UNIVERSITI TEKNOLOGI MARA

ADAPTIVE BICYCLE (BIKE)

MUHAMMAD AKMAL BIN MOHD JOHAN

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ABSTRACT

This abstract investigates the evolution and effect of adapted electric assist bicycles designed for amputee legs, providing an innovative approach to improve mobility and independence. Individuals with amputee legs often encounter challenges in finding suitable mobility solutions. The objective of this experiment is to design a bicycle equip with motorized system that can be used by disabled people. The problem statement of this project are individuals with amputee legs face challenges in finding suitable mobility solutions. Traditional bicycles and manual electric bikes don't meet their specific needs, and existing motorized bicycles lack customization. This limitation affects their ability to engage in activities and navigate public spaces. The issue becomes more significant for those who become disabled due to accidents, especially when cycling is their hobby. The initiative intends to improve accessibility, independence, and inclusion by designing motorized bicycles adapted to the unique demands of this group. The project's success might open the way for a more equal and accessible society in which people with amputee legs can enjoy more mobility, participate in physical activities, and have a higher sense of freedom and autonomy. The project I've specifically designed comes with numerous benefits and advantages when compared to other products available. It stands out for its cost-effectiveness, user- friendly maintenance and control, low upkeep requirements, durability, eco-friendly design, and more. In conclusion, the Adaptive Bicycle with a motorized feature, tailored for individuals with amputee legs, stands as a commendable project. Its design, prioritizing simplicity and functionality, aims to enhance accessibility, independence, and inclusion. Through user-friendly features, cost- effectiveness, and eco-friendly considerations, the project strives to provide a practical and empowering solution for disabled individuals, promoting both physical well-being and an enjoyable riding experience.

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CHAPTER ONE INTRODUCTION

1.1 Background of Study

The background of a study on adaptive bikes would likely focus on developing motorized bicycles for amputees. The goal is to eliminate the need for manual pedaling, providing a simple and accessible form of transportation for persons experiencing mobility issues due to limb loss. Traditional transportation options are challenging for those with amputee legs. Existing solutions sometimes need physical exertion, rendering them problematic for persons with reduced lower limb capability. Accessibility issues in public settings, as well as the lack of adjustability in traditional bicycles, contribute to the difficulties that this group faces. While electric bicycles are available, they still require physical pedaling, which presents a barrier for amputees. These solutions may not entirely fulfil the special needs of those who have had amputations. The market's limited availability and customization possibilities emphasize the inadequacies of present solutions. The proposed solution is creating a motorized bicycle tailored particularly for amputees' legs. This breakthrough will employ effective electric motor technology, allowing people to move without pedaling. The design will prioritize accessibility, comfort, and simplicity of use while addressing the specific issues that amputations provide. To offer a user-friendly and flexible solution, customizable parts will be added. The aim of this study is to determine the feasibility, use, and effect of motorized bicycles for amputees. The research attempts to give useful insights into increasing mobility and general quality of life for persons experiencing limb loss by analyzing the suggested remedy. The project seeks to pave the way for the creation of a practical, user-friendly, and inclusive motorized bicycle solution customized to the special demands of this user group through rigorous assessment and user input.