

## APPROVAL

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**QUALITY IMPROVEMENT TOWARDS WEB DESIGN  
APPEARANCE BASED ON CUSTOMER PREFERENCES ON  
ONLINE BUS BOOKING TICKET**

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This report submitted in partial fulfillment for  
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**FACULTY OF TECHNOLOGY MANAGEMENT AND  
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## DECLARATION

“I hereby declare that the work of this exercise is mine except for the quotation and summarize that have been duly acknowledge.”

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## DEDICATION

I would like to dedicate the appreciation for my beloved parents, Saaidin bin Harun and Norlia binti Adam who are strongly give motivation and moral support in order to complete this research study. I also would like to thank my supervisor En Hasoloan Haery I.P for the valuable knowledge.

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## ABSTRACT

Nowadays, all things can be done by online. This is also applied to online services like booking or purchasing bus ticket through websites. The facts, the appearance and features of the websites influenced the customer purchasing to several of websites that offers the services. The most common websites that use by the customers are Redbus, Easybook and Catch That Bus. This study is carried out to determine the customer preferences and satisfaction related to the web design appearance. The approaches used in this study are Kansei Engineering that is as a function to analyze human emotion and characteristics and Eysenck Personality Traits that useful to identify the customers. The survey was conducted through questionnaire were distributed to 150 respondents of Faculty of Technology Management and Technopreneurship students. While, for Gaze Tracking is carried to 15 of the respondents that were required to watch a video for the eye tracking survey towards selected online booking ticket websites. The data collected were then analyzed and manipulated using SPSS software for statistical analysis where the study found that the most preferences were on quality of web design appearances and clear pictures. Based on this study, customers prefer the easiness of using websites rather the web design appearance. Through the eye tracking, it will be easier to identify which features or characteristics that influence the customers towards the websites. From both method, It is found that the consumer prefer Redbus website the most as it keep simplicity in the web design and easy for the users to navigate the website. However, this study have the limits to tools related the precision of eye tracker and samples since this study is only implemented in FPTT.

**Keywords:** *Kansei Engineering, Customer Preference and Satisfaction, Eysenck Personality Traits*

## ABSTRAK

Pada masa kini, semua perkara boleh dilakukan secara dalam talian. Ini juga digunakan untuk perkhidmatan dalam talian seperti tempahan atau pembelian tiket bas melalui laman web. Fakta, penampilan dan ciri laman web mempengaruhi pembelian pelanggan ke beberapa laman web yang menawarkan perkhidmatan. Laman web yang paling biasa yang digunakan oleh pelanggan adalah Redbus, Easybook dan Catch That Bus. Kajian ini dijalankan untuk menentukan keutamaan pelanggan dan kepuasan yang berkaitan dengan penampilan reka bentuk web. Pendekatan yang digunakan dalam kajian ini adalah Kansei Engineering yang berfungsi sebagai menganalisis emosi dan ciri-ciri manusia dan ciri-ciri Kepribadian Eysenck yang berguna untuk mengenal pasti pelanggan. Kajian dilakukan melalui soal selidik yang diedarkan kepada 150 responden pelajar Fakulti Teknologi dan Teknousahawan. Aplikasi Gaze Recorder digunakan kepada 15 orang responden yang dikehendaki menonton video untuk tinjauan jejak mata ke laman web tiket tempahan terpilih. Data yang dikumpul kemudiannya dianalisis dan dimanipulasi menggunakan perisian SPSS untuk analisis statistik di mana kajian mendapati bahawa kebanyakan pilihan adalah pada kualiti penampilan reka bentuk web dan gambar yang jelas. Berdasarkan kajian ini, para pelanggan lebih suka kesenangan menggunakan laman web dan bukan rupa reka bentuk web. Melalui penjejakan mata, lebih mudah untuk mengenal pasti ciri atau ciri yang mempengaruhi pelanggan terhadap laman web. Daripada kedua-dua kaedah tersebut, didapati bahawa pengguna lebih suka laman web Redbus paling banyak kerana ia mengekalkan kesederhanaan dalam reka bentuk web dan mudah bagi pengguna untuk mengemudi laman web. Walau bagaimanapun, kajian ini mempunyai had yang berkaitan dengan ketepatan pengesan mata dan sampel kerana kajian ini hanya dilaksanakan di FPTT.

Kata kunci: Kansei Engineering, Keutamaan Pelanggan dan Kepuasan, Ciri Kepribadian Eysenck.

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**LIST OF ABBREVIATIONS, SYMBOLS AND NOMENCLATURES**

FPTT	Faculty of Technology Management and Technopreneurship
KE	Kansei Engineering
SPSS	Statistical Package of Science Software
UTeM	Universiti Teknikal Malaysia Melaka

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

Today's generation of technology advancement, have changes people lifestyles. According to Yang *et al.*, (2017), people now can perform various activities online since there were high internet penetration and mobile connectivity without limitation and geographic barrier. The existence of internet network has given way for people to access and exchange information, get service, also market and buying the products. The facts, internet users increases day by day and have created online business.

In line with time circulation, apart from purchasing online items, service sectors has also offered online services as an alternatives from the traditional way. To thrive highly on competitive market, website design is the most important things to consider. Lindgard *et al.*, (2006) stated web page appearance is the powerful factors in the user's first impression and experience. The attractive website is important in building customer trust (Karvonen, 2000). Parush *et al.*, (2005) claimed that the users will immediately switch to another website if they find out that website could not satisfy them and dislike it. Therefore, websites designer and operator should improve the quality of website based on the users experience so that meet the psychological needs of the user (Guo *et al.*, 2015).

Response to Affandy *et al.*, (2016), website is a platform for a variety of information and services that emphasis more on the importance of the website. This meant that the challenges is to ensure that web design visuals should consider the aesthetics visual of the website so that positively promote overall usability and performance of the website. Aro (2014) said that when designing a webpage, the most important principles are balance, harmony, rhythm, contrast and repetition. To produce best quality web design with visual aesthetics, customer satisfaction are the great indicators to measure the quality of the websites.

In this context, Khadka and Maharjan (2017) said the key business strategy element together with the retention and repurchase of customers towards products is the satisfaction of customers. This is also underlined by Bhattacharjee (2001), that the individual's emotional state is the most important factor is the satisfaction of customers to continue buying intentions. This meant that most likely the website accessed by customer were due to the satisfied customers than dissatisfied customers. Since to fulfil customer satisfaction through the attraction for them to visits the websites, Noronha *et al.*, (2017) argued that the satisfied customers would have positive attitude towards the website. Gilanini *et al.* (2013) stated that company will have gain a lot of benefits from their customer satisfaction and a higher level of satisfactions can leads the loyalty of the customers. Customer satisfaction is a guiding principle for most companies in terms of marketing tactics and developing marketing activities (Awan and Rehman, 2014).

To have better understanding in customers' feelings and emotion for satisfaction, Kansei Engineering is an approach related to customer preferences based on their customer's emotion articulated to the design of products. There are some advantages of this technique and still popular today. Shen and Wang (2015) stated that Kansei Engineering is a "translating customer experience and image technology into elements of product design". This approach is a user-oriented technique that transform individual images and feelings into product design through evaluating the user attributes by understanding the correlation between modelling and product attributes (Wang & Yeh, 2015). Here, Lokman (2009) in

the context of the web designer have to alert with the surrounding changing of current e-commerce websites, suggested that the designer have to not neglects human emotional aspect and highly rely towards the functionality of the website.

Based on problems above, to create a websites that have a good quality of web design, the customer satisfaction are the most important factors to include in the elements. In terms of visual, the elements of webs design need to be included in balance to ensure the visual aesthetic and the functionality of websites design so that does not look to heavy. This project is therefore will investigate and indentify the problems related in web design based on aetshetics and functionality. Kansei Engineering techniques will be used to translate consumer emotion articulated in Kansei words, whiles customers' feelings towards the functional attributed of product design will be determine the attributes that satisfy customers. The statistical approach will be utilized in this project to find out what the correlation between the aesthetic design of website against the functionality of website to attract the customers and fulfill their requirements.

## **1.2 Problem Statement**

Today's technology accelerates parallel to the time as it goes by. While it is now in the revolution of industry 4.0, all things are interconnected with the technology. Internet is one of it that becomes very important towards this era where many things can be done online instead of the traditional one. There are many services just can go through online. An instance, online booking tickets services. Since it can be considered as the most services that people use, there are many websites offers this service. In fact, this is due to the websites becomes competitors in online booking tickets services. The quality of the websites, therefore, becomes important to create an added value in competition with others.

In order to produce the best quality websites, it must suits with the customer preference and feel satisfied with it. In this context, said the key business strategy element together with the retention and repurchase of customers towards products is the satisfaction of customers (Khadka and Maharjan , 2017). Consumer satisfaction is the emotional state of the individual (Noronha *et al.*, 2017: 168). Where the main driver for continuing the intention to buy is happiness (Bhattacharjee, 2001). Thus, the needs of consumers is as a fundamental assumption in develop strategies that lead to user satisfaction (Ilieska, 2013).

In the perspective of services is as a business, web design appearance plays a crucial role. The website's design based on what the attributes made that shows in the web appearance will impact on whether satisfy the users. Kansei Engineering is necessary to be adopted in the terms of customer articulation related to their expression. According to Hartono (2012), the words Kansei represented the general impressions and emotional effects of the customers based on the concept of a particular product or services that can be extracted and translated into design features. Wang and Yeh (2015) argued that since the quality of product appears to be major factor influencing purchasing decisions in the consumer marketplace, therefore the product designers should effectively meet user and their expectations if they can see product form features. However, some of the websites might not considered this factor is as an important thing in capturing their customers' preferences.

Nagamachi (1989) proposed Kansei Engineering approaches to describe the aforementioned. The facts, the application of KE in terms service structure is rarely found since intangible service elements are difficult to provide to induce test subjects, this relates to the state of affective perceptions (Hsiao *et al.*, 2016). Since the web design appearances impact to the consumer feelings and emotion, there were on how the company positioned themselves to capture their customer feelings become more attention of companies. This is due to the websites appearances become powerful factors in initial impressions of consumers and subjective experiences (Lindgaard *et al.*, 2006) and developing the users trust based on appealing websites (Guo *et al.*, 2015).



This study to be explored on the basis of this reason of what the customer preferences related to web design appearances for customer satisfaction where the quality improvement are still required. This study will find out which the websites that people favour most and what the characteristics or factors that influencing consumer when they visits the websites.

### **1.3 Objective**

This project discusses about study and analysis of the quality improvement towards web design appearances to fulfil customer satisfaction by using Kansei Engineering for customer preferences.

- a) To identify the web design appearances quality.
- b) To determine the customer satisfaction towards websites appearances.
- c) To find the correlation of customer satisfaction on web design appearances.

### **1.4 Scope of Project**

In this project, the focused are on customer satisfaction towards web design appearance based on human Kansei. There are many websites with different design and features. In this research, the variables that influence the customer satisfaction towards web design appearance will be analyse. The research also later will define the answer of the research questions created above and the objectives will be achieves questions answered.

This research will be conducted among universities student mainly in Universiti Teknikal Malaysia Melaka(UTeM) to identify the degree of customer satisfaction of web design appearances based on the features and quality of the websites. This study will be using Kano method to analyse the characteristics of an individual towards their preferences and satisfaction towards web design appearances. Furthermore, statistical approach is needed to obtain more reliable and accurate results, thus a survey that conducted by generating questionnaire are required.

### **1.5 Framework Study**

Figure 1.1 shows the framework of this study research. This framework consists of four phase which are phase of collection, analysis, evaluation, and validation of results

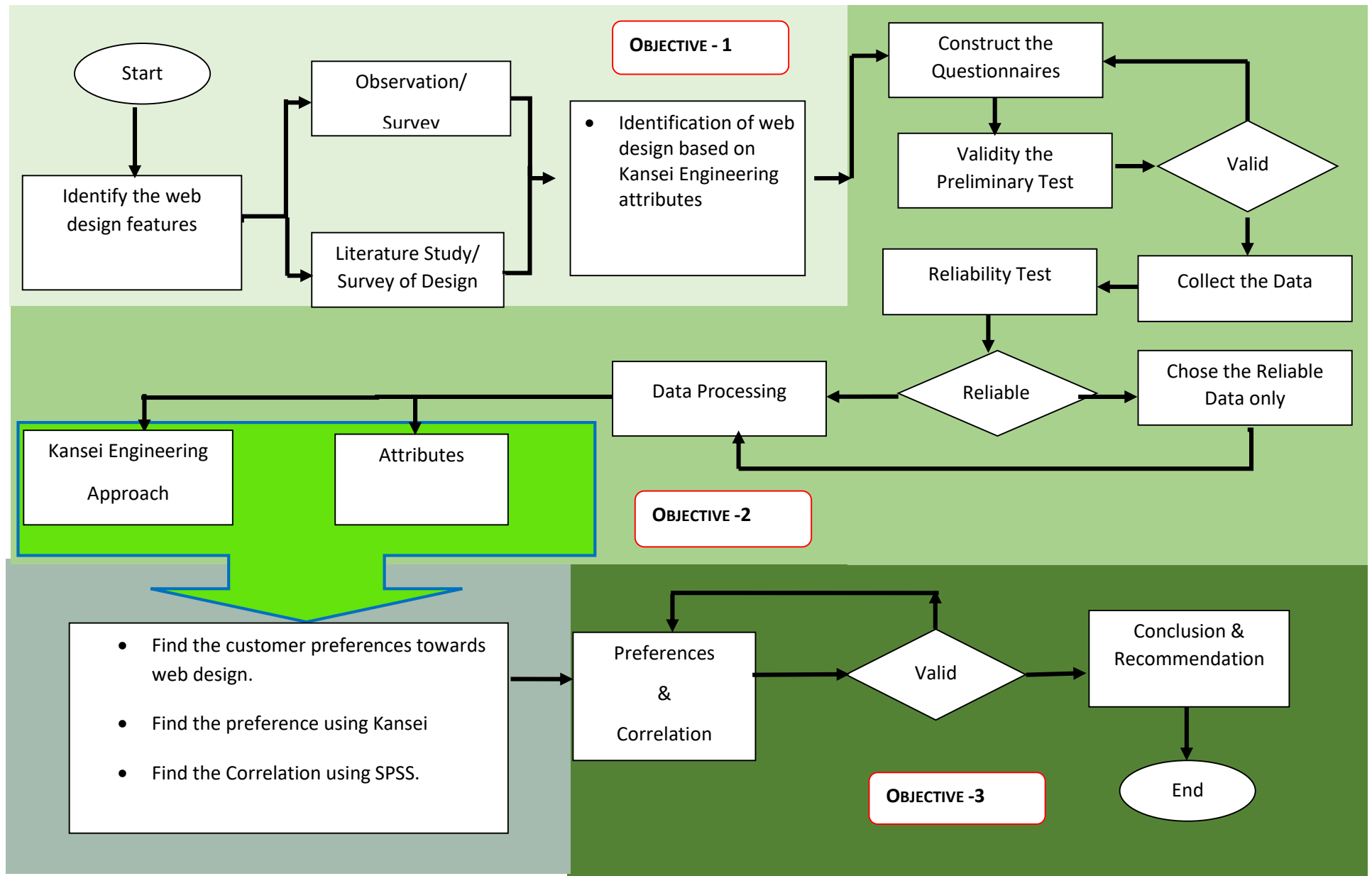


Figure 1.1: Framework of Objective

## **1.6 Summary**

This chapter discusses about the background of study, problem statement, objectives and scope of the study. This study focused on the quality improvement towards web design appearance for customer satisfaction. The approaches used in this study are Kansei Engineering and Kano method to determine the preference of customers for their satisfaction.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter it contains a review of literature that related to the scope of this study. Literature review is about search and evaluation of the available literature research based on specific issue or the chosen research area. For this literature review, the researcher will analyze the past research dependent on finding out about customer satisfaction, kansei engineering, and kano method. This chapter also will explore thorough publishes materials based on journal, thesis and some related papers readings. Last but not least, the component will be described in depth and being summarize the readings and findings at last for this literature review.

#### **2.2 Web Design**

The creation process of websites are called web design. In the web design it involves numerous aspects, including the layout of the website, creation of content and graphic design. The definition of web design and web development is often used interchangeably but web design is a branch of the larger group in web development. According to Affandy et al. (2016), we design challenges are ensuring that website

visual design referring to website visual aesthetics promotes positive overall usability and website performance. Visual aesthetic play a significant role as the visual appearance of the webpage strongly influence initial perception and user's subjective perceptions. Aro (2014) said that when designing a webpage, the most important principles are balance, harmony, rhythm, contrast, and repetition. Also, Lindgard *et al.*, (2006) stated web page appearance is the powerful factors in the user's first impression and experience.

Based on Garret *et al.* (2016) findings, there are about 20 distinct design elements commonly discussed that might have effects on the user engagement. Ease of use of program, information and service quality, website design quality and hedonic pleasure feelings contribute to the success of a website (Liu and Arnett, 2000). Flavian *et al.* (2009) approve this by mention that the website must be built with planned, imaginative, coherent, purposeful, and useful features to attract users and boost their visits to the website from a consumer perspective.

### **2.3 Visual Design**

Visual design is the use of images, colours, shapes, typography and shapes to improve usability and user experience. According to Affandy *et al.* (2016), web design challenges are ensuring that website visual design referring to website visual aesthetics promotes positives overall usability and website performance. Visual aesthetic play an important role as the visual appearance of the webpage strongly influence initial perception and user's subjective perceptions. A webpage's visual interest depends on the colours, forms and proportions were used and to achieve symmetrical harmony, the designed item should be positioned evenly.

## 2.4 Aesthetics

The term aesthetics, derived (to perceive) from the ancient Greek *aisthanesthai*, refers to a dynamic and complex set of human sensory perception relationships. According to Welsch (2003), as an explanation in art with special emphasis on beauty and as the founding father of aesthetics, Baumgarten developed the phrase 'aesthetics' by using Greek word-class *aesthesis*, *aisthanesthai*, *aisthetos* and *aisthetikos* that is expression that indicate sensation and perception before any artistic significance. In creating websites design, it should take account of aesthetic considerations (Tractinsky and Lowengart, 2007).

Thorlacius (2007) indicates that aesthetic play a significant role in supporting content and functionality, attracting target audiences and meeting the needs of the genre of the website. Therefore, aesthetics need to be implement when designing the webpage as the important part of the businesses image is webpage. The beauty appreciation is viewed as hard-wired and resilient in our genetic set-up and biological function is the aesthetic feeling fulfils (Schenkman and JoÈnsson, 2000)

Based on the ideas of, the powerful source for the impressions and reactions that customers have about an organization brand is aesthetics and a consolidated aesthetic identity must be the starting point for any effort aimed at gaining and retaining customers.

## 2.5 Customer Satisfaction

Customer can be defined as a person buying goods or receiving services from a business entity or service provider while satisfaction is you feeling pleasant when receive something that you want or the things you receive meets the expectation. Customer satisfactions refers to the customers have a good feelings when purchase and overall experience of the goods or services. Khadka and Maharjan (2017) proposed that customer satisfaction is a vital element of business success and at the same time, plays a really necessary role in raising the value of the market. Bhattacharjee (2001) support this by saying that satisfaction is the main driver for continued purchase purpose. Similarly, Noronha et al. (2017) stated there is a significant impact on customer satisfaction toward the intention to buy which the happy customer does seem to have greater likelihood of visiting the website and also have positive attitude than a partially dissatisfied customer.

The important factor of customer satisfaction is to understand what they need and want in order to satisfy customers. It is because the future repeat purchase intentions effected by customer satisfaction and they will the positive experience will be shared to other consumers (Li, 2013).Zeithal and Bitner (2003) pointed out that customer's emotional responses influenced the satisfaction. So customer satisfaction could be affected by particular goods or services features and quality perception (Khadka and Maharjan, 2017).