

CHAPTER I

INTRODUCTION

Rationale of the Study

Traffic has been a global predicament that affects individuals from all walks of life. As a matter of fact, it is not dependent on age, gender, educational level, or status in life. Indeed, it is a problem that everyone experiences no matter what day or time it is. The flow of traffic determines whether people arrive at their destinations on time, early or late. Alternatively, the flow of traffic can be quoted as the “daily struggle of every Filipino”. Due to heavy traffic, some of the commuters and drivers travel early to reach their destinations on time. Unfortunately, hitting the road early is not an assurance that one can arrive at their own destinations on time. Sometimes the early bird does not catch the early worms—the traffic traps them.

Furthermore, traffic congestion does not simply occur. It does happen for certain reasons. First, it may be due to vehicular accidents. Vehicular accidents contribute to traffic congestion as it blocks the roads while reports and settlements are arranged. Second, it may occur due to certain vehicle misfortunes like engine failures or flat tires. Vehicular failures are certainly not predictable. They do not set dates or schedule when their engines will malfunction. When that unfortunate event happens, the certain vehicle becomes the cause of the traffic congestion. Third, when roads are repaired for the benefit of providing better services to the people. It causes traffic greatly because mostly half of the road is consumed for repair purposes. When certain repairs occur, only one lane can be used. Long vehicular queues are normally observed during road constructions. Fourth, it may occur due to untoward incidents like public commotions in the middle of the road or on the bridge. Sometimes it may be caused by a person causing public disturbances like trying to commit suicide in the middle of the bridge. Bringing up such commotions call up emergency respondents into the area to provide help to the situation, nosy crowd wanting to see what is happening, and even the media who wants to cover the current situation. Lastly, it may occur due to road closures to accommodate certain activities like festivities, and government events. When this happens, certain roads are blocked and vehicles are re-routed creating congested roads and highways.

Irate drivers and impatient passengers brought about by the heavy traffic are just few of the not so serious concerns. There are far more serious effects of traffic than the headache it brings. Traffic resulting to employees delayed report for work affects productivity. Lessened productivity affects the industry. Consequently, the economy. As a solution, employees tend to extend work hours to cover up productivity loss. This usually results to exhausted employees. Workers are not the only ones affected. Students too, are affected of heavy traffic. Regardless of getting up early, some still gets caught up in traffic.

Traffic greatly affects a person's wellbeing, productivity, and lifestyle. Moreover, it affects businesses. Some businesses rely on transport systems to carry the products to different destinations. Some of the products are perishable goods.

The government has done its part in addressing this problem through road widening. But it is not, at all, the solution. Thus, the proponents decided to develop a system that could address this problem and help provide better travel experience by advising traffic status and alternative routes.

Objectives of the Study

The main objective of the study is to provide traffic updates to commuters and private car drivers through a mobile application and to guide them for possible traffic routes with lesser traffic congestion.

To achieve the main goal of this study, the proponents propose to develop a system that will:

- Help lessen irate drivers and commuters by looking into alternative routes.
- Lessen the hours consumed on traffic queues.
- Help identify traffic status of possible routes of commuters.
- Provide information and updates regarding road closure due to city events and festivities.
- Provide images and videos of traffic status.
- Compute fare for each route
- Warns commuters or drivers about the traffic ahead.

Scope and Limitation of the Study

The scope of this study will help the proponents in achieving the set objectives. The limitations, on the other hand, will be features that would be of interest but not the priority of this study as of the moment. The future system evolution may be anchored on the list of limitations.

The proposed system will be able to:

- Accept user's destination input.
- Provide user location through GPS.
- Display travel routes with traffic status.
- Present ranked alternative routes.
- Display road closures due to events and festivities.
- Display images and videos for commuters' references on traffic status.
- Display possible travel time for every alternative route.
- Assist traffic concerns of Jeepney commuters.
- Display fare for every alternative route.

The proposed system will not be capable of:

- Accepting video and image uploads from users' photo gallery.
- Providing routes outside Mandaue City.

Significance of the Study

The researchers are preparing to create a mobile application and web-based platform for the commuters for their benefits, especially who have private vehicles, by letting them track traffic situations.

Specifically, the study is most significant to the following entities:

Taxi Driver. The study helps taxi drivers in a way that the system helps driver in a finding an alternative route. With taking a route which is more convenient and has lesser congestion, taxi drivers can provide better services to their passengers.

Private Vehicle Drivers. This study will help the private vehicle drivers to escape traffic easily. With their capability to take another route unlike jeepney drivers who follows a standard route.

Non-Jeepney commuters. This study will help the non-jeepney commuters like taxi commuters in a way that they can easily change route without changing from one vehicle to another.

Private sectors. This study will help private organizations and businesses for on-time delivery and operation.

Government sectors. This study will help the government sectors in a way that the government can easily disseminate information regarding road works and activities that could contribute congestion on the road. With proper dissemination of information, people will be aware of the hindrances in the road ahead.

Traffic enforcers. The study will assist traffic enforcers in a way that the system helps lessen traffic congestion by suggesting users for alternative route. With the help of the study of the system workload of the enforcers will be lessened.

Jeepney commuters. The study will assist jeepney commuters in a way that the system helps them view the status of the traffic and at the same time guide them on what jeepney will they ride.

Future researchers. Future researchers who may want to study more about the problem about traffic. The researchers will led through the systems operation and can be utilized as reference for future works and inquiries.

Flow of the Study

The flow of the study is a directed flow of the system process. It has three parameters such as: INPUT – it is where the problems are stated; PROCESS – it is the steps that are being done; OUTPUT – the information material produced by the step and provided as input to downstream steps.

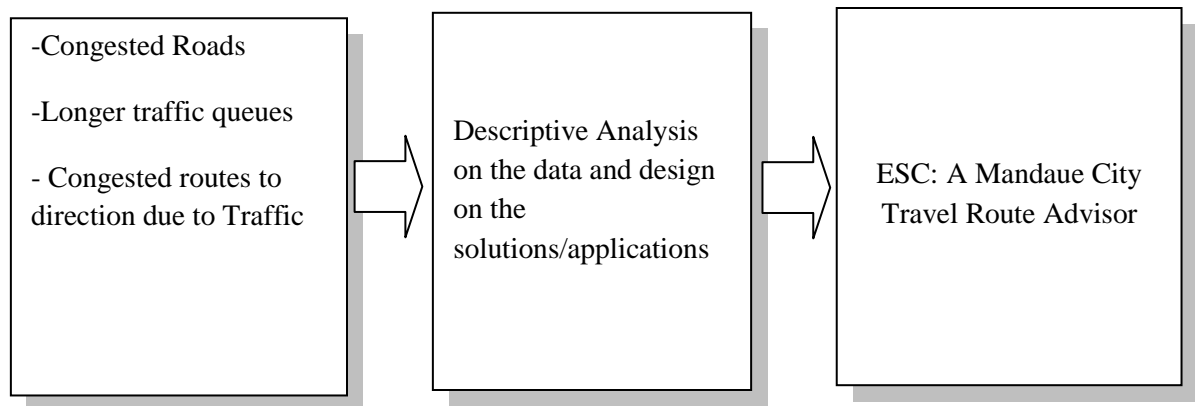


Figure 1: **Flow of the Study**

Definition of terms

Android – a mobile operating system based on the Linux kernel and that can create and store information.

BFP – Bureau of Fire and Protection, a government agency that handles issues about disasters specifically fire problems.

Commuter – an individual who rides or uses public vehicles for transportation.

ESC: A Mandaue City Travel Route Advisor - a mobile application for traffic advisory and at the same time suggest ranked alternative routes with cost of fare.

Mobile application – a technology platform used in end devices such as cell phones and tablets.

Traffic congestion – refers to traffic jams within a specified area.

Traffic enforcer – an individual responsible for aiding and monitoring traffic.

Traffic Advisory – advising commuter about the traffic updates.