Feasibility Study

1. Introduction

This feasibility study evaluates whether the **GRAB & GO – Smart Supermarket Online Pre-Order & Pickup System** can be successfully developed, deployed, and maintained in a real supermarket environment.
GRAB & GO integrates retail operations such as customer product browsing, cart management, online ordering, digital payments, order packing, stock monitoring, QR-based pickup verification, and administrative reporting.

The feasibility analysis focuses on technical, operational, and economic aspects to determine if the system is practical, reliable, and beneficial for supermarket operations.

2. Objectives of the Feasibility Study

1. To assess whether GRAB & GO meets supermarket requirements and improves customer experience.
2. To verify if the system can be implemented using existing technology and infrastructure.
3. To ensure smooth integration of modules such as ordering, inventory, billing, and pickup.
4. To evaluate the system's ease of use for customers, staff, and administrators.
5. To understand implementation costs and the long-term financial benefits for supermarkets.

3. Information Assessment

During the feasibility evaluation, the following questions were considered:

1. What problems do supermarkets face without an online pre-order system?
2. How will GRAB & GO reduce queue congestion, packing delays, and manual errors?
3. What advantages will the system bring to staff efficiency and customer satisfaction?

4. Can the system securely handle online payments and order verification?
5. Do supermarkets require new hardware or only software enhancements?

Types of Feasibility

Technical Feasibility

This evaluates whether the required technologies, tools, and resources are available to build GRAB & GO effectively.

Findings:

GRAB & GO can be developed using widely available retail technologies such as:

1. Web technologies (HTML, CSS, JavaScript)
2. Backend frameworks (PHP)
3. Databases (MySQL)
4. Secure authentication (JWT / sessions)
5. QR Code generation and scanning libraries
6. APIs for payment gateways

Features like product browsing, cart management, online payments, stock updates, and QR scanning are supported by stable and mature tools.

Customers and staff can access the system using any smartphone, tablet, or desktop browser.
No special hardware is required except basic devices like barcode/QR scanners, which are affordable.

✓ GRAB & GO is Technically Feasible since all required technologies are readily available and easy to implement.

Operational Feasibility

Operational feasibility checks whether the system will work efficiently in the real supermarket environment and whether users can adapt to it.

Findings:

1. Customers can easily browse products, order online, pay securely, and avoid long queues.
2. Supermarket staff can view new orders, pack items faster, update status, and manage pickups.
3. Inventory staff can track stock levels, receive low-stock notifications, and update products.
4. Pickup counter staff can instantly verify orders using QR code scanning.
5. Administrators can control products, offers, pricing, user roles, and view analytics.
6. The system reduces manual work, eliminates order mismatches, and speeds up service.
7. Training requirements for staff are minimal due to the simple and intuitive interface.

✓ GRAB & GO is Operationally Feasible, as customers and staff can easily adopt and use the system.

Economic Feasibility

This determines whether the system is cost-effective and provides financial benefits in the long run.

Costs Involved:

1. Website interface development
2. Backend programming and database setup
3. Hosting and cloud storage
4. Payment integration and security features
5. QR code module integration
6. Staff training
7. Maintenance, updates, and future scalability

Benefits:

1. Reduced staffing needs at billing counters

2. Faster service, resulting in higher customer throughput
3. Increased customer satisfaction → repeated purchases
4. Reduced crowding and operational stress in peak hours
5. Error-free billing and order handling
6. Better inventory control reduces stock losses
7. Digital invoices reduce paper usage and costs
8. Enhanced transparency and reporting helps business planning
9. Potential for additional revenue through loyalty programs and online promotions

✓ GRAB & GO is Economically Feasible, as long-term operational benefits and increased sales outweigh the initial investment.

Conclusion

The feasibility study confirms that **GRAB & GO is technically, operationally, and economically feasible**.
The system can significantly improve supermarket service quality, reduce workload, optimize operations, and enhance overall customer satisfaction.