially, the research focuses on pinpointing key sustainability indicators specific to air freight operations. From an existing sustainability framework, nine relevant factors were chosen and adapted to suit the air freight context. These factors encompass a wide range of elements, such as greenhouse gas emissions, service reliability, cost, and overall accessibility. This comprehensive selection ensures a holistic evaluation of an air freight service's sustainability, covering environmental, economic, and social dimensions. The next phase introduces the iSUTI, an innovative tool crafted to aggregate these diverse indicators into a single, encompassing sustainability score. This approach offers a multi-dimensional perspective, shedding light on various aspects of sustainability within air freight services. Applying the iSUTI to a case study, Company XX showcased a notable improvement in their sustainability performance over three years. Their iSUTI scores exhibited a positive trend: 52.78 in 2019, 56.83 in 2020, and a significant leap to 74.58 in 2021. These escalating scores reflect Company XX's dedicated efforts towards sustainable practices, highlighting their advancements in fuel efficiency and environmental impact mitigation. The final part of the thesis involved comparing the iSUTI framework with other existing sustainability measurement methods. This comparison aimed to validate the iSUTI's effectiveness and reliability. The results affirmed that the iSUTI is a robust tool, capable of accurately reflecting sustainability trends in the air freight sector. It offers a clear, comprehensive picture of a company's sustainability performance, proving invaluable for businesses and consumers who prioritize environmental and social responsibility. In summary, this research successfully meets its objectives and provides a significant contribution towards fostering sustainable development in the air freight industry.

ACKNOWLEDGEMENT

I extend my deepest gratitude to my esteemed advisor, Associate Professor Ts. Dr. S. Sarifah Radiah binti Shariff, whose unwavering support and guidance have been the cornerstone of my master's journey. Her profound expertise, coupled with remarkable patience, has proven to be invaluable, playing a pivotal role in the success and fruition of this thesis. I am truly fortunate to have had her as a mentor, and her mentorship has left an indelible mark on both my academic and personal growth.

I am also indebted to the Malaysia Institute of Transport (MITRANS) at Universiti Teknologi MARA (UiTM) Shah Alam for extending to me the opportunity to conduct my research. Their commitment to fostering a conducive research environment and their generous provision of resources have significantly contributed to the quality and depth of my work.

My heartfelt appreciation goes out to my colleagues from Agensi Pengangkutan Awam Darat (APAD) Kuala Lumpur, whose collaboration was helpful during the data collection phase with a few leading logistics companies in Malaysia. Their expertise in the transportation industry and willingness to share insights and suggestions greatly enhanced the robustness of my research.

In the broader circle of my academic and personal life, I wish to express my profound thanks to my family and friends. Their unwavering love, support, and understanding have been the bedrock of my resilience throughout this challenging journey. Their encouragement and motivation were constant sources of inspiration, without which this thesis would not have been possible.

I would also like to acknowledge the broader academic community and peers who, directly or indirectly, contributed to my intellectual development. The exchange of ideas and diverse perspectives within this community has been enriching and has undoubtedly shaped the trajectory of my research.

In conclusion, my heartfelt appreciation extends to all those who have been part of this transformative journey. Their collective contributions, be they in mentorship, collaboration, or emotional support, have left an indelible mark on my academic and personal growth. I am profoundly grateful for the privilege of having such a supportive network and am excited about the continued journey ahead.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

International market is currently more accessible than ever before with the help of air freight services. Air freight or air cargo defined as the shipment of goods through an air carriers whereby it is the most significant when it comes to moving express shipment around the globe. Similar as passenger airlines, air freight flies in the same gateways. Air cargo is often an integral part of intermodal transportation systems. Intermodal transportation is a combination of two or more modes of transport with a purpose to move cargos from a place in a country to another place in a different country. Though sea freight service can offer the same purpose but in terms of express delivery in quick and organized system, airplanes are preferable.

According to section six (6) of the Malaysian Aviation Commission Act 2015 (Act 771) first paragraph where “No person shall undertake to carry by air or use any aircraft for the carriage of passengers, mail or cargo for hire or reward on a scheduled journey between two or more places of which at least one place is in Malaysia except under and in accordance with an air service licence granted by the Commission” (Malaysia Aviation Commission Act, 2015).

Furthermore, mentioned under paragraph 17 (1)(a)(i) the commission shall have the function to regulate economic matters relating to the civil aviation industry including to improve connectivity, both globally and locally, so as to promote economic ties, integration and growth, and trade, investment and tourism (Malaysia Aviation Commission Act, 2015). Thus, existent of air cargo trade agreements grant permit for air transport industry to ship globally through air be the game changer in the intermodal transportation chain business where logistics companies can legally provide seamless door-to-door service with the cross-border boundaries.

Typically, cargo space in commercial flights is in aircraft’s lower deck where the baggage and cargos are stored and the amount of cargo space is dependent on the size of the aircraft. Other type of aircraft is cargo-only plane which specifically was