# Gro-Connect: A Digital Platform to Empower Local Grocery Stores and Strengthen Local Economy

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***Abstract*—The fast growth of quick commerce and e-commerce companies like Zepto, Blinkit, and Instamart has significantly affected local grocery stores. Many traditional shops are struggling because fewer customers are visiting them, resulting in daily losses. Although local shopkeepers have strong personal connections with their customers, they often lack the digital tools needed to compete with big online platforms. GroConnect is an Android app that helps local grocery stores by using digital technology while still maintaining the trust-based relationships between shopkeepers and customers. The main purpose of Gro-Connect is to connect customers with nearby local grocery shops through a simple and easy-to-use digital platform. The app offers two separate interfaces — one for customers and one for shopkeepers. Customers can find nearby stores, check product availability, order from their preferred shops, and choose flexible payment options. Shopkeepers can directly receive orders through their interface, manage their products, and track customer orders efficiently. A special feature of Gro-Connect is its credit-based payment system for trusted customers, which is commonly used in local markets. A working prototype of Gro-Connect has been developed using Android Studio with Java and XML. The prototype includes a complete user flow involving four dummy customers and five dummy shopkeepers, covering the entire process of placing orders, receiving orders, and handling payments. The app is designed with a simple user interface to ensure that it is easy for users with low levels of digital literacy to use. Gro-Connect aims to support local businesses, improve the digital skills of shopkeepers, and promote local economic growth by incorporating trust and community values into competition with larger e-commerce platforms.**

***Index Terms*—Android Application, Credit-Based Payment, Digital Literacy, Local Economy, Local Grocery Stores, Quick Commerce**

## I. Introduction

Throughout history, local grocery stores have always had great value in Indian society due to the availability of daily essentials with trust-based services such as credit purchases and interactive customer service. With the development of instant-delivery e-commerce platforms, serious challenges are faced by small-scale businesses in recent years. Consumers are increasingly opting for these platforms for convenience, discounts, and speedy delivery, hence affecting sales in the shops of their local shopkeepers.

Most of the local grocery stores are not digitally prepared to match up to such platforms. Lack of technical knowledge, limited resources, and low levels of digital literacy have stopped them from leveraging modern digital solutions. At the same time, customers still trust their neighborhood shopkeepers for quality products, flexible payments, and long-term relationships.

GroConnect fills this gap by connecting local grocery stores to customers in the same area on a digital platform. Rather than substituting traditional stores, the app allows them to enhance their services through

digital ordering, easy product browsing, and efficient order management. The application maintains prior trust while incorporating the same modern features as e-commerce platforms. Gro-Connect is focused on supporting local businesses, enhancing digital adoption, and improving the resilience of the local economy. It will provide an intuitive user interface, with functional features that will be a practical, realistic, and scalable solution for smaller retailers.

## II. Literature Review

Deshpande [1] studied the impact of e-commerce on small retail sellers, highlighting how local shops have been significantly affected by the rise of quick commerce platforms. The study emphasised the economic displacement caused by large online marketplaces and called attention to the need for digital solutions that can help small retailers remain competitive while preserving their traditional strengths.

Sinha [2] examined e-commerce's effect on conventional retail, demonstrating that while digital platforms have transformed consumer behaviour, traditional stores still hold considerable trust value among customers, particularly in local communities. This research supports the premise of Gro-Connect as a bridge between conventional trust-based commerce and digital convenience.

Abirami et al. [3] analysed recent developments in the field, revealing patterns emerging in the contemporary market for grocery products. There is a project that applied Flutter and Firebase for developing an advanced delivery app with real-time inventory tracking, payment processing, and optimised routing. It highlights the use of mobile applications for increasing customer convenience and merchant efficiency but is more focused on larger suppliers. However, in the case of Gro-Connect, they wager on trust and an easy-to-use interface, hoping to assist small grocery owners, some of whom might not be tech-savvy.

Ganapathy [4] focused on hyperlocal delivery, connecting local communities using technology, applying the Technology-Organisation-Environment framework to understand the adoption process for such applications by smaller and medium-size grocery retailers. The study indicated the presence of challenges such as the unavailability of skills, complexity in the area of logistics, as well as inadequate infrastructure as factors that could be effectively addressed by the use of less complex systems and approaches in the community to improve the rate of adoption. This serves as an important justification for the selection of simple and community-focused technologies in Gro-Connect.

Patil [8] conducted a survey among the owners of kirana stores in the Pune area to understand the perspectives of these stores towards online grocery services. Findings indicated a reduction in the number of people visiting the stores owing to quick commerce, yet the adoption of technology in terms of UPI, home delivery, and the like is increasing. An important point is that technology can help the kirana stores develop while maintaining consumer trust. Gro-Connect is a venture founded on this principle, where the online store is owned and controlled by the store owner.

Asiya and Darshan [9] investigated phygital retail practices, combining physical and digital retail models that are being embraced by kirana shops in India. Findings from this research highlight improved efficiency and lower customer churn from mobile ordering, QR payments, and delivery as important drivers influenced by trust and ease of use as success factors in phygital retail models, supporting Gro-Connect's two interface models and trust-based credit payment system. The ICC report [10] discusses the surge in quick commerce in

the Indian market and its subsequent influence on conventional kirana stores. It explains the surge in online grocery orders, aggressive pricing, as well as government initiatives such as ONDC, which enable small shop owners to compete in the market effectively. Gro-Connect is a platform that aligns with this, as it offers an inclusive digital platform for local grocery stores.

## III. Methodology / Experimental

### *A. Materials / Components / Block Diagram*

The Gro-Connect application prototype is developed using the following components:

- Android Studio IDE
- Java (Backend logic)
- XML (User Interface design)
- Android Emulator / Test Device
- Dummy data for users and shops

***Block Diagram***

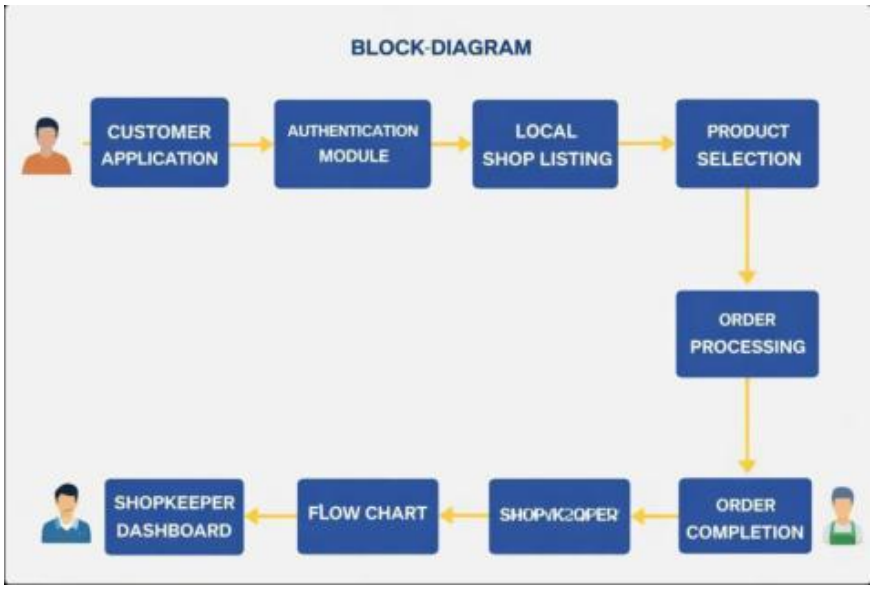


***Fig. 1.*** *Block diagram of the Gro-Connect application architecture showing Customer Interface, Shopkeeper Interface, and supporting backend components.*

### *Flowchart*

The application follows this user flow: User opens Gro-Connect app → Selects role (Customer / Shopkeeper) → Login or Signup authentication → Customer views nearby grocery shops → Selects shop and browses products → Adds products to cart and places order → Shopkeeper receives order notification → Order is processed and updated → Customer collects order or receives delivery.

### *B. Design / Method*

The application consists of two main interfaces: (1) Customer Interface and (2) Shopkeeper Interface. The Customer Interface enables users to discover nearby stores, browse product catalogues, add items to a cart, place orders, and choose from payment options including the credit-based system for trusted customers. The Shopkeeper Interface allows store owners to receive real-time order notifications, manage product listings, update availability, and track order status — all through a simplified UI suited to users with varying levels of digital literacy.

### *C. Testing / Prototype Validation*

The prototype includes 4 dummy customer accounts and 5 dummy shopkeeper accounts. Testing was performed by simulating:

- Customer login and browsing
- Order placement from multiple shops
- Shopkeeper order reception
- Credit-based payment selection

The complete flow was successfully demonstrated using the Android Emulator, validating the end-to-end functionality of the application from user registration through order fulfilment.

## IV. Results and Discussion

The proof of the central idea was the prototype we built: how a shopper can promptly explore nearby shops and place orders, how the store owners receive, track, and handle those orders, and how credit-based payment systems mirror how local grocers operate today. Our findings suggest that a platform like this can digitally empower small retailers without upending the trusted, personal relationships they already count on. The app is straightforward, practical, and scalable enough for real-world rollout.

## V. Future Scope

Future enhancements to the Gro-Connect platform include integration of online payments (UPI/cards), real-time nearby shop discovery, order tracking with delivery integration, inventory analytics for shopkeepers, expansion to pharmacies and local vendors, and multi-language regional support to serve diverse communities across India.

## VI. Conclusion

- Gro-Connect successfully digitalises local grocery stores.
- Helps small vendors compete in the digital era.
- Provides customers with convenience and trust.
- Reduces customer migration to big delivery companies.
- Strengthens neighbourhood business ecosystems.
- The system is scalable and can be expanded city-wide.
- Gro-Connect proves that technology can empower, not replace, local businesses.

## VII. Conclusion

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