

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND IMPROVEMENT OF  
LIFT PLATFORM TROLLEY**

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## **ABSTRACT**

This project is showing the improvement on platform trolley by using the lifting mechanism. Using this method can reduce the problem when carrying a heavy item that can cause the several risk factors. This project is focusing on the way to find the cheaper option for the trolley and reducing the risk on manual handling such as back pain, musculoskeletal injuries, including sprains and strains. The risk factor that can cause when handling a heavy item can be avoid if the project can be made without any problems. The methodology of this project is by finding the perfect result for average working height for lifting the platform trolley. The expected result is the project can decrease the cost compared to the price on the market.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

The same concept of the platform trolley was taken back on the late-1800s, known then as a “tea trolley”. This trolley was used to deliver hot tea and English Breakfast. In 1930, the usage of trolley has been used by the shopper as the most important thing during shopping [1]. Today, trolleys are the things that mostly used by businessman or customer. Mostly, the place that the people must do heavy work are in warehouse. The trolley function this day are famous as the most thing that people need to carry many of their item in one go. In factory, the trolley is used to carry machinery or components inside the factory, to send engine parts and transport company warehouse equipment. While the vendors use the trolley to transport the box of the bottle or others.

### 1.2 Problem Statement

The problem with some people when carrying a heavy item or a box full of books or bottles is that they don't have the means to carry a lot of items that are big and quite heavy for some people to carry. There are several risk factors associated with manual handling during carrying the heavy object. The best way to ease this problem is to use the platform trolley to carry some of the items that are hard to lift by hand. However, the platform trolley requires the user to bend their knees, which could lead to back pain for some users, especially elderly people. The risk factors when carrying the weight of the object is it could cause muscular or joint strain, the repetitive carrying of a type of object, the range of the lift, bending, twisting, or stumbling during the process of lifting the object [2]. By using the lift platform trolley, the user not only reduces their back pain but also reduces the time it takes for them to put something, for example, a book, on the shelf by lifting the platform trolley.