iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** III **Month of publication:** March 2026

DOI: https://doi.org/10.22214/ijraset.2026.78671

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue III Mar 2026- Available at www.ijraset.com

Door to Door Shipping

Kadam Mayank Popat[1], Sonune Ganesh Rameshwar[2], Suroshe Karan Kaluram[3], Sakore Karan anil[4], Shaikh Minaj Dilawar[5]
Samarth Polytechnic, Belhe, Pune [Maharashtra State Board Of Education, Mumbai]

Abstract: ***Intermodal and multimodal door-to-door journeys refer to the usage of various transport modes (air, rail, bus, road or maritime) by the traveler to complete a single journey. The main difference between these two approaches is that multimodal transport is executed under a single transport contract (a single ticket) between the passenger, on the one hand, and transport operators, on the other hand. The benefits of this type of service are reflected in the potential to save time and money. Such systems would make the transport sector greener and more sustainable, promote growth and reduce carbon emissions. The purpose of this paper is to define the concept of an air passenger multimodal transport system, identify factors and challenges that determine such a system's development within Europe and to provide recommendations and directions for future research. The research carried out so far has indicated that market segmentation and transport system characteristics, as well as economic, social and political factors, have direct impacts on system development. This paper provides the basis for introducing single ticket, timetable synchronization and data sharing services, as well as the need to update the related regulations in order to move towards air passenger multimodality in both research and practice.***
Keywords: multimodal air passenger transport; seamless journey; European transport market; door-to-door travel; data sharing

I. INTRODUCTION

Door-to-door transport is a logistics and transportation service in which goods or passengers are picked up directly from the sender's location and delivered to the final destination without requiring the customer to visit a transport terminal or warehouse. This service simplifies the transportation process by providing complete pickup and delivery solutions from the origin to the destination.

In modern transportation and logistics systems, door-to-door services play an important role in improving efficiency, convenience, and customer satisfaction. With the rapid growth of e-commerce, urbanization, and global trade, the demand for reliable and fast transportation services has significantly increased. Door-to-door transport helps reduce the complexity of handling goods by integrating different transportation modes such as road, rail, air, or sea into a single service.

This transportation model is widely used in courier services, parcel delivery, ride-sharing services, and logistics companies. It eliminates the need for customers to arrange multiple transport methods and ensures that goods are delivered safely and on time. The system also reduces transit delays, handling costs, and the risk of damage during multiple transfers.

Furthermore, advancements in digital technologies such as GPS tracking, mobile applications, and automated logistics management systems have enhanced the effectiveness of door-to-door transport services. These technologies enable real-time tracking, route optimization, and improved communication between service providers and customers.

II. LITERATURE REVIEW

1) *Study by John Olsson, Daniel Hellström & Henrik Pålsson (2019)*
   - Title: Framework of Last Mile Logistics Research
   - Contribution:
     - Reviewed 155 research papers on last-mile logistics
     - Identified major themes:
       - Technology innovations
       - Supply chain structure
       - Delivery performance
       - Sustainability
   - Key Finding:
     Last-mile delivery accounts for 13% to 75% of total logistics cost, making it a critical research area.

©IJRASET: All Rights are Reserved

2) *Study by Si Liu & Elkafi Hassini (2023–2024)*
- Title: Freight Last Mile Delivery: A Literature Review
- Contribution:
  - Reviewed literature from 2010–2021
  - Classified research into:
    - Commercial logistics
    - Humanitarian logistics
    - Emerging technologies
- Key Finding:
  Door-to-door delivery is evolving due to AI, automation, and digital tracking systems.

3) *Study by Nima Pourmohammadreza, Mohammad R. Akbari Jokar & Tom Van Woensel (2025)*
- Title: Last-Mile Logistics with Alternative Delivery Locations
- Contribution:
  - Analyzed 257 research articles
  - Compared door-to-door delivery with alternatives like:
    - Parcel lockers
    - Pickup points
- Key Finding:
  Alternative delivery systems can reduce cost and environmental impact, but door-to-door remains preferred for convenience.

III. METHODOLOGY

The methodology of the Door-to-Door Transport system describes the systematic process used to design, develop, and implement the transportation service that allows goods or passengers to be picked up from the sender's location and delivered directly to the destination. The methodology focuses on efficient route planning, user interaction, real-time tracking, and delivery management.

The system begins with user registration and request submission. Customers first register on the platform by providing basic details such as name, contact information, and location. After successful registration, users can log in to the system and place a transportation request by entering pickup location, destination address, type of goods or service required, and preferred delivery time. Once the request is submitted, the system processes the information and identifies the nearest available transport service provider or vehicle. This is done using location-based technologies such as GPS and digital mapping services. The system selects the most suitable vehicle based on distance, availability, and delivery requirements. The next stage involves route planning and scheduling. The system calculates the optimal route between the pickup and delivery locations to minimize travel time, transportation cost, and fuel consumption. Advanced routing algorithms and navigation systems help drivers follow the most efficient path.

IV. ARCHITECTURE DIAGRAM

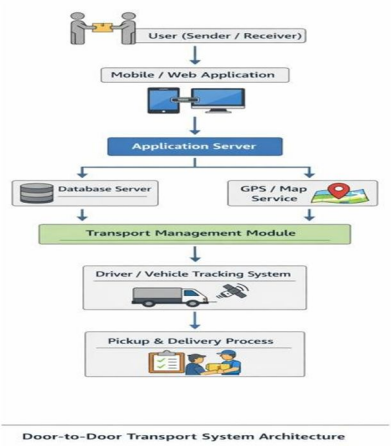


Fig:- architecture of Door to Door Shipping

1) User (Sender/Receiver): Customers who request transport service for sending or receiving goods.
2) User (Sender/Receiver): Customers who request transport service for sending or receiving goods.
3) Mobile/Web Application: Interface where users register, request pickup, track delivery, and receive notifications.
4) Application Server: Processes user requests, manages transport operations, and connects different modules.
5) Database Server: Stores user details, transport requests, driver information, and delivery records.
6) GPS/Map Service: Provides location tracking, route optimization, and navigation support.
7) Transport Management Module: Assigns vehicles, manages scheduling, and coordinates delivery operations.
8) Driver/Vehicle Tracking System: Tracks vehicle movement and delivery status in real time.
9) Pickup & Delivery Process: Final stage where goods are collected from the sender and delivered to the receiver. Interface where users register, request pickup, track delivery, and receive notifications.

V. RESULT

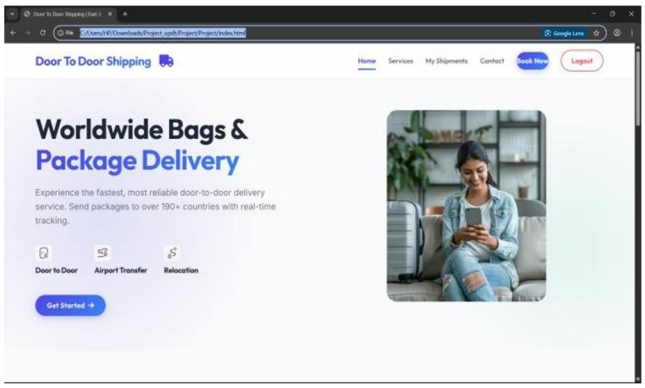


FIG:-Home Page

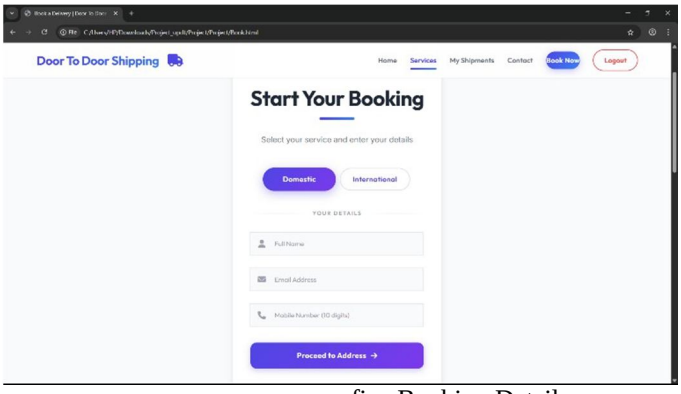


fig:-Booking Details

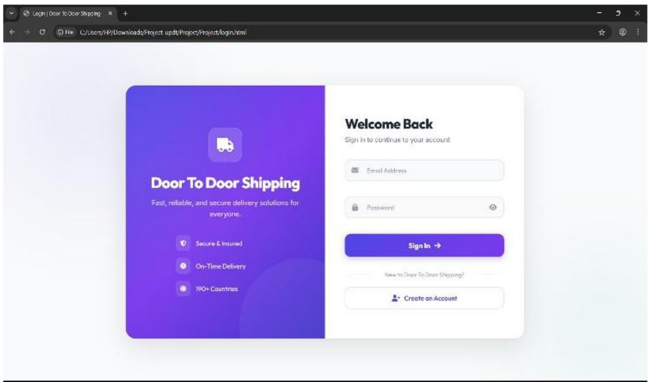


Fig:- Sig in Page

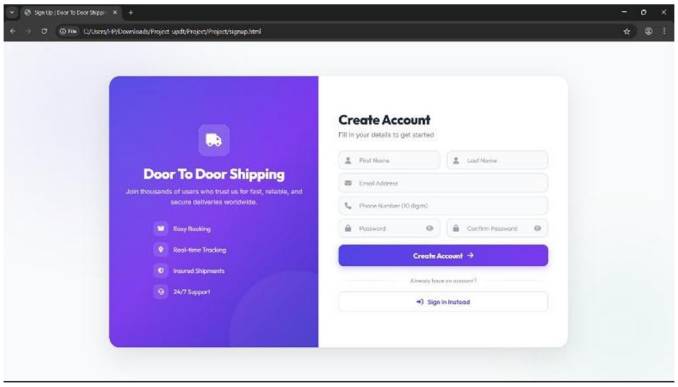


Fig:- Create Account Panel

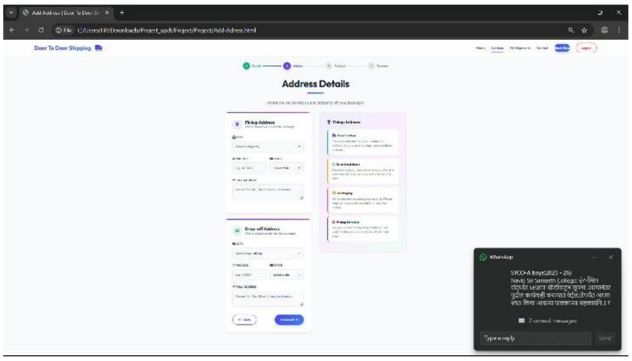


Fig:- Address details

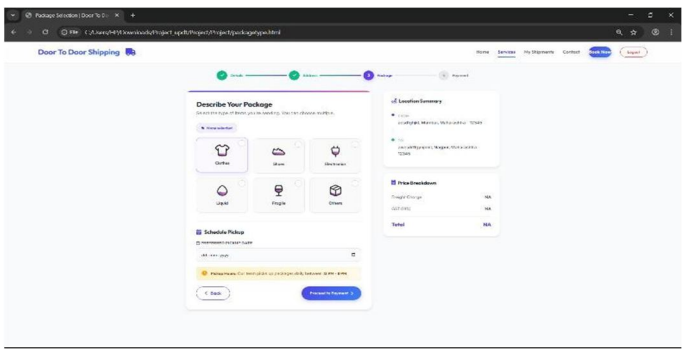


Fig:-order Track detail

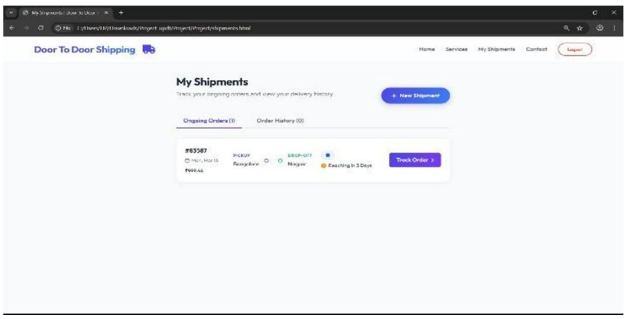


Fig.Shipment Detail

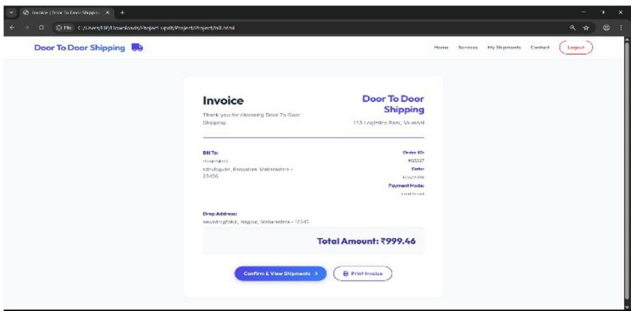


Fig.Billing Detail

VI. FUTURE ENHANCEMENT

1) AI & ML Integration: Optimize routes, delivery times, and vehicle allocation.
2) Autonomous Vehicles & Drones: Faster last-mile delivery with reduced human dependency.
3) IoT & Real-Time Tracking: Monitor vehicle and package conditions for better transparency.
4) Eco-Friendly Transport: Use electric/hybrid vehicles to reduce emissions and costs.
5) Blockchain Security: Ensure safe and transparent transactions.
6) App Improvements: Predictive scheduling, chatbots, and multiple payment options.
7) Advanced Analytics: Monitor performance and optimize fleet management.
8) Hybrid Delivery Models: Combine door-to-door with pickup points to save costs.

VII. CONCLUSION

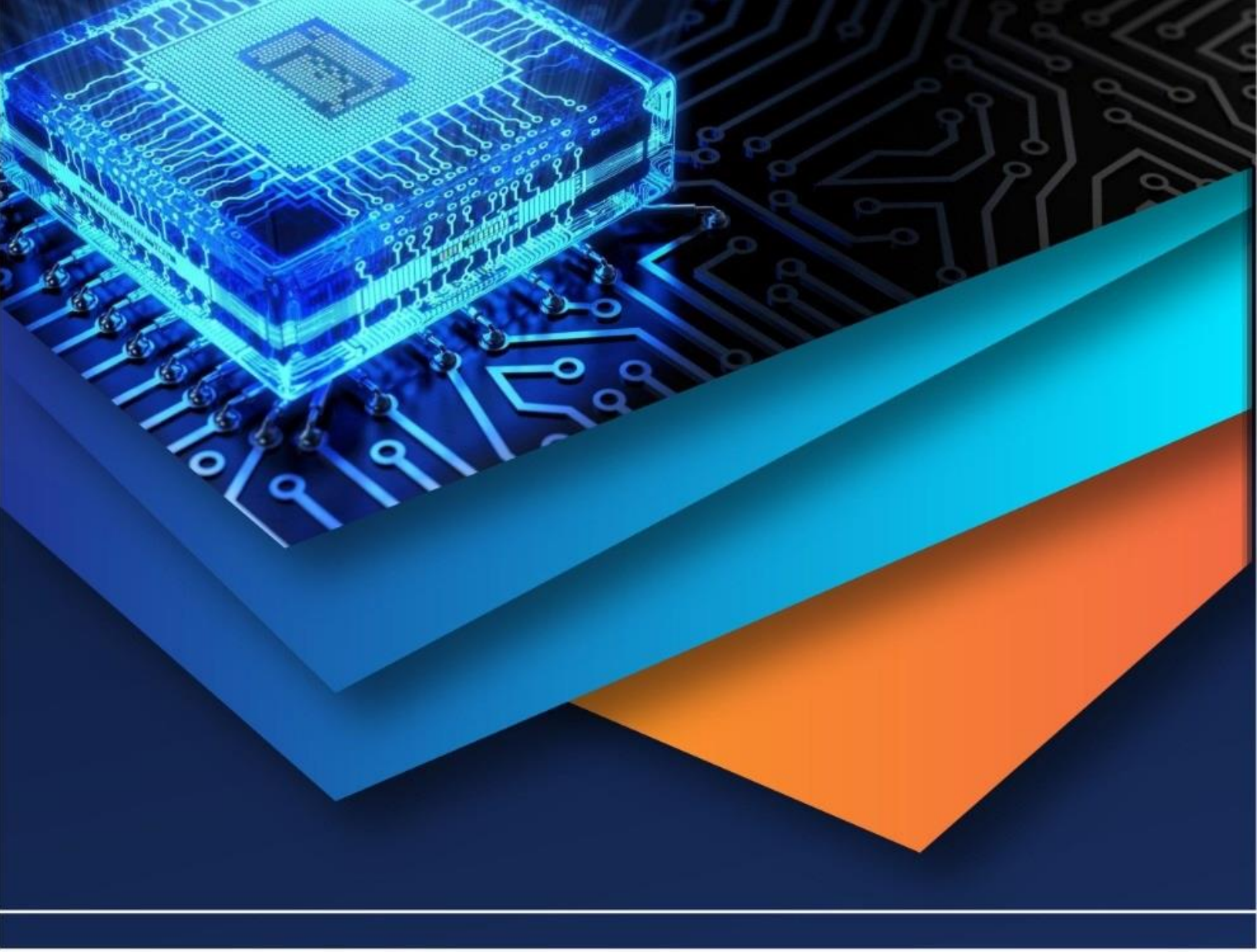
The Door-to-Door Transport system is a modern and efficient solution that simplifies the movement of goods and passengers by providing direct pickup and delivery from the sender to the recipient. It improves convenience, reduces handling costs, and ensures timely and secure transportation.

With the integration of technologies such as GPS tracking, mobile applications, and route optimization, the system offers real-time visibility, enhanced customer satisfaction, and streamlined logistics operations. Future enhancements, including AI, autonomous vehicles, IoT monitoring, and eco-friendly practices, will further increase efficiency, reduce environmental impact, and make the service more reliable and sustainable.

Overall, door-to-door transport represents a vital advancement in logistics and urban mobility, meeting the growing demands of modern commerce and daily life.

REFERESNCES

[1] Christopher, M. (2016). Logistics & Supply Chain Management (5th Edition). Pearson Education.
[2] Rodrigue, J. P., Comtois, C., & Slack, B. (2020). The Geography of Transport Systems (5th Edition). Routledge.
[3] Chopra, S., & Meindl, P. (2021). Supply Chain Management: Strategy, Planning, and Operation (8th Edition). Pearson.
[4] Boysen, N., de Koster, R., & Weidinger, F. (2019). "Warehousing and Distribution in E-commerce: Concepts, Models, and Optimization." European Journal of Operational Research, 293(3), 401–416.
[5] Ghiani, G., Laporte, G., & Musmanno, R. (2013). Introduction to Logistics Systems Management (2nd Edition). Wiley.
[6] Savelsbergh, M., & Van Woensel, T. (2016). "50th Anniversary Article: City Logistics: Challenges and Opportunities." Transportation Science, 50(2), 579–590.
[7] Taniguchi, E., Thompson, R., Yamada, T., & van Duin, R. (2016). City Logistics: Mapping the Future. CRC Press.
[8] Hübner, A., Kuhn, H., & Wollenburg, J. (2016). "Last Mile Logistics in Omni-channel Retailing." Business Research, 9(1), 255–296.
[9] Arslan, O., & Xu, X. (2025). "AI-based Route Optimization in Door-to-Door Delivery Services." Frontiers in Future Transportation, 2, 1654621.
[10] Zhang, Y., & Wang, J. (2023). "IoT-enabled Logistics and Real-time Tracking Systems." arXiv preprint arXiv:2311.17317.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)