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USERS' BEHAVIOUR CONCEPT ON THE USAGE OF THE BICYCLE SHARING SYSTEM

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Abstract:

Bicycle sharing system is viewed as a customer-oriented concept where the behaviour of the users is a need for understanding. However, studies of such concept where are related to users' behaviour are limited thus leaving a gap of knowledge and practice in the area. Thus, this study is a concept paper that aims to determine users' behaviour framework on the usage of bicycle sharing system. The findings of this study have identified three elements from the aspect of perceived value and also three elements from the aspect of perceived ease of use which are associated to the user's behaviour framework. This study will encourage providers to increase the services based on the behaviour of the users.

Keywords: Bicycle Sharing System; Perceived Ease of Use; Perceived Value; Users' Behaviour.

1.0 INTRODUCTION

A bicycle sharing system (BSS) is a short-term rental service where bicycles are checked out from one docking station and returned to another and they have developed rapidly over the past two decades (Fishman et al., 2013). There have been three generations of bicycle sharing systems over the past 53 years. The 1st generation of bicycle sharing programmes began on July 28, 1965, in Amsterdam with the Witte Fietsen, or White Bikes. In 1991, the 2nd generation of bicycle sharing programme was born in Farsø and Grenå, Denmark, and in 1993 in Naskov, Denmark (Nielsen, 1993). The first of this new breed of 3rd generation bicycle sharing programmes was Bikeabout in 1996 at Portsmouth University in England, where students could use a magnetic stripe card to rent a bike. Figure 1 shows the evolution of bicycle sharing systems from the first to the third generation.

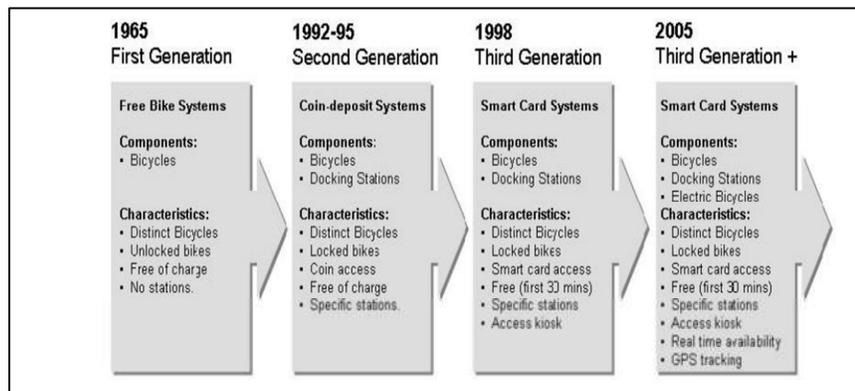


Figure 1: Evolution of bicycle sharing systems

Users' behaviour on bicycle sharing system usage is created from a combination of various aspects within the users' behaviour approach. Each aspect played an essential role in this combination and used at users' behaviour concept with the aim of generating a series of positive behaviours, such as a positive attitude, adoption intention, continued use behaviour, satisfaction and loyalty (Kuo et al., 2009). The aspects of this research are used to fulfil the primary perceptions of users' desire to utilize bicycle sharing system.

Hence, what are the aspects and elements that form the foundation of users' behaviour? With the wide usage of smartphones and the good access to mobile internet, the use of the bicycle sharing applications (apps) has attracted scholarly and industry attention in recent years in Malaysia. Link Bike has started its operation in December 2016 in Penang (The Star Online, 2016) and this has made Penang as the pioneer state of bicycle sharing system implementation in Malaysia. Meanwhile, Singapore bicycle sharing, oBike, was launched in Klang Valley venture in April 2017 (New Straits Times, 2017) followed by China bicycle sharing, ofo, launched in Malacca in August 2017 (Vulcan Post, 2017). The last company which had made its move on bicycle sharing system is Mobike which was started in September 2017 in Shah Alam and Cyberjaya. The implementation has given different perceptions as well as creating various attitudes and behaviour among users.

Since the bicycle sharing system is a new feature in Malaysia, studies on bicycle sharing system especially users' behaviour are limited due to the lack of research in the form of literature and frameworks which has left a wide gap of knowledge in this area. An initial study such as this is necessary as an introduction and new insight to understand the concept of users' behaviour towards the usage of bicycle sharing system. In line with this, the objective of this study is to determine the users' behaviour framework towards the usage of bicycle sharing system.

2.0 THE ASPECTS TO MEASURE THE USERS' BEHAVIOUR

The relevant literature was summarized on the factors and defining the basic elements which influence users' behaviour towards the usage of bicycle sharing system. The two aspects that have been identified in the users' behaviour framework are:

2.1 Customer perceived value

Customer perceived value (CPV) theory was introduced by Zeithaml (1988), which defined CPV as the overall evaluation of the benefits of the product or service that the customer can perceive, and the trade-off between the gain and the cost of the product or service. Most of the scholars divide CPV into two dimensions which are utilitarian value and hedonic value (Chiu et al., 2014). There are also some scholars who have divided CPV into three dimensions which are utilitarian value, hedonic value and social value (Zhang et al., 2017). Besides that, some scholars expressed CPV through cognitive and emotional value (Yang & Lin, 2014).

In recent years, many scholars have applied the theory to the study of consumer behaviour. They found that once the customers have the customers perceive value, they will generate a series of positive behaviours, such as a positive attitude, adoption intention, continued use behaviour, satisfaction and loyalty (Kuo et al., 2009). For this study, the researchers used CPV theory regarding utilitarian value, hedonic value and social value to clarify how visitors' perceptions of value effects their behaviour. In users' behaviour concept on the usage of the bicycle sharing system, the following attributes are used:

- i. Users' perception on usefulness of the bicycle sharing system.
- ii. Users' perception of the excitement when using the bicycle sharing system.
- iii. Users' perception of the social approval to the usage of the bicycle sharing system.

2.2 Perceived ease of use

Perceived ease of use is regarded as the scope to which a person believes that utilizing a bicycle sharing system would be effortless (Davis, 1989; Lee et al., 2013). Radner and Rothschild (1975) describe the definition of perceived ease of use as the degree to which a person believes that using a particular system would be free of effort which follows from the definition of "ease" which gives the meaning of "freedom from difficulty or great effort." The effort, on other hand is a finite resource that a person may allocate to the various activities for which he or she is responsible and finally, all else being equal where an application perceived to be easier to use than another is more likely to be accepted by users (Radner & Rothschild, 1975).

Previous studies have exhibited that perceived ease of use produces a positive effect on users' behavioural intentions (Lu et al. 2007; López-Nicolás et al. 2008; Featherman et al. 2010; Ooi et al. 2011; Pai & Huang 2011; Constantinides & Lorenzo-Romero 2013). The importance of perceived ease of use is supported by Bandura's (1982) extensive research on self-efficacy which she defined as judgments of how well one can execute courses of action required to deal with prospective situations. In users' behaviour concept on the usage of bicycle sharing system, the following attributes are used:

- i. Users' perception of ability within time, distance and utilization.
- ii. Users' perception on technology and language barriers.
- iii. Users' perception on the weather and risk factors.

3.0 METHODOLOGY

The literature is related to behaviour within the fields of bicycle sharing system, human management and recreation management. Relevant literature was found through universal library search engine which is Google Scholar and search engine for global publisher linking research and practice, Emerald Insight. The snowball method is also used from the references in the literature. Examples of the key words that were combined and used to find relevant literature are 'bicycle sharing system', 'users' behaviour', 'perceived value' and 'perceived ease of use'. The literature related to 'users' behaviour' or other forms of the word was then examined. Consideration was looked through the kinds of aspects, elements and processes that were related to behaviour. In total, about 23 publications of literature were reviewed. A conceptual framework was drawn up to show how the users' behaviour was clarified. The aspects from the users' behaviour was analysed through comparison from several literature within each field of knowledge. This concept paper is a first attempt to generate the 'users' behaviour' term which deals with the bicycle sharing system.

4.0 ANALYSIS AND FINDINGS

This concept paper has been described extensively on research background and factors that are relevant to the bicycle sharing system. Therefore, despite being an initial study, this research has identified the aspects that form the users' behaviour framework. These aspects represent the elements of utilitarian value, hedonic value and social value through a perceived value approach as well as elements of physical ability, cognitive skill and perceived difficulty from the perceived ease of use approach (refer Figure 2). Though the study did not employ empirical research, the interaction between elements in the aspect of perceived value and perceived ease of use (users' perception) forms its basis and paves the way for more in-depth research on users' behaviour for the bicycle sharing system usage concept.

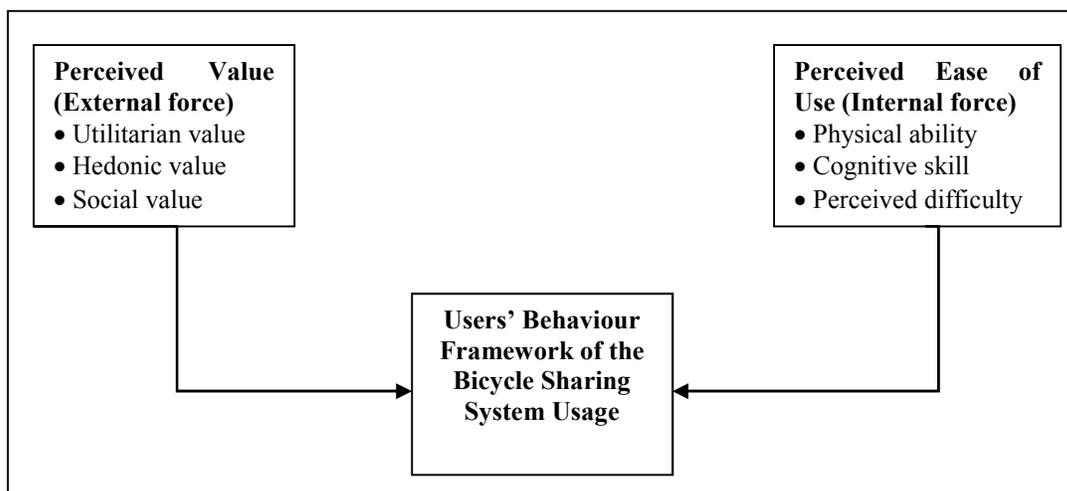


Figure 2: Users' behaviour framework of the usage of the bicycle sharing system

5.0 CONCLUSION

Users' behaviour on the usage of the bicycle sharing system is a concept used by relevant parties to improve bicycle sharing system services. Since the bicycle sharing system is a new feature in Malaysian life, there is still a scarcity of research in this field in the form of literature, theories, concepts, frameworks and indicators in the use of users' behaviour of bicycle sharing system usage. Hence, this has left a gap in knowledge and leaving unanswered question regarding the subject. The aspects regarding the perceived value and perceived ease of use in controlling the behaviour of the cyclists in the bicycle sharing system have been described based on the experience of a survey conducted by several researchers. From the previous scholars, it can be summarized that there are three values which have given the perception on the bicycle sharing users which are utilitarian value, hedonic value and social value. For the perceived ease of use, there are also three aspects which have been identified by the researcher which have been adapted from previous scholars that are relevant to this research which are physical ability, cognitive skills and perceived difficulty. This research enables the development of an effective strategy to maintain the services of the bicycle sharing system. In conclusion, it is important for researchers and bicycle sharing providers to understand the perceived value of cyclists and the perceived ease of use when the cyclists are using the bicycles. The perspective of the results of this study can be used to assist providers in developing strategic steps for the bicycle sharing system to maintain or possibly increase the service quality.

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