Literature Survey Summary

The reviewed studies collectively highlight the rapid digital transformation of hostel administration and food-management systems. Early works such as *Smart Hostel Management System (IJERT, 2021)* proposed digital replacements for manual record keeping, emphasizing data accuracy and automation. Later research, including *Hostel Administration and Student Accommodation Management Portal (2024)* and *A MERN Stack Web Application for Hostel Administration (2023)*, introduced grid-based room allotment, secure authentication, and real-time updates using the MERN stack.

Artificial-intelligence-based systems such as *AI-Enhanced Hostel Management and Booking System (2025)* leveraged decision-tree algorithms to predict room allocation preferences, while *Image Processing for Complaint Verification (2023)* used convolutional neural networks (CNN) to classify and verify maintenance complaints through images. Other studies, like *Developing an Advanced Hostel Management System with Role-Based Access (2024)*, highlighted hierarchical access control (RBAC) and notification management using Firebase services.

On the social side, research such as *Food Share Network (2023)* and *Decentralized Food Surplus Platform (2023)* addressed surplus food distribution and NGO collaboration, demonstrating the potential for integrating food-waste reduction within campus systems. Security and data integrity were further reinforced in works like *Securing the MERN Stack (2024)*, which discussed the use of JWT, bcrypt, and Helmet.js to prevent vulnerabilities.

Overall, the literature reveals that modern hostel management systems are evolving toward comprehensive, AI-driven, cloud-connected platforms that combine room allotment, complaint automation, and sustainable food-sharing initiatives. The insights from these studies guided the proposed **Smart Hostel Management System with Food Surplus Integration**, ensuring transparency, automation, and social responsibility through secure APIs and real-time data management.