



An Analytical Study of Multipurpose Dashboard Android Application: for Fruit Delivery App – Entrepreneur Perception for Nagpur City

Author: Mr. Rushikesh Thakur, M. Com (Computer Management) Semester-IV, Dr. S C Gulhane Prerna College of Commerce, Science and Arts, MS, (India)

Guide: Dr. Manjiri Pathak, Assistant Professor, Dr S. C. Gulhane Prerna College of Commerce, Science and Arts, Nagpur, MS, (India)

Abstract:

This research explores the design and development of a multipurpose admin dashboard Android application tailored for fruit delivery entrepreneurs. The application is aimed at streamlining business operations, improving delivery management, tracking inventory, and enhancing customer engagement from the admin's perspective. With a focus on usability, real-time data, and business growth, the application serves as a powerful tool for small-scale entrepreneurs seeking to digitize and manage their delivery businesses effectively.

Keywords: Admin Dashboard, Android Application, Fruit Delivery, Business Operations, Delivery Management, Inventory Tracking, Customer Engagement, Real-Time Data

1. Introduction

Entrepreneurship in local fruit delivery has gained momentum due to increasing demand for fresh produce and convenience. However, many small business owners struggle with managing orders, tracking inventory, and organizing delivery logistics. This paper introduces a Multipurpose Admin Dashboard Application designed for fruit delivery entrepreneurs. It provides a centralized platform for managing day-to-day operations, improving decision-making, and enhancing overall business efficiency.

2. Objectives

- To design and implement a dashboard app that empowers entrepreneurs to manage fruit delivery operations.
- To simplify admin tasks such as order management, inventory tracking, and delivery scheduling.
- To provide real-time insights and analytics to support strategic business decisions.
- To gather feedback from entrepreneurs regarding the app's effectiveness in business operations.

3. Literature Review

Small-scale business digitization has become vital in enhancing operational productivity. Singh et al. (2021) analyzed the impact of digital tools on agricultural

logistics and found significant improvements in time management and customer satisfaction. Mehta et al. (2022) emphasized the importance of mobile-first dashboards for micro-entrepreneurs in the food delivery sector, citing real-time updates and simplified UI as key success factors. However, most available tools are either too generic or too complex for small fruit vendors, creating a need for a tailored admin solution.

4. Methodology

4.1 Tools & Technologies

- Platform: Android Studio
- Language: Kotlin / Java
- Backend: Firebase (Firestore for real-time DB, Firebase Auth for user login)
- UI Design: Material Design with XML
- APIs: Google Maps API (for delivery routing), Notification API (order updates)

4.2 Key Modules

- Order Management: View and manage new and completed orders.
- Inventory Control: Add, update, or remove fruit stock, monitor quantity alerts.
- Delivery Tracking: Assign and monitor deliveries using location services.



- Analytics Dashboard: Track revenue, orders per day, best-selling items.
- Customer Management: View and communicate with customers directly from the app.

5. System Architecture

The app is structured into frontend (UI/UX layer), middleware (business logic), and backend (Firebase for real-time data and authentication). Admin interactions trigger background processes such as order syncing, push notifications, and delivery tracking.

6. Implementation & Testing

The app was piloted with 10 local fruit delivery entrepreneurs over a span of 4 weeks. Feedback was gathered using structured interviews and app analytics.

6.1 Evaluation Metrics:

- Ease of Use: 4.7/5 (based on SUS)
- Business Improvement Perception: 85% reported improved organization
- Reduction in Manual Errors: 70% drop in missed deliveries and stock-outs
- Average Daily Usage: 12–15 minutes per day

7. Answers for (Q&A) Multipurpose Dashboard Android Application: Admin App for Fruit Delivery – Entrepreneur Perception project:

This project focuses on developing a mobile-based admin dashboard application tailored for fruit delivery entrepreneurs to streamline their business operations. With the growing demand for local and organic produce, many small-scale fruit delivery businesses still rely on manual processes, leading to inefficiencies and errors. This application addresses these challenges by providing an all-in-one platform that includes modules for order tracking, inventory management, customer communication, and delivery analytics. Developed using Android Studio with Kotlin/Java, Firebase for real-time database management, and Google Maps API for location tracking, the app ensures seamless performance and user-friendly operation. Special attention was given to building a simple interface suitable for non-technical users and ensuring offline functionality in areas with poor connectivity. The application

was tested with 10 local fruit vendors, where 85% reported improved operational efficiency and 70% experienced fewer delivery errors. Overall, this Android-based solution offers a cost-effective, scalable, and practical tool for small fruit delivery businesses.

8. Results & Discussion

Entrepreneurs appreciated the simplicity and utility of the dashboard. Key improvements noted were faster order processing, better stock visibility, and improved customer communication. The ability to monitor performance visually helped in better decision-making. Some challenges included low digital literacy and difficulty using GPS in rural areas.

9. Future Enhancements

Future enhancements for the fruit delivery admin application include integrating payment options such as UPI and cash-on-delivery tracking, providing multilingual support to assist regional entrepreneurs, and generating automated reports in PDF and Excel formats. Additionally, WhatsApp integration will be implemented to send real-time order updates directly to customers.

10. Conclusion

The Multipurpose Admin Dashboard for fruit delivery businesses successfully addresses the operational challenges faced by small-scale entrepreneurs. The real-time, mobile-first approach enhances business oversight, supports growth, and improves customer satisfaction. The project highlights the importance of domain-specific admin tools tailored for micro-enterprises.

11. References

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