



The Automatic Eyed Conductor In Mwendokasi

Innocent Jisena Revocatus Morice James Kurusanga
Kibaha Secondary School



Introduction

Dar es Salaam is the first ranked city which is the most populated in Tanzania. According to the population survey of 2012, it has the population of approximate 1.7m people, moving around the city the most densely populated place like Kariakoo due to this congestion in Mwendokasi is a current serious problem which face many passengers who prefer this kind of transport (UDART) hence there is likelihood of spreading infections due air/droplet like influenza and threatens to the current serious Corona virus (COVID19). Moreover, great possibility of injuries due to scrambling among the passengers. In our project we introduce an electronic circuit that will count the number of passengers who will enter in the bus. Our device will consist of simple materials also it will be abundantly available to buses under UDART.



Picture 1. Congestion of passengers waiting for service.

Method

We visited the route of Kimara to Gerezani in Dar es Salaam, this is one of the routes found to have great extent of congestion. We observed the systems of buses' lounging that means the moment when there are many passengers in the stations as well as the moment they are least. But also we interviewed the passengers on the challenges they face in the service and the problem they encounter related to their health and safety.

Experimentation.

The transmitter and receiver were initially aligned on the door and they were put 1.5m apart, when a person pass through the door will block the radiations which are formed between the transmitter and receiver, hence display driver counts. For better working of the device the display is placed to the dash board for driver to see the counting process up to the required number.

MATERIALS.

- | | | |
|------------------------------------|----------------|-------------------|
| -Vero board | -Capacitor | -Connecting wires |
| -Infrared transmitter and receiver | -555Timer | |
| -Battery | -Display drive | |
| -Resistor | -Regulator | |



Picture 2. arrangement of materials



Picture 3. Transmitter and receiver at the door.



picture 4. When a passenger is passing.

Results

We observed that the automatic eyed conductor device is more effective in preventing congestion in Mwendokasi buses due to the fact that it counts the required number of passengers who will enter into the buses.

The results of using this device will lead have the level seat of passengers in the buses. This reduces the high chance of transmission of airborne and contact diseases especially the todays Corona virus disease (COVID19). Hence "level seat reduces the effect of transmission of such diseases to approximate 100% than when the passengers are congested"

Advantages.

- It helps to prevent the contamination of diseases which are spread due to air /droplet like influenza and tuberculosis as well as the threatening Corona Virus
- It prevents injuries due to scrambling among the passengers
- It reduces theft in the buses
- Insufficient supply of oxygen which can lead to suffocation is reduced
- It increase the life span of the buses

Limitations.

- It only applies when passengers enter in a series order through the door

Conclusion

We finally conclude that when the automatic eyed conductor will be used, it will lead to tremendous improvement in avoiding congestion in "MWENDOKASI", reducing the spread of diseases, suffocation also will increase the life span of the buses.

Acknowledgments

We thank our school's administration for moral and material support especially our Headmaster Chrisdom Ambilikile and our mentors Mr. Julius Ngasa and Mr. Amir for their close supervision and advice .