A Model for Implementation of Transport Logistics Services in Port Harcourt Metropolis

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DOI: 10.56201/ijcsmt.v10.no2.2024.pg73.100

Abstract

The logistics and supply chain sector, is one of the fastest growing industries in Nigeria, though still in its nascent stage. As of 2018, the value of Nigeria's logistics sector was estimated to be 250 billion naira ($696 million), a rise of 50 billion naira ($140 million) from 2017 figures. This study aims to develop an application for the implementation of transport logistics services which will be used in Port Harcourt metropolis, that can enhance logistics operations and provide a competitive advantage for organizations within the study area. The study focuses on designing the logistic management application prototype which was used to implement a transport logistic services system. Based on a comprehensive review of existing literature, case studies, and expert opinions, the model proposed in this study provides a structured approach to implementing transport logistics services, which can assist organizations in reducing operational costs, enhancing customer satisfaction, and improving overall logistics performance. The model proposed in this study can serve as a basis for further research in the area of transport logistics services implementation, and can help organizations to enhance their logistics operations and gain a competitive advantage in today's business environment. Presented here is an all-encompassing framework aimed at facilitating the successful deployment of transport logistics services within the bustling Port Harcourt Metropolis. This model for implementation of Transport Logistics Services is meticulously designed to address the intricate challenges and intricacies inherent in the efficient movement of goods and services. This framework endeavours to optimize transportation processes, enhance supply chain management, and foster seamless coordination among stakeholders. Emphasizing both the operational and strategic aspects, this model emerges as a dynamic solution to minimize delays, and boost overall economic productivity in the vibrant urban setting of Port Harcourt. The Model for implementing transport logistics services in Port Harcourt Metropolis seeks to improve the flow of goods and services in and out of the Port Harcourt.

Keywords: *Model, Implementation, Transport, logistics, Services*

1. Introduction

The logistics and supply chain sector, is one of the fastest growing industries in Nigeria, though still in its nascent stage (Adewole, 2019). As of 2018, the value of Nigeria's logistics sector was estimated to be 250 billion naira ($696 million), a rise of 50 billion naira ($140 million) from 2017

figures. This was according to the 2018 Logistics and Supply Chain Industry report as reported by Vanguard. In 2018, Nigeria was ranked 145 out of 190 countries in its Ease of Doing Business, and 112 in the Logistics Performance Index (Babatunde et al., 2021) The current growth in Nigeria's logistics is due to infrastructure development in railways and airways, improvement in ties with other countries, development in manufacturing and export sectors, and the rise of e-commerce (Adewole, 2019).

A huge infrastructure deficit, government policies that undermine ease of doing business, poor road network, unstable electricity, entrenched corruption, and multiple taxation has led to the sector not being able to achieve its full potential. With local stakeholders unable to meet financial obligations, costs transfer to end-users, making them uncompetitive. Foreign-owned operators with the financial capabilities to absorb higher levels of business risk can better survive these conditions (Kgamanyane, 2015; Pascha, 2020).

Another problem is the inefficiency of seaports and customs services at all ports of entry. Customs clearance is slow, manual, and fraught with discretion of the agents (Moynihan et al., 2022). This protracted process significantly increases the time goods remain at ports or at sea to undergo inspection, increasing operating costs. Infrastructure is critical to any logistics and supply chain development objective. The health of available infrastructure and level of integration directly impacts logistics access, cycle-time, reliability, and cost. Maintaining a competitive logistics and supply chain ecosystem requires a constant and strategic upgrade of regional infrastructure. It also demands high performing government institutions, financing, and industry skills. Logistics can therefore be attributed to be the main indicator of economic advancement expressed boldly in trade facilitation and business competitiveness. Unfortunately, there are substantial regional and national deficits in Nigeria's logistics infrastructure which hinders its trade competitiveness negatively (Hou, 2020).

Several scolars have conducted studies in line with this study. For instance, Chen et al., (2013) developed a web-based logistics management system using RFID technology to address the high maintenance costs and inflexibility of traditional logistics systems. The proposed RFID Management Information System (RMIS) integrates various technologies such as Google Maps, GPS/GIS, IP cameras, and information pushing technologies. The system, based on a service-oriented architecture (SOA), enhances flexibility and reduces maintenance costs, demonstrating its benefits through a case study deployment.

An earlier study by Win-bee, (2007), focused on designing and implementing a wireless fleet management system to enhance logistics operations. The proposed real-time fleet management system (RTFMS) integrated mobile communication technologies to support real-time information flow, demonstrating how wireless technologies can improve logistics management and inspire new service models. The system architecture and components were detailed, providing a reference model for future implementations. Whereas Ramdani et al., (2019) developed the ENDORSE system, an integrated robotic fleet for hospital logistics, addressing challenges such as costly infrastructure, poor integration with corporate IT, and cybersecurity issues. ENDORSE includes infrastructure-less navigation, advanced human-robot interaction, cloud-based services, and modular hardware. The system's functionality was validated in a hospital environment,

demonstrating improvements in logistics efficiency and data security. Also, Czermański et al., (2021) developed a mobile terminal-based logistics information service platform for small and medium enterprises (SMEs). It emphasized cooperation, mutual aid, and informatization to reduce logistics costs. The platform aimed to strengthen connections among SMEs, facilitating effective cooperation and cost reduction through an information service system based on synergetic theory.

Samaniego et al., 2022) developed Milk Track, a mobile app to promote breastfeeding in the Philippines as part of the Philippine Health Agenda for 2022. The app features information, tutorials, a locator for breastfeeding stations, and a platform for breast milk donation. The study also addressed logistics for milk acquisition, transport, and delivery, highlighting the app's potential to reduce infant mortality and under-nutrition. Kretschmer et al., (2021) developed a dynamic break management system for warehouse workers using AI and individual vital data. The system recommends breaks based on physiological data collected via a sensor wristband, coordinated with internal processes to maintain health, productivity, and safety. The study focused on user-friendly design and the ergonomic standards of the app's interface. While in an earlier study by Kim, 2017) designed an intelligent logistics platform utilizing cloud computing, big data, and IoT to support e-commerce, self-service transceivers, and distribution optimization. The platform's architecture, comprising SaaS, PaaS, and IaaS layers, handles multi-source data for open-access cloud services, fostering the development of a collaborative logistics ecosystem and enhancing the ICT industry in China. Also, Moro Visconti and Morea (2017) developed a cost-effective mobile base for hospital logistics tasks, enhancing staff productivity by automating collection and delivery processes. The system navigates hospital environments autonomously, avoiding the need for costly infrastructure like floor lines or laser markers. The study highlighted the system's design considerations, navigation, and battery management for effective autonomous operation. While Byun et al., (2020) evaluated the usability of mobile apps in the logistics in life (LIL) sector, targeting startups. It assessed whether LIL apps meet user experience standards and suggested improvements based on usability testing and big data analytics. The findings aimed to enhance the usability and user satisfaction of LIL apps, supporting niche logistics services. In a recent study, Leng et al., (2021) designed and implemented a digital twin application for connected micro smart factories to improve efficiency and reduce costs. The digital twin synchronizes real-time data from IIoT devices for monitoring, tracking, and decision-making. This application supports personalized and distributed manufacturing, enhancing operational efficiency and offering a comprehensive overview of the manufacturing process.

2. Materials and Method

2.1 Design Methodology

Research methodology is a way of explaining how a researcher intends to carry out their research, it’s a logical, systematic plan to resolve a research problem. A methodology details a researcher's approach to the research to ensure reliable, valid results that address their aims and objectives (Biereenu-Nnabugwu, 2022).

The research methodology adopted for this research work is the Waterfall methodology The Waterfall methodology also known as the Waterfall model is a sequential development process that

flows like a waterfall through all phases of a project (analysis, design, development, and testing (Aroral, 2021)

The waterfall methodology is also known as a traditional software development approach that follows a linear and sequential process. In this method, each phase of the software development life cycle, such as requirements gathering, design, implementation, testing, and deployment is completed one after the other.

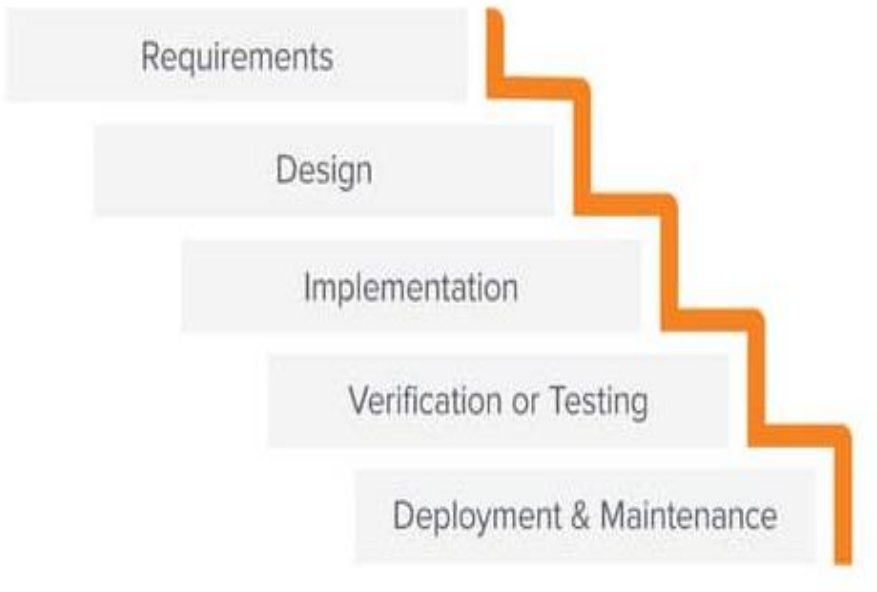


Fig. 2.1: The Waterfall Methodology

2.2 System Analysis

System analysis deals with planning the development of information systems through detailed understanding and specification of what a system should do and how the components of the system should be implemented in order to ensure that these components work efficiently to accomplish their purpose.

3.2.1 Functional Requirements

A Functional requirements defines a function of a system or it component, it is described as a specification of behaviour between input and output.

App functionality/features

A. Users and Accounts

Allow users register via phone number, email, etc. This is one of the key feature of every applications.

B. **User Profiles**
The feature allows the users to alter their personal, contact details and/or financial details.

C. **File Uploading**
The easy-to-use and secure file upload feature is essential for many application.

D. **Location Management**
This feature opens up the opportunities for users and drivers to track ride by enabling their geolocation.

E. **Booking Management**
Handles the users check-in and check-out information

F. **Map data and Location**
Map integration allows users to trace their orders and know exactly where their package is. Customers can also track their location and detect the nearest offices or stores in their neighborhood, as well as get respective directions.

G. **Payment Gateway**

This allows the users/drivers to make payment via the mobile application.

H. Push Notification
Push notifications are key features of a successful mobile app as they drastically increase user experience. The users and drivers get notified on request/ride booking.

I. Stop Detector
Is specifically designed to detect a stationary vehicle, typically in 40 seconds

2.2.2 Use Case Diagram

This Use Case Diagram is a graphic depiction of the interactions among the elements of Transport Management System. It represents the methodology used in system analysis to identify, clarify, and organize system requirements of the logistics Management System as shown below in Figure 3.1.

Figure 3.2: Use case Diagram

Super Admin: A Super Administrator is a user who has complete access to all objects, folders, role templates, and groups in the system. A deployment can have one or more Super Administrators. A Super Administrator can create users, groups, and other super administrators.
System User: Individual, or (system) process acting on behalf of an individual, authorized to access a system, the system user type classifies the account within your system
Courier Boy: a person employed by a retail store or a system to deliver orders to customers on call or via matching**.**

Customer: A customer is an individual or business that purchases another company's goods or services. Customers are important because they drive revenues; without them, businesses cannot continue to exist.

The model for Implementation of transport logistics services takes the following steps which includes:

Oder Request: The customer is the one who makes the order and request for delivery terms and then processes the order. User opens the app, the app responds only if the Network of the device is turned on and enters the departure and arrival addresses, and picks a payment mode, customer can also track, update, and see best route possible. Method. The System User can also request for additional services eg share ride details, update profile, change driver and check drivers details.

Matching: The Courier Boy receives the user's request and can take the order. In this case, the passenger Sees details about the driver and the car within the app: a number, the car's make and model, photos, and color. And the driver's rating. Plus, the arrival time and the car's movement are also displayed on the screen. In the case of a rejection, the request is allocated to the nearest driver and the drivers can also request for additional services.

Ride: The super admin tracks the downtime if you are late. When you sit into the car, the driver sends a Signal to the system, and the tracking begins. You will be able to see in real time where the car is going, the Super admin also send a notification that requires a response if it notices stagnation during transportation.

Payment: All taxi apps allow passengers to connect their payment cards with an app. The passenger Knows beforehand the ride's possible cost, and it is withdrawn after the ride is finished. The super admin also manages additional services such as User management, Full app management, parcel management, customer management, payment management, authentication, profile update, shipment management, delivery management, password verification and password change.

Rating: Both passengers and drivers can leave reviews for each other. It serves as an incentive for the market of taxi services.

The app flow includes the following steps.

2.3 System Architecture Design

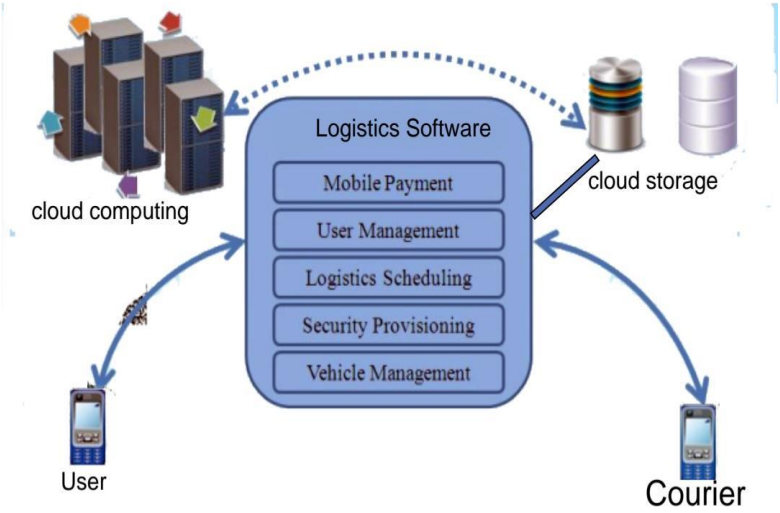
System architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system.

2.3.1 System Architecture

The logistic mobile application development process produces software applications, which run on mobile devices. Mobile apps use a network connection to access remote computing resources. The app development process includes creating installable applications for the mobile devices and implementing backend services, for instance data access to an Application Programming Interface

(API). Testing the application on target devices is also part of the process, as shown below in figure 3.2.

Figure 2.3: System Architecture of the Proposed System



2.3.2 Model for Implementation of Transport Services

Transport logistics model refers to the process of planning, implementing, and managing the movement of goods and resources from one location to another efficiently and effectively. It involves various activities such as route optimization, transportation mode selection, inventory management, and coordination with different stakeholders. A transport logistics model encompasses the strategies, tools, and techniques used to streamline these processes and ensure the smooth flow of goods. At its core, a transport logistics model includes a thorough analysis of the supply chain, taking into account factors such as demand patterns, inventory levels, transportation costs, and delivery timelines. By leveraging data and technology, logistics managers can make informed decisions regarding route planning, load consolidation, and carrier selection. Optimization algorithms are often employed to find the most cost effective and time efficient solutions, considering variables like distance, capacity, and delivery deadlines. Furthermore, a transport logistics model incorporates real time tracking and monitoring systems to enable visibility and traceability throughout the transportation journey. This allows logistics managers to proactively address any issues or delays, ensuring that goods reach their destination on time and in optimal condition as shown below in Figure 3.4.

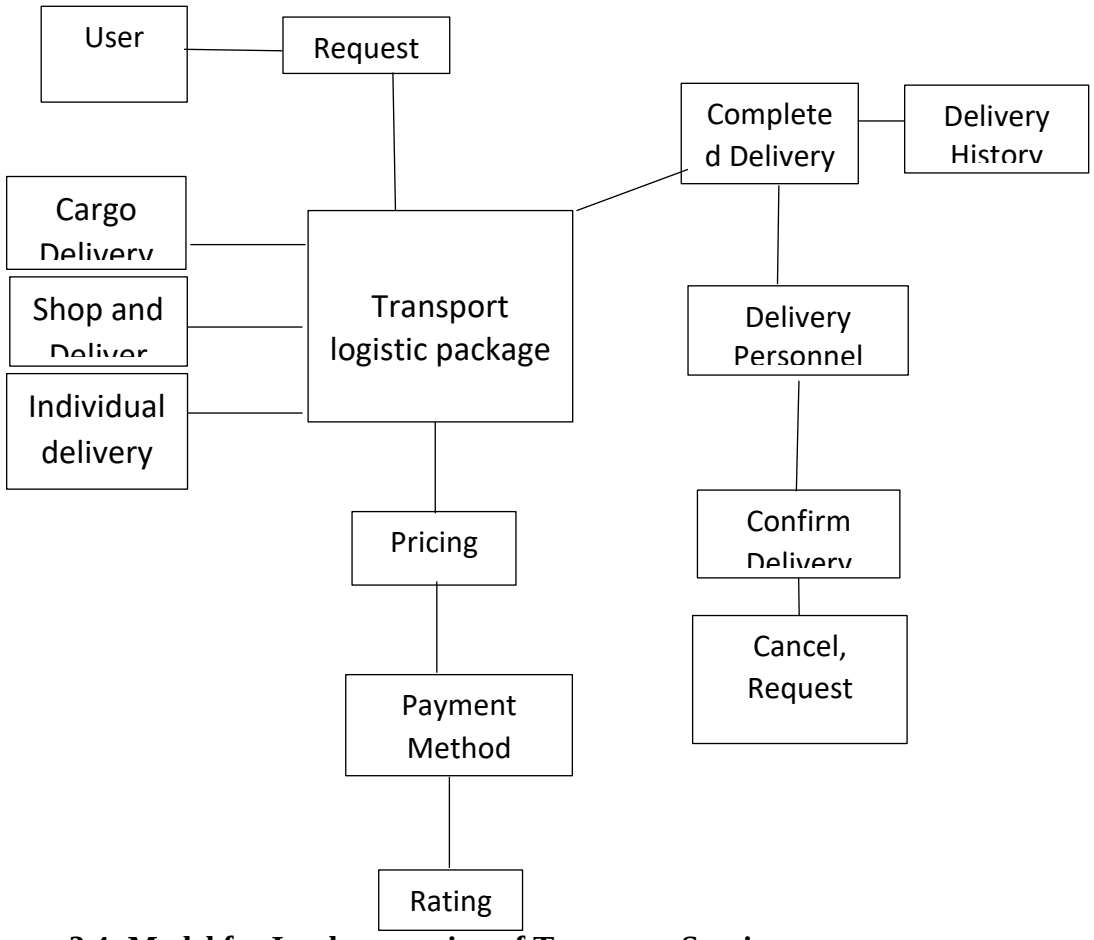


Figure 3.4: Model for Implementation of Transport Services

2.4 System Design

i. The design methodology adopted in developing the Transport logistics System is the ICT Research method and the Agile development cycle

Information and Communication Technologies (ICT) refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT) but focuses primarily on communication technologies, it involves the phases of Development, planning, defining, designing, building, and testing.

Agile development is a software development approach that emphasizes iterative and incremental progress to deliver high quality products efficiently. The Agile cycle typically begins with project planning, where requirements are defined, prioritized, and broken down into manageable user stories. Then, in short iterations called sprints, the development team builds, tests, and reviews each user story, fostering collaboration and adaptability. Feedback from stakeholders and end-users is

continuously incorporated, ensuring flexibility to accommodate changing needs. This iterative process allows for rapid development, continuous improvement and a focus on customer value, ultimately delivering a more adaptable and customer-centric end product.

2.4.1 Component Design

The system functionality consists of Transportation Activity Analysis Using Smart Devices. Transportation activity surveys investigate when, where and how people travel in urban areas to provide information necessary for urban transportation planning.

Modes. It represent the conveyances, mostly taking the form of vehicles, motorcycles that are used to support the mobility of passengers or cargo.
Infrastructures. The physical support of transport modes, where routes and terminals are the most significant components. Infrastructures also include superstructures, which are movable assets that usually have a shorter lifespan.
Networks. A system of linked locations that are used to represent the functional and spatial organization of transportation. This system indicates which locations are connected and how they are serviced.
Flows. Movements of people, freight, and information over their respective networks. Flows have origins, intermediary locations, and destinations.

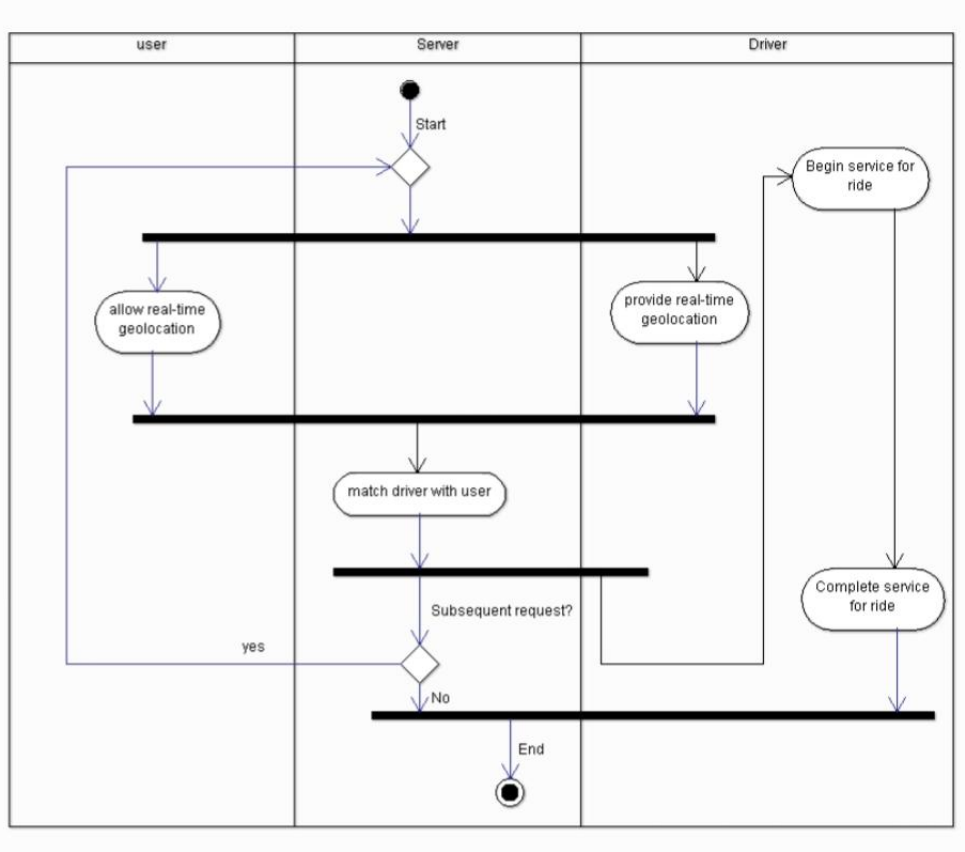


Figure 2.5: Activity Diagram for Order ProcessingDiscussion

The result of the cointegration analysis indicated no cointegration among the variables, and essentially because of the panel nature of the study data, the panel VAR was the most appropriate

Activity Diagram description table

Activity is the conceptual condition in which things are being done to model a large sequential work flow by focusing on action sequences and respective action initiating conditions.

Table 2.1 Activity Diagram description table

S/N	OPERATIVES
1	User: A user is a person who utilizes a computer or network service.
2	Real time geolocation: is one of a number of technologies that detects the current geolocation of a target, it allows people to track objects and determine exactly where they are at any given time.
3	Server: a computer or computer program which manages access to a centralized resource or service in a network.
4	Matching: pairing two or more things going together well suitably paired or used together.
5	Start: the point in time or space at which something has its origin; the beginning.
6	Begin: to perform or undergo the first part of an action or activity.
7	Complete: the act to finish doing something
8	End: a final part of something, especially a period of time or an activity.

Operative define the actions triggered by the event.

Table 2.2 Notations Mechanism used

S/N	SYMBOL MEANING	EXPRESSION

1	{}	Curly braces	to identify a set of elements used as a pair around words or items that are to be considered together
2	I =j;		is an assignment statement. The right-hand side is evaluated, and the resulting value is assigned to the thing on the left-hand side
3	J + +;		j++; means returns the current value of j and then increment it by one
4.	J		J is a high-level, general-purpose programming language that is particularly suited to the mathematical, statistical, and logical analysis of data
5	[]	Square brackets	It is referred to close intervals.
6.	F	Float	format specifier used for giving or taking inputs or outputs to the code
7	()	Parentheses or “round brackets”	symbols used in pairs to group things together or specify the order of operations in an equation
8.	∈		set membership is an element of
9.	Stdev	standard deviation	the average amount of variability in your dataset. It tells you, on average, how far each value lies from the mean.

3 RESULTS

Implementation focuses on how to develop, run, and document the Transport logistics services, as well as the choice of programming language used to develop the program in order to meet the user's requirements. It also provides details on application launch, and documentation.

3.1 System Requirements

These requirements are classified into:

i. **Hardware requirements:** The hardware requirements are the requirements of a hardware device the 3 main hardware requirement are CPU, RAM, and persistent storage.
ii. **Software requirements:** the software requirements is the description of what the system should do, the service or services that it provides and the constraints on its operation

3.1.1 Hardware Requirements

i. Intel Core i3 processor
ii. 2GB RAM capacity and above
iii. Processor speed of 2.63 GHz and above

3.1.2 Software Requirements

i. Windows 7 and above.
ii. android 4 and above (android OS)
iii. Visual Studio Code IDE
iv. Dart programming language
v. Web browser

3.2 System Setup

The System Set Up for the implementation of A Model for the Implementation transport logistics service in the Port Harcourt metropolis would typically follow a systematic approach which includes Identifying the Objectives and Scope: the objectives of the transport logistics service, such as improving efficiency, reducing costs, or enhancing customer satisfaction and the geographical area of coverage within Port Harcourt metropolis and the specific types of logistics services to be provided (Individual Transportation, Courier Transportation, Shop and Deliver, warehousing, last-mile delivery). Conduct Market Research: We analyze the existing transportation infrastructure in the Port Harcourt metropolis using questionnaires, including road networks, to identify potential opportunities and challenges. We gathered information also on the demand for logistics services, customer preferences, and industry trends. Define Service Offerings: Based on the research, we determine the specific logistics services to be offered, such as transportation management, supply chain optimization, customs satisfaction, GPS tracking, real-time communication, visibility, and online booking platforms to enhance excellent service delivery. Establish Partnerships and Networks: Identifying and establishing partnerships with key stakeholders, such as shipping companies, production firms, and warehouses. Develop IT Infrastructure: Implement a robust IT infrastructure to support logistics operations, including a transportation management system (TMS), warehouse management system (WMS), and customer

relationship management (CRM) software. Ensure data security, scalability, and integration capabilities within the systems. Hire and Train Staff: Recruit and train a skilled workforce with expertise in logistics, supply chain management, operations, and customer service. Provide ongoing training programs to enhance their knowledge and keep up with the industry Developing Marketing and Sales Strategies: Developing marketing and sales strategies to promote the logistics services to potential customers, such as manufacturers, distributors, and retailers. Utilize various channels like digital marketing, industry events, and partnerships to raise awareness and attract clients. Monitor and Evaluate Performance: Continuously monitor the performance of the logistics service, track key performance indicators (KPIs), and analyze data to identify areas for improvement. Conduct regular customer feedback surveys and address any issues promptly to maintain high service standards. Adapt and Scale: Stay updated with industry trends, technological advancements, and changing customer demands. Adapt the logistics service model accordingly and explore opportunities for scaling the operations, expanding the service offerings, or entering new markets. Remember, this is just an example system setup, and the specific details may vary depending on the nature of the logistics service, local regulations, and market conditions in the Port Harcourt metropolis.

3.3 Mobile Transport Admin Welcome Page

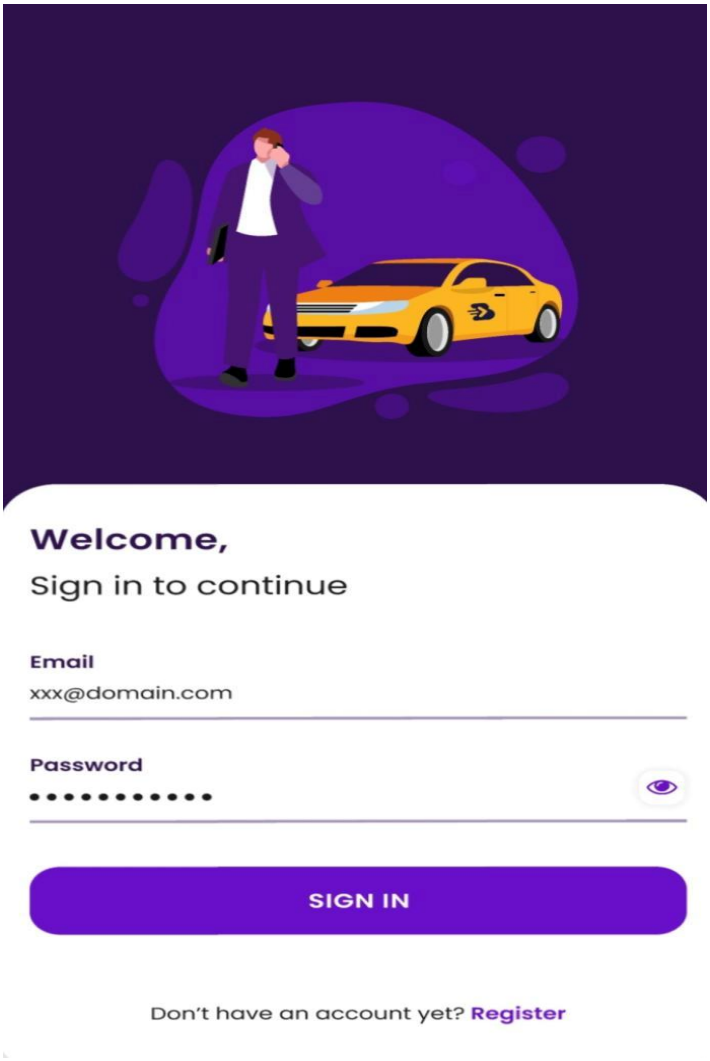


Fig. 3.1: Welcome Page Result

3.4 Mobile Transport You're Offline Page Result

Fig. 3.2: Offline Page RESULT

3.4.1 Mobile Transport Admin Registration Page Result

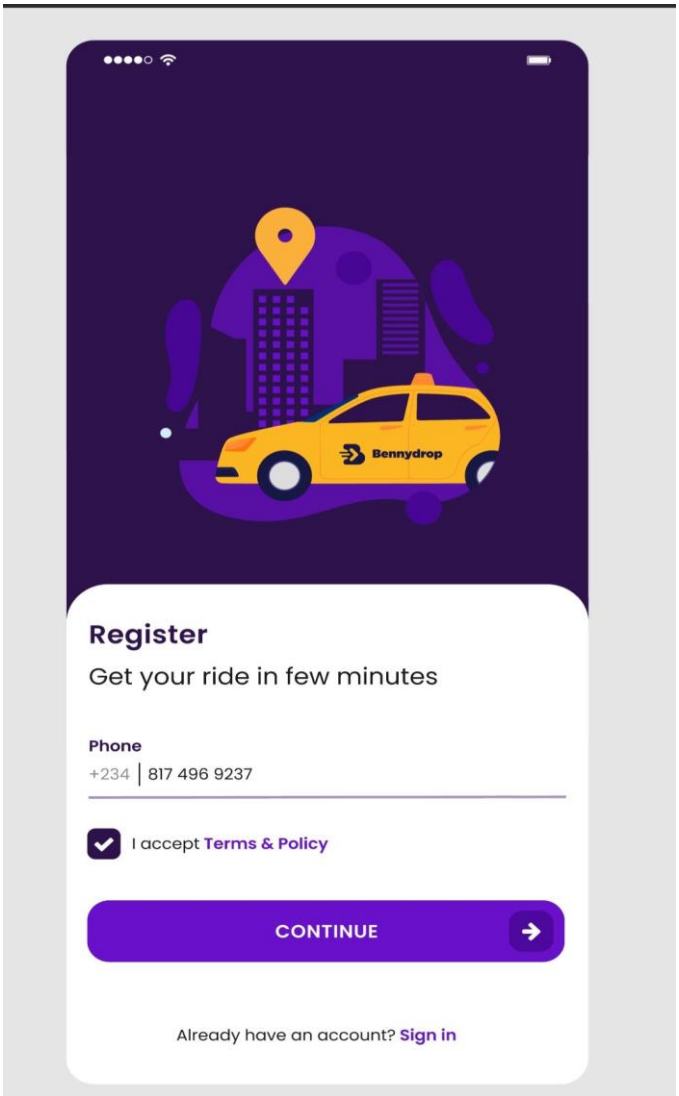


Fig. 3.3: Welcome Page Result

3.4.2 Mobile Transport Admin Confirmation page Result

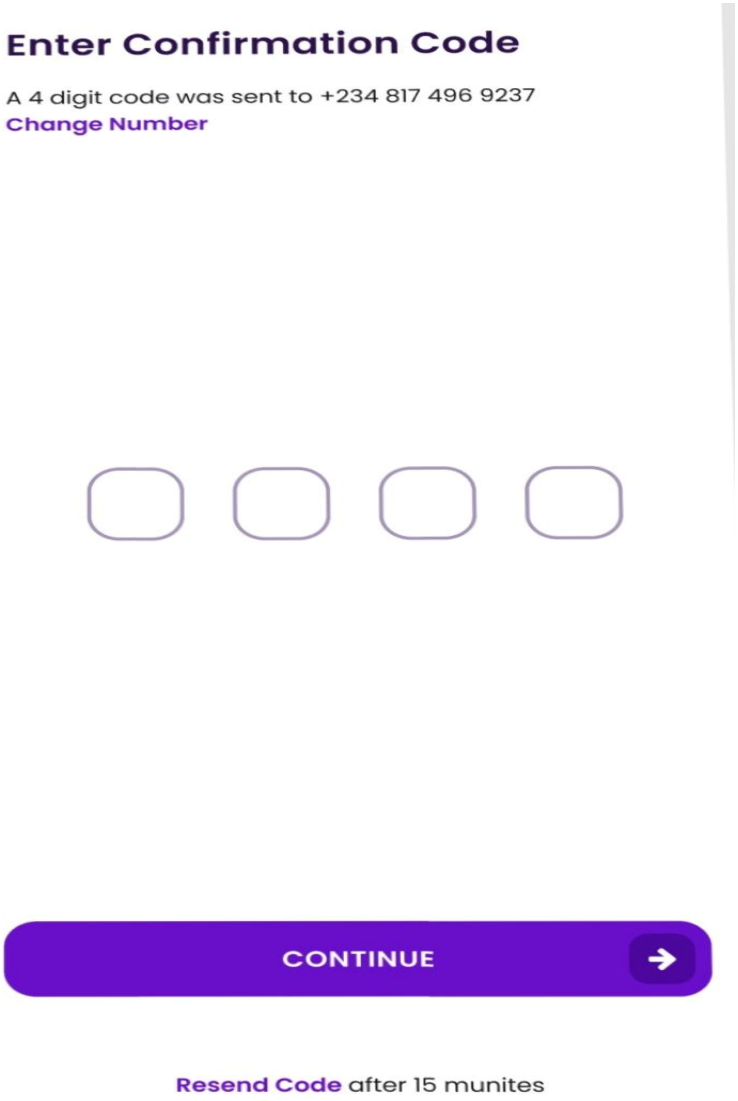
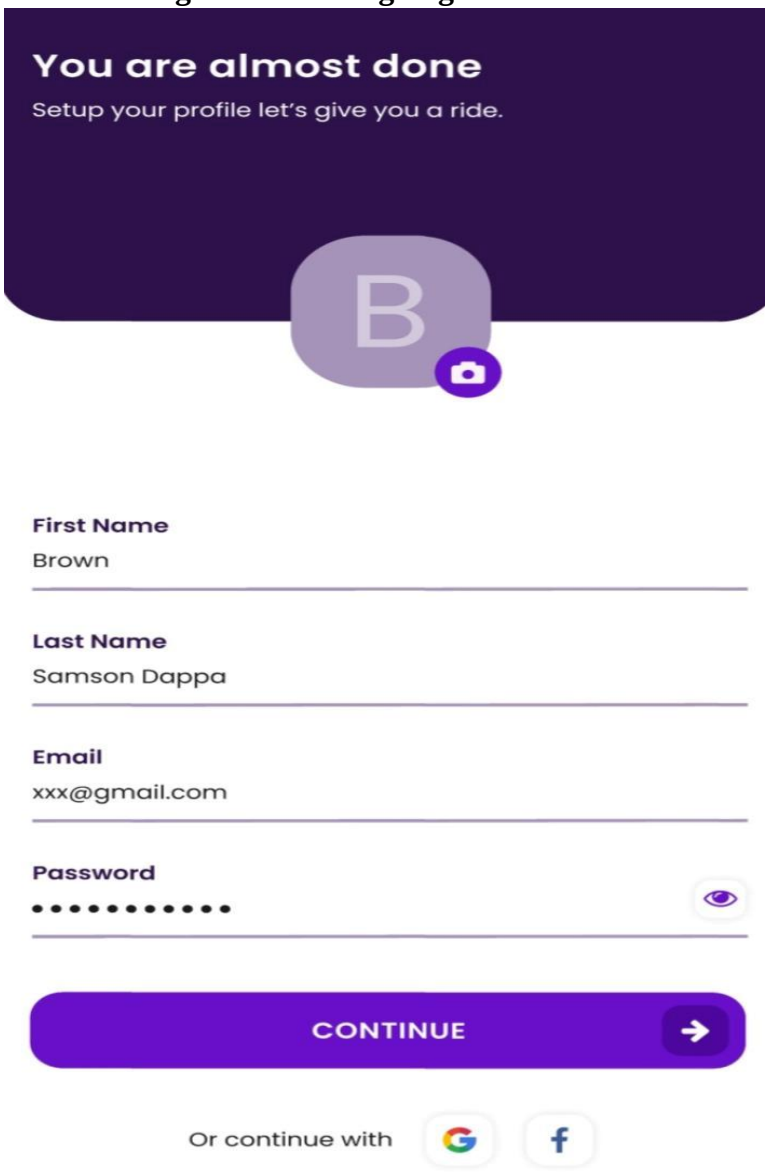


Fig. 3.4: Confirmation Code Page Result

3.4.3 Mobile Transport Profiling Page Result

Fig. 3.5: Profiling Page Result



3.4.4 Mobile Transport Location Disabled Page Result

Fig. 3.6: Turn On Location

34.5 Mobile Transport Requesting ride page Result

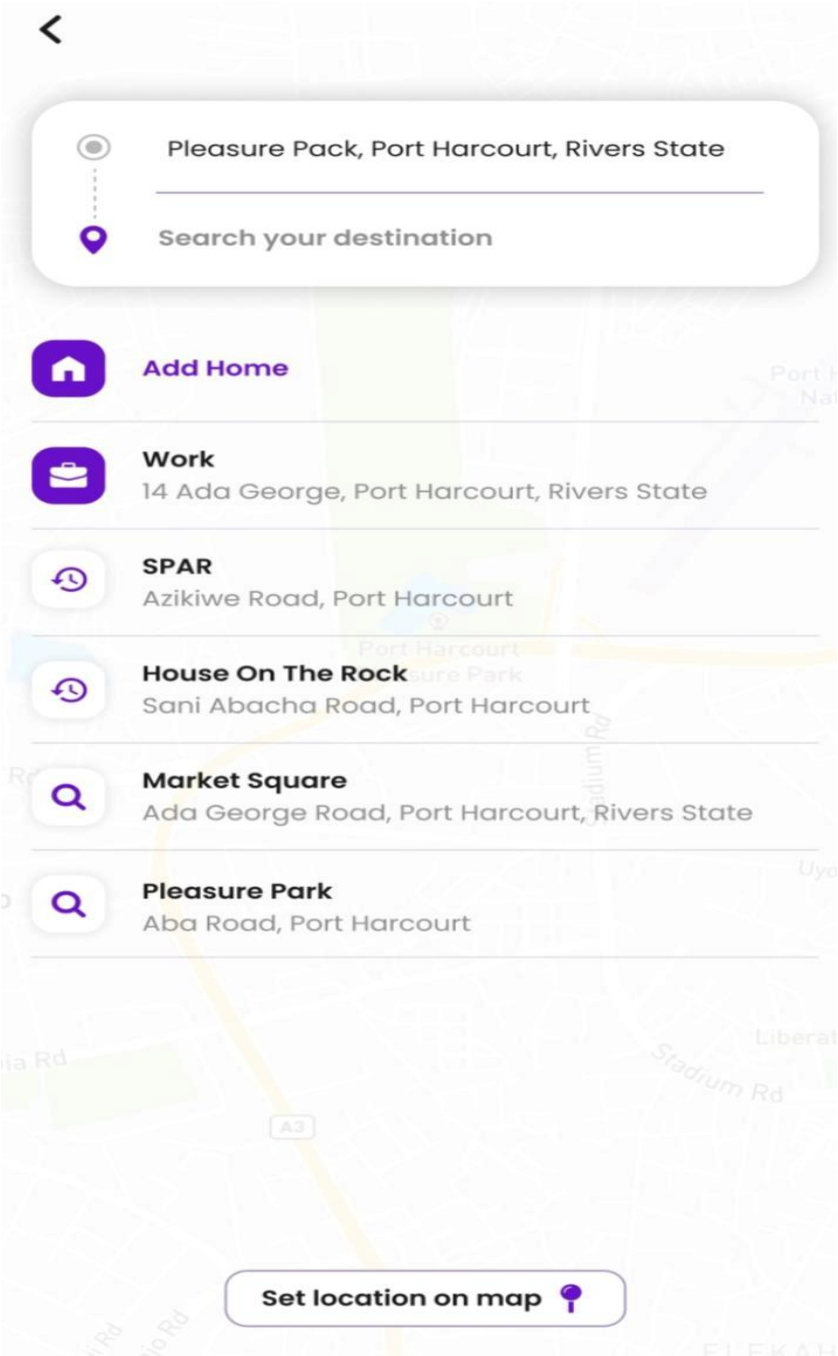
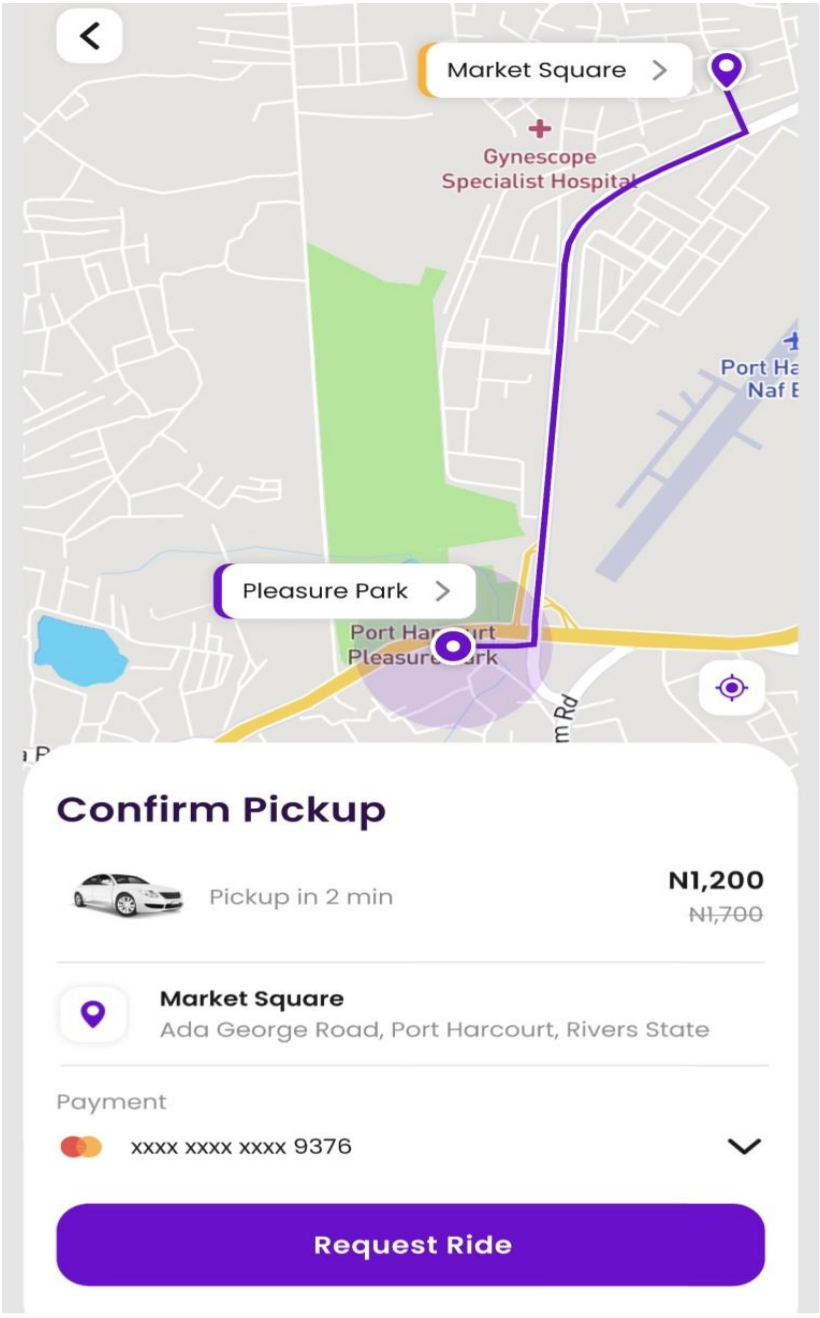


Fig. 3.7 : Requesting Ride Result

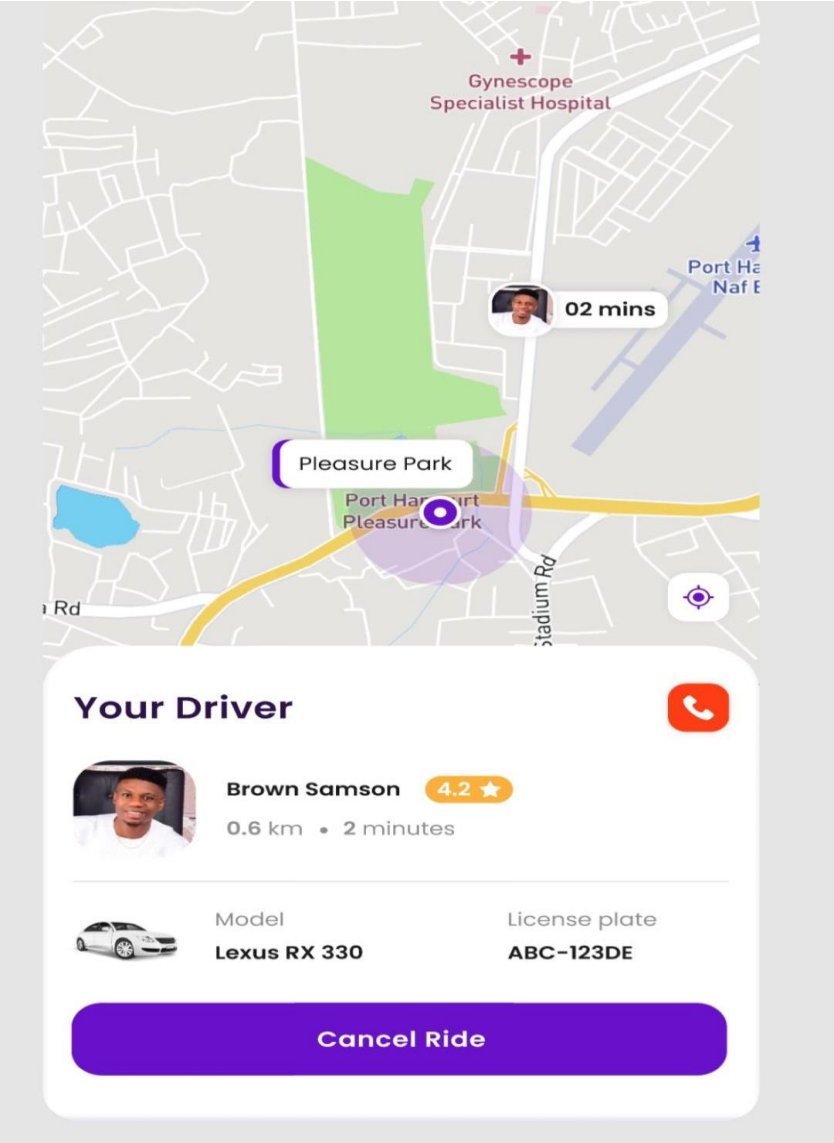
3.4.6 Mobile Transport Locations and Amount Confirmation Page Result

Fig. 3.8: Amount Confirmation Page Result



3.4.7 Mobile Transport Driver Found Page

Fig. 3.9: Mobile Transport Driver found page Result



4 DISCUSSION

The aim of the research is to enhance and develop a model for Implementation of transport logistics service Management in Port Harcourt Metropolis.

For the past decade, new information and communication technologies have profoundly impacted transport mobility habits. Today, smart phones are expanding their reach in both the number of users and mobile capabilities. Digital, and now mobile technology, have successively disrupted industries and successful business models. These changes took time to reach the transportation industry, but the shift in the marketplace is happening now. At the same time, the ability to gather transit mobility data from smartphones and push information back to users is changing everything from operations. With real-time information and mobile geo-location, commuters have a very high expectation of adaptation and personalization, they are the center of the trip. Thus, new mobile apps are allowing commuters to compare the time, cost, convenience, carbon footprint and health benefits across all modes of transport. This broadens the range of choices for customers and allows them to make decisions on-the-go. The apps take into account users' needs, priorities and real-time conditions. Finally, transportation apps have to tell you what the best option right now is. Transportation is no more simply one mode that moves a passenger from A to B. Its now a system connecting modes, services, technologies and designs according to the best option for passengers. With social networks available on our smartphones, the growth of real-time listening and dialogue puts the sharing and community system at the heart of daily trips. In fact, 13% of smartphone owners[1] consult social networks while commuting. Sharing rides, bikes, and cars and other business models are spreading, it is necessary to simplify how the options are presented to the passengers. Therefore, the emergence of a multimodal digital integrator is critical and should cover the whole passenger journey regardless of the mode of transport and the time of day.

These trends are ushering in a new mobile age in transport. The transport industry is experiencing disruption and transformation because of digital and mobile technology. Operators, anticipating and adapting to these changes to improve public transport for public transport authorities and travelers.

4.1 Welcome Page Result

The diagram above in (Fig 4.1) depicts the welcome page of a model for the implementation of transport logistics service system where the user can start it is the first page or starting point for navigation that provides where the user can register, add personal details to the system database.

4.2 Offline Page Results

The diagram above in (Fig. 4.2) depicts the offline page activity of a model for the implementation of transport logistics system service not available, where the user is disconnected from the global Internet.

4.3 Mobile Transport Admin Registration Page

The diagram above in (Fig. 4.3) depicts the Registration page of a model for the implementation of transport logistics service system where the admin can register, add personal details to the system database.

4.4 Confirmation Code Page Result

The diagram above in (Fig. 4.4) depicts a short pieces of numeric data (code, cypher) that is used for the purposes of Confirmation of a particular attribute such as personally identifiable information, a two factor authentication that protest the user.

4.5 Profiling Page Result

The diagram in (Fig. 4.5) above depicts a page accessible to the user which provides personal information about the user that created the account, it represents information regarding a user identity.

4.6 Turn on Location

The diagram above (Fig. 4.6) depicts that the user will not be able to turn on the allow apps to access your location setting for an individual, user ensure location is always on.

4.7 Requesting Ride Result

The diagram above in (Fig. 4.7) shows the page where user indicates he point that allows the user to choose where they want to receive their order or orders and the place or the location for delivery resulting from the online order.

4.8 Amount Confirmation Page Result

The diagram above in (Fig. 4.8) shows the page where the user complete pick up request to the desired drop off location and also sees the possible amount to remit after the delivery is completed.

4.9 Mobile Transport Driver Found Page

The above diagram in (Fig. 4.9) above shows the page where users request a ride or courier service to move documents and parcels as quickly as possible. Transport Riders provide valuable services, it show the driver or dispatchers details, car or Motorcycle make.

5.10 Evaluation of Results

The experimental analysis evaluation which was carried out on the system was focused on a model for Implementation of transport logistics services. The results obtained shows that the system is more efficient which makes it highly proficient when compared to the previous.

5. CONCLUSION

This study aimed to develop a model for implementation of transport logistics services in Port Harcourt metropolis, has provided a comprehensive framework that outlines the key factors that influence the successful implementation of transport logistics services. It has highlighted the importance of transportation modes, route optimization, inventory management, and information technology in enhancing logistics operations and gaining a competitive advantage. The study has also contributed to the field of logistics management by providing insights into the practical implications of the model for organizations, policymakers, and government agencies. By offering a structured approach to implementing transport logistics services, the study can assist organizations in enhancing their logistics operations, reducing operational costs, and enhancing customer satisfaction by creating a Google Sheet with columns for order details like customer name, product, quantity, and status. Then, set up a Glide app by linking the Google Sheet to it. Design the app interface to display orders and include options to add, edit, and mark orders as fulfilled. Use Glide's data editor to implement necessary calculations or logic, such as calculating total order value. To enhance user experience, add filters and sorting options for easy order tracking. With Glide's real-time sync, updates made in the app will reflect instantly in the Google Sheet, ensuring seamless order management. Obtain the required API credentials from Google Developer Console.

Utilize the Google API (e.g., Maps API, Calendar API) to implement optimizations for routines, such as finding the shortest route or scheduling events efficiently. Access and integrate the API within your application to enable routine optimization features. Additional factors that influence the successful implementation of transport logistics services. Overall, the study on "A Model for Implementation of Transport Logistics Services" provides a valuable contribution to the field of logistics management and offers practical insights for organizations seeking to enhance their logistics operations and gain a competitive advantage in today's rapidly evolving business environment.
The knowledge gap provides an overview of logistics services, its predecessor, the benefits of the mobile transport system, and the critical aspect of the design ways to improve the logistics management process

i. Focus on order-to-delivery lead time and plan accordingly

ii. Evaluate and redefine your standard operating procedures

iii. Examine transportation and redesign for cost/time efficiencies

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