

UNIVERSITI TEKNOLOGI MARA

**CONSTRUCTING A SECURE PARCEL BOX:
FABRICATION AND DESIGN**

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ABSTRACT

Nowadays, online shopping has become significant to society since people prefer buying things online to physical stores. Malaysia added 362,000 new digital consumers between 2022 and 2023 [1]. Among all the internet users, 9 out of 10 are now digital consumers. And 61.3% of Malaysian internet users purchase at least one product or service online every week [2]. As a result, the courier service is open every day of the week, 24 hours a day, to provide senders and recipients with the most convenience and flexibility possible. The problem occurs when customers who have not been at home cannot receive the parcels in person. When the couriers deliver the parcels may complain about damaged or missing items [3]. The objective of this project will be to design a means that will confirm that the items are delivered safely without getting damaged and ensure that parcels can be delivered even when the recipient is not at home. This research paper focuses on the design and analysis of a parcel box.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Today's rapidly evolving online retail landscape is rife with e-commerce platforms, which influence how consumers order and receive parcels. The digital shift has exposed a pressing demand for secure, cost-effective package delivery channels that can handle the vast influx of recent online purchases. Consequently, the parcel box system has emerged as a novel, inventive, and comprehensive solution that employs varied instruments, gizmos, and routines to simplify the delivery process. They even include various contemporary characteristics like safety alarms, key locks, and more to ensure that the parcel box system is delivered securely and completely intact even if the box is brought to the recipient's door in his absence [4].

At the heart of this functionality are the parcel box systems' strong key lock mechanisms. The ability of these mechanisms to act as the first layer of defense against unauthorized theft and access is a testament to their strength and security. Placing the parcels in a lockable compartment while in transit ensures that no one tampers or pilfers them until it reaches the intended recipient. The safety alarms installed in the parcel box systems take security a notch higher, as they alert the recipient immediately once the parcel is deposited. This achievement helps the recipient to collect the parcel in time, reducing the theft or accidental damage period [4] [5].

Additionally, parcel box systems do more than just protect the safety of the parcels left in their custody. By providing a well-defined and secure location for the drop-off people, the systems reduce the time and space the delivery people would have used to contact the recipients for doorstep deliveries. This helps to diminish the extent of failed deliveries attributed to the unavailability of the recipient, allowing the parcels to be delivered without delay. Ultimately, the system provides a revolutionary transformation in parcel delivery as a technology that enables more effective and