

**UNIVERSITI TEKNOLOGI MARA**

**ANALYSIS, DESIGN AND  
FABRICATION OF  
AUTOMATIC POSTBOX OPENER  
FOR PARCEL**

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## **ABSTRACT**

The final year project that will be conducted in this dissertation is an automated parcel drop box which are an innovated development of a conventional post box that are widely used in every resident. A few problems identified regarding to the creation of this project are parcels being unable to be delivered safely when no one is home and there is no place to put the parcel safely upon delivery. The objective of making an automatic parcel drop box are designed to provide safe and secured place to deliver and contain parcel safely. Thus, providing efficiency of time and energy for both the courier and the receiver. The scope of study involved in analysing and fabricating of the product are statics, strength of material, electronics, and manufacturing processes. Furthermore, the methodology that are used in the fabrication processes involves cutting, grinding, metal forming processes and metal joining processes. Last but not least, the product significance is taken to consideration to fit the demand of customers based on a survey conducted to collect and fulfil customer's requirements.

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# CHAPTER ONE

## INTRODUCTION

### **Background of Study**

Parcel drop box has been a daily need in every household in this modernized era where online shopping had become the new effortless way of shopping especially around the moment of a pandemic hitting all around the world. It is intentionally created to improve and replace the standard conventional post box whilst being able to function as post box and parcel box at the same time.

The problem arises when parcels are unable to be dropped safely when there is no one home and the post box is too small. Furthermore, collecting arrived parcels by hand could be a hassle where sometimes the delivery man's voice calling is inaudible plus there is also cases where parcel is thrown inside of house. This project is intentioned to help eliminate as much of the modern problems stated above by providing a safe and secured automatic post box for the purpose parcel dropping.

The materials that will be used for the structural part of the mailbox is mild steel for durability and aluminium for the outer coverings and walls to sustain in bad weather conditions. The fabrication process will involve welding, bending, grinding, and fastening process. The final product of this project would presume to eliminate the hassle of collecting parcel delivered while ensuring the parcel is safely stored either when one is home or not.

### **Problem Statement**

A survey was conducted to identify problems that online shoppers experienced along the process. Here are some of the problems encountered that respondent propose that had been simplified in a form of pie chart in Figure 1 for ease of vision.