SUPERVISOR'S DECLARATION

'I hereby declared that I had read through this project paper and in my opinion, this project paper was adequate in term of scope and quality, which is fulfilling the requirement of Bachelor of Technology Management (Innovation)

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THE STUDY OF DRIVERS' ACCEPTANCE TOWARD SELF DRVING VEHICLE IN MELAKA

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Report submitted in fulfillment of requirements for the Bachelor Degree of Technology Management (Innovation)

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DECLARATION OF ORIGINAL WORK

'I hereby declare that this project report the results of my independent works except for the summary and experts that had been specifically acknowledged'

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Date: _____

DEDICATION

This project paper was dedicated to my beloved father, who taught me to always search and improve my knowledge for my own sake and my loving mother, who constantly urged me to seek recognition in my study. Followed by my siblings, who were continuously motivated and enlighten me during the slumber period and my friends for generous information sharing during project report completion. I also would like to express my heartfelt gratitude for my supervisor, Dr. Yusri Bin Arshad for his guidance and time.

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ABSTRACT

The self-driving technology is ongoing development. Every big car manufacturer is struggling in R&D at self-driving cars such as Volvo, Tesla, BMW and Maserati. However, the driverless car still not completely moving on the road. There are so many manufacturers investing in this technology, it could be on the road sooner. But, when a new technology come out, there must be has the voice of acceptance also has the voice of rejection. The purpose of this study was to find out the factors that aftecing drivers' acceptance toward self-driving vehicle in Melaka. These factors would be further tested with regression analysis and Pearson Correlation. Then, the result of the finding would be explained in the descriptive method. The result of the study could assist the car manufacturers to understand the factor that affect the acceptance of drivers toward self-driving vehicle.

Keywords: Self-driving Vehicle, Acceptance

ABSTRAK

Teknologi memandu sendiri adalah perkembangan berterusan. Setiap pengeluar kereta besar bergelut dalam R & D di kereta memandu sendiri seperti Volvo, Tesla, BMW dan Maserati. Bagaimanapun, kereta tanpa pemandu masih belum beroperasi sepenuhnya di jalan raya. Terdapat banyak pengeluar yang melabur dalam teknologi ini, ia boleh berada di jalan raya lebih cepat. Tetapi, apabila teknologi baru keluar, mesti ada suara penerimaan juga mempunyai suara penolakan. Tujuan kajian ini adalah untuk mengenalpasti faktor-faktor yang mengakui penerimaan pemandu ke arah kenderaan sendiri di Melaka. Faktor-faktor ini akan diuji dengan analisis regresi dan Korelasi Pearson. Kemudian, hasil penemuan akan diterangkan dalam kaedah deskriptif. Hasil kajian ini dapat membantu pengeluar kereta untuk memahami faktor yang mempengaruhi penerimaan pemandu ke arah kenderaan yang memandu sendiri.

Kata kunci: Kereta memandu sendiri, Penerimaan

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ABBREVIATION

ANOVA   =   Analysis of Variance

TPB   =   Theory of Planned Behavior

MRA   =   Multiple Regression Analysis

SPSS   =   Statistical Package for the Social Science

DV   =   Dependent Variable

IV   =   Independent Variable

APPENDICES

CHAPTER 1

INTRODUCTION

1.0   Introduction

This research is about to evaluate the acceptance of drivers toward self-driving vehicles in Melaka. In this section, researcher will briefly discuss the concept of the topic and it's benefits. Also, we will point out the problem statement following by research questions and research objectives.

1.1   Background of study

In this thesis, we are discussing the acceptance of drivers toward self-driving vehicles in Melaka. Self-driving vehicles is an technology that make car become driverless carry the passengers to their desired destination with more safe and efficient. Enhancements in safety could be realized soon after widespread implementation of self-driving vehicles. Thanks to self-driving car sensors, it can follow traffic rules and be more alert and responsive than drivers today (Howard, 2014).

Self-driving vehicle represent a technological leap forward that can offer solutions and dramatically change today's transportation network. A self-driving car (also known as an autonomous car, personal automated vehicle, driverless car, or robotic car) is defined as a motor vehicle capable of automated driving and navigating entirely without direct human input. Self-driving cars able to detect their surroundings

with techniques such as radar, GPS, and computer vision. Advanced control systems interpret electronic sensor information to identify appropriate navigation paths, as well as obstacles and relevant signage. (Howard, 2014).

However this advanced technology still being testing stage and not commercialized yet. There are a lot of issues need to be concerns such as put the driver's life into the control of an autonomous machine. The acceptance of drivers toward this technology become an important element to release this technology in the future. (Park, 2009) reported one of the famous models related to technology acceptance and use is technology acceptance model (TAM) which is proposed by Davis. Technology acceptance model is describing and predicting user behaviors of technology information.

1.2   Problem Statement

Road traffic accident is the one of the main factors why people lost their life. World Health Organization (2017) stated around 1.25 million life lost in each year because of road traffic accidents, these accidents are the main cause of death among human aged between 15 and 29 years. In 2016, there were 7,152 people lost their life in road accidents in Malaysia, it is a huge increase from 6,706 deaths in the previous year. Besides, a total of 521,466 accidents were recorded in 2016, it is much more than 489,606 cases in 2015 and a total of 80.6% of the road accidents are because of our human error (New Straits Times, 2017).

Malaysia is no stranger to road accidents. Official records indicate that there are just under half a million road accidents every year. While not all accidents result in deaths, the increasing number of road traffic accidents only increases likelihood of resulting fatalities. In 2016, Malaysia averaged at an estimated 25 deaths per 100,000 people from road accidents alone. According to World Atlas, Malaysia is ranked as having the 18th highest number of road traffic deaths around the world and the second highest in South East Asia (World of Buzz, 2017).

World Buzz (2017) investigated the top cause for accidents in Malaysia is risky driving behavior. When a person drives in such a manner that could endanger other people. Such as: shows aggression, parking illegally, running red lights, switching lanes without using an indicator and using their phone while driving.

Self-driving vehicles could be the key to solve this global problem that took million people's life in every year. ScienceAlert (2015) has reported the impact of self-driving cars on the incidence of fatal traffic accidents and stated taking human emotions and errors out of the equation, we could reduce deaths on the road by 90%. It can be almost 300,000 lives rescued each 10 years in the US and if expand this to global, self-driving cars are able to save 10 million lives per decade.

1.3   Research Questions

i.   What are the factors influence acceptance of drivers towards self-driving vehicles?
ii.   What is the relationship between the factors that influence drivers' acceptance towards self-driving vehicles?
iii.   What is the main factor influence acceptance of drivers towards self-driving vehicles?

1.4   Research Objectives

i.   To determine the factors influence acceptance of drivers towards self-driving vehicles.
ii.   To identify the relationship between the factors that influence drivers' acceptance towards self-driving vehicles.
iii.   To determine the main factor influence acceptance of drivers towards self-driving vehicles.

1.5 Scope and limitation of study

In this thesis, the researcher wants to focus acceptance of drivers toward self-driving vehicles in Melaka. The acceptance able influenced by usefulness, ease of use, risk, trust, and social influence.

1.6 Significant of study

This research would help the cosmetics industry, especially in skincare products so the entrepreneur could know about the most significant factor that encourage the customers to buy the products. They could use the finding of this research to identify their weakness and strength of their product so there would be room for improvement to the businesses. This study was helpful for all kinds of organization and firm because the researcher provided the research information about the factor affect the consumer purchase intention for skincare product in Malaysia. This study will have served as future reference for researcher to proceed on the topic of the factor affecting the consumer purchase intention of skincare products.

1.7 Summary

In this section, researcher introduced about the background of the research, research problems, research questions and research objective were further addressed in the first chapter. The research scope, limitation and the significant were also discussed in the first chapter.

CHAPTER 2

LITERATURE REVIEW

2.0   Introduction

In this section, researcher will explain furthermore on self-driving vehicle, technology acceptance model (TAM), theory of Planned Behavior (TPB) and factor affecting the acceptance of drivers toward self-driving vehicle. Furthermore, there was literature review on the past studies related to the topic of research. The literature review helped to increase the understanding of the study and supported the proposed conceptual framework in this section. Lastly, the hypothesis of the research also proposed to this study.

2.1   Theory of Reasoned Action and Planned Behavior

According to (Hausenblas, Carron, & Mack, 1997), theory of reasoned action (TRA) developed as a framework to discuss volitional behavior based on the assumption that people behave in a sensible and rational manner by taking into account available information and considering the potential implications of their behavior. The basis of TRA is an expectancy by value summation of belief about performing a behavior. The cornerstone of TRA is intention which is a motivational construct that represent how difficult people are willing to perform and how many effort they are

planning to execute to perform a behavior. Intention is hypothesized to be the direct determinant of behavior and is, in turn, determined by the attitude toward performing the behavior and perceived social pressures to perform the behavior (subjective norm). These latter determinant of intention (attitude and subjective norm) are founded on behavioral beliefs and normative beliefs, respectively, that form the expectancy-value base.

Attitude toward performing a behavior is a function of a cognitive belief structure that embraces two subcomponents: the individual's belief about the consequences of carrying the behavior and the positive or negative evaluation of those consequences. While subjective norm is considered a joint product of an individual 's normative beliefs which are perceptions about the expectations of important others and motivation to comply with those expectations.

Ajzen's study (as cited in Hausenblas et al., 1997) stated the intention cannot be the only predictor of behavior in situations where the actor's control over the behavior is incomplete. To take into account limitations (real or perceived) in performing a given behavioral, Ajzen added a third element to the original Fishbein and Ajzen model which is the concept of perceived behavioral control. The revised model is referred to as the theory of planned behavior (TPB). Perceived behavioral control is conceptualized as the perceived ease or difficulty of performing a behavior. Perceived behavioral control is considered to have both a direct outcome on behaviors and an indirect outcome through behavioral intentions.
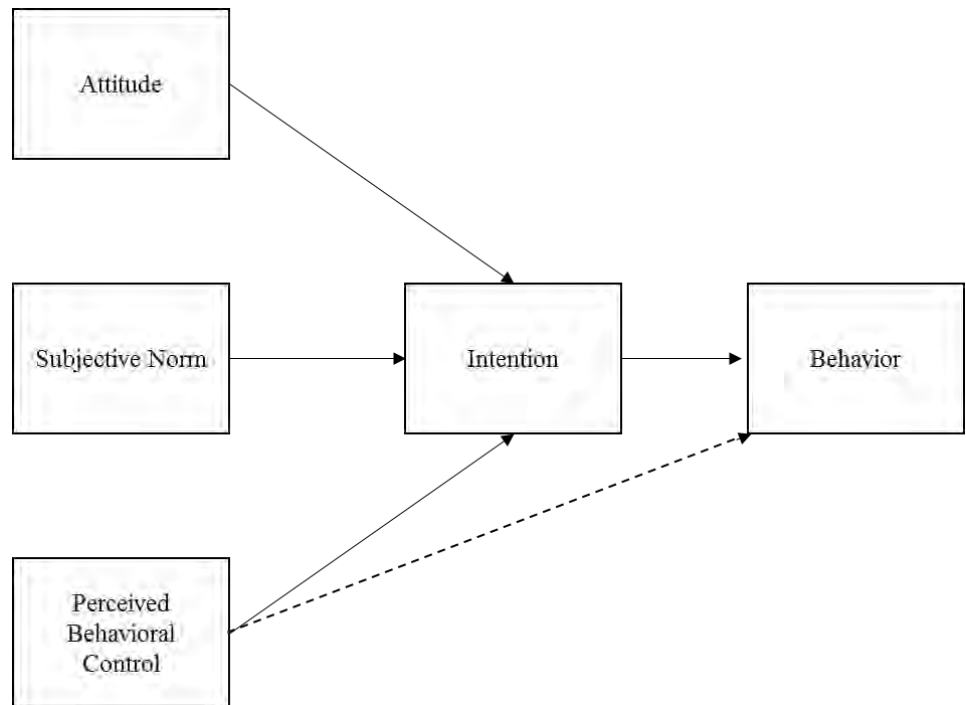
Figure 1: Schematic representation of TPB.

2.2   Technology Acceptance Model

(Chuttur, 2009) stated in 1985, Fred Davis proposed that system use is a response that can be explained or predicted by user motivation, which, in turn, is directly influenced by an stimulus consisting of the actual system's features and capabilities (Figure 2).

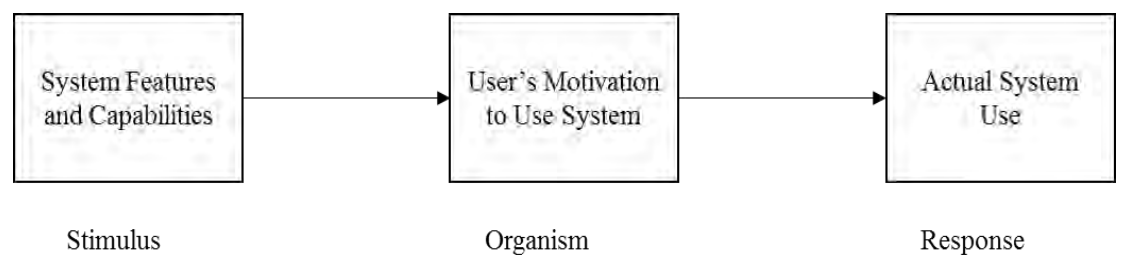Stimulus   Organism   Response

Figure 2: Conceptual model for technology acceptance

Based on prior work by (Fishbein, M. & Ajzen, 1975), who formulated the Theory of Reasoned Action, Davis further refined his conceptual model to propose the Technology Acceptance Model as shown in Figure 3.
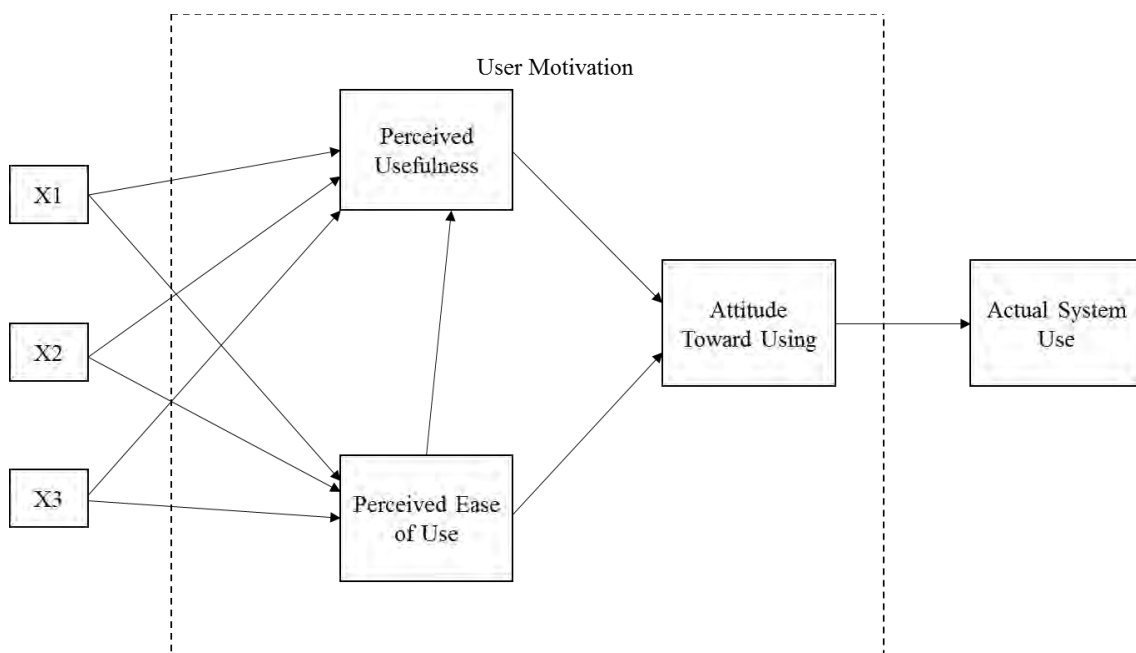

Figure 3: Original TAM proposed by Fred Davis (source: Davis, 1986)

Davis's study (as cited in Chuttur, 2009) suggested that user's motivation can be explained by three factors which are perceived ease of use, perceived usefulness, and attitude toward using the system. Davis hypothesized that the attitude of a user toward a system was a major determinant of whether the user will use or reject the system. The attitude of the user, in turn, was considered to be influenced by two major beliefs: perceived usefulness and perceived ease of use, with perceived ease of use having a direct influence on perceived usefulness. These beliefs were hypothesized to be directly influenced by the system design characteristics that represented by X1, X2, and X3 in Figure 3.

(Davis, 1989) defined perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance. This follows from the definition of the word useful which mean capable of being used advantageously. Within an organizational context, people are generally reinforced for good performance by raises, promotions, bonuses and other rewards said by Pfeffer,

Schein, and Vroom (as cited in Fred Davis, 1989). A system high in perceived usefulness, in turn, is one for which a user believes in the existence of a positive use performance relationship.

(Davis, 1989) also stated perceived ease of use, in contrast, refer to "the degree to which a person believes that using a particular system would be free of effort." This follow from the definition of "ease": "freedom from difficulty or great effort." Effort is a finite resource that a person may allocate to the various activities for which he or she is responsible (Radner & Rothschild, 1975). All else being equal, Davis claimed an application perceived to be easier to use than another is more likely to be accepted by users.

(Chuttur, 2009) mentioned in 1993, Davis mentioned that in contrast to what he initially predicted, perceived usefulness could also have a direct influence on actual system use. At the same time, Davis found that system characteristics could directly influence the attitude of a person toward using the system, without the need for the person to perform an actual belief about the system as shown in Figure 4.
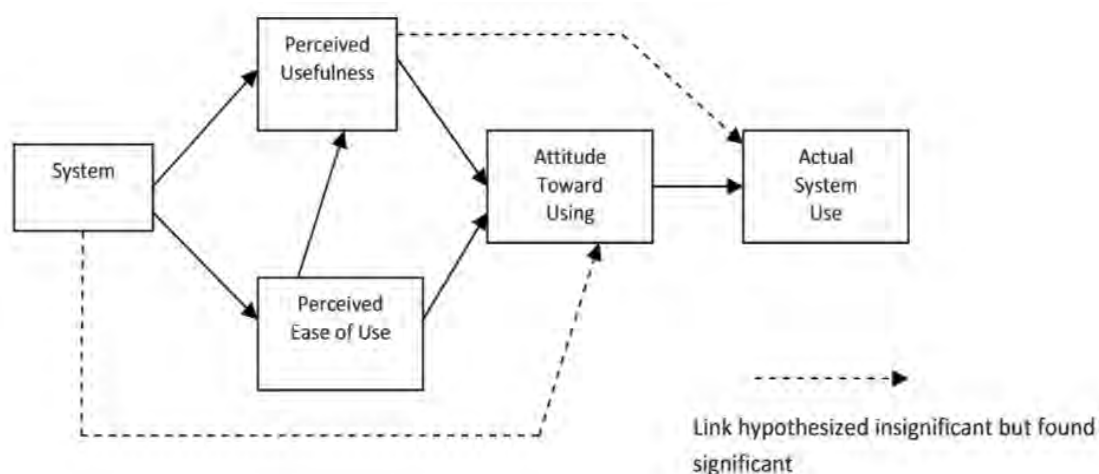

Figure 4: New relationship formulation in TAM (source: Davis, 1993).

Next, TAM include behavioral intention as a new variable that would be directly influenced by the perceived usefulness of a system (Davis, Bagozzi, & Warshaw, 1989). (Davis et al., 1989) suggested that there would be cases when, given a system which was perceived useful, an individual might form a strong behavioral