

ABSTRACT

Package delivery and pickup has become an essential element in the modern commerce ecosystem. Cash on Delivery (COD) is a popular method but often involves challenges such as payment management and package security. Therefore, it is necessary to have a safe place where the package can be safely delivered even before it is received directly by the owner. Based on the existing problems, the development of receiving packages with Cash on Delivery (COD) payment is designed. This research describes the design and implementation of a package reception box that can be accessed online via WiFi network with the help of ESP8266 module. Based on testing, this tool is effective in managing the receipt and payment of COD packages, with verification of receipt numbers from couriers achieving a success rate of more than 95%, COD packages take longer to deliver due to additional procedures, with a duration of 42.76 seconds to 2 minutes 33.14 seconds. Non COD packages are faster, with a duration of 9.31 seconds to 51.97 seconds, due to a simpler process, opening the box door with a magnetic door lock in a duration of 3.07 to 5.86 seconds after password verification, and sending photos of package conditions by ESP32-Cam in a duration of 10.13 to 13.58 seconds with all successful trials. Overall, the design of this ESP8266-based device shows high efficiency and reliability in the process of receiving and paying for COD, as well as providing the necessary notifications to homeowners, making it an effective and secure solution for COD scenarios.

Keywords: *Cash on Delivery (COD), ESP32-Cam, ESP8266 module, Package Box.*