THE EFFECTS OF MODERATING VARIABLE OF ENVIRONMENT KNOWLEDGE ON THE INTENTION TO RE-USE OF PUBLIC TRANSPORTATION

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ABSTRACT

Nowadays commuting is a crucial point in modern activities. To supporting that commuting activities, a technology introduced and also applied in daily activities such as a car, motorcycle. Unfortunately, one negative side of it is the increasing of air pollution resulted from that commuting equipment. Further negative impacts, the weather cannot be predicted accurately again as a result of pollution piles that form the greenhouse phenomenon. The aim of this research is to investigate the influence of environment knowledge as a moderating variable to re-use public transportation.

To achieve that objective, this study used a questionnaire distributed to the passengers of Batik Solo Trans (BST) Bus, which is a state transport corporation that operates in Solo City. A total of 207 participants were selected by purposive sampling method by filled out a set of the questionnaire designed to collecting data. After being analyzed by SEM (GeSCA), the result shows that the travel time efficiency effects on satisfaction and also affects the service value. Furthermore, the satisfaction influences the intention to re-use and the environment knowledge variable moderates the relationship between satisfaction and intention to re-use.

At the end of this article, the implications of the study are discussed as well limitations.

Keyword: Satisfaction, re-use, public transportation

1 BACKGROUND

Indonesia is one country whose inhabitants rely on private transport mobility. It is indicated the large number of vehicles owned population, i.e. more than 90 million units. The negative impact of the use of motor vehicles is increasing air pollution. Based on the study, every 1 liter of gasoline consumed motor vehicle, releasing 3 kg of carbon emissions or greenhouse gasses into the air (Santoso 2013). This condition means that transportation technology donated impact on climate change through the greenhouse effect. Therefore, efforts to suppress the use of motor vehicles have become important. One strategy to overcome that problem is through green environment campaign.

The study of the influence of the environment focuses on consumer consciousness (Kim and Chung 2011) and also the environmental knowledge. However, a study of environmental knowledge has not been widely exposed. Analysis of knowledge is important because these

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variables are variables that are easier to be "created" in the perception of the individual compared to the consciousness variable.

In addition to knowledge, service value is an important part examined in the analysis of public transport. Service value suspected to be a variable that analyzed consumer when making the decision to use private transport or public transport. Service value is the overall consumers' assessment of the benefits gained by the perception of what is acceptable and what is given (Zeithaml 1988 in Lai and Chen 2010).

Variable service value is one of the variables that have an impact on the formation of satisfaction and intention to reuse (Sumaedi, Mahatma, Bakti, and Yarmen 2012). Satisfaction becomes an important study because these variables are antecedent of intention variable (Jen and Hu 1999; Lai and Chen 2010; Yaakub and Napiah 2011)

On the other hand, travel time efficiency becomes one of the considerations for passengers in evaluating public transportation. Since this variable is evaluated by passengers as a perception in mind, thus as a result this variable is predicted as an antecedent of the service value and satisfaction.

This study aimed to analyze the variables that affect the intention of re-use of public transportation. Furthermore, environmental knowledge variable studied with regard to its moderation effect on the relationship between satisfaction and the intention of re-use of public transportation. The Setting of this research is in Solo city with respondents who are Passengers of Batik Solo Trans (BST) bus which is a transport model designed to provide more comfort than other public buses.

2 LITERATURE REVIEW

Behavior intention becomes an interesting study, according to the theory stated every consumer's decision was preceded by that variable (Fishbein and Ajzen 1974; Ajzen et al. 2004; Hale, Householder, and Greene 1990). There are two main variables that usually form the intention variable, namely the attitude and satisfaction. In empirical shown that the pattern of behavior with the intention of referring to the effects of the initial perception of a non-hand experience (Fishbein and Ajzen 1974; Wu and Liu 2007), while pattern-satisfaction is the intention to effect a direct experience of items. This study examined patterns of satisfaction-intent.

Satisfaction is the main point when evaluating the customer's perception after purchase. Although, relationships among satisfaction and repurchase intention (intention to re-use) can be strengthened or weakened by variables, namely a moderating variable. Thus, it is interesting to test the effect of environmental knowledge as a moderating variable. In addition, this research examines relationships among travel time efficiency, service value, satisfaction and intention of re-use of public transportation too.
2.1 Travel Time Efficiency

Travel time refers to how long an individual spent their time for traveling (Hartmann and Hietbrink 2013). In this study, travel time efficiency means how long passengers spend their time on the bus (BST). Travel time variable is important to commuter since increasing travel time has a negative effect on satisfaction (St-Louis et al. 2014)

H1: Travel time efficiency influences service value
H2: Travel time efficiency influences satisfaction

2.2 Service Value

Variable service value is a variable that compares the costs and benefits (Lee and Cunningham 2001 in Sumaedi et al. 2012). In line with the study from Taylor (1997) in Cronin, Brady, and Hult (2000) and also Sumaedi et al. (2012), the service value influences on satisfaction. The same finding, Lai and Chen (2010) state that service value influences on satisfaction.

H3: Service value effects satisfaction

2.3 Satisfaction

Satisfaction is the consumer valuation of expectations with what is acceptable (Khan 2012; Cong, Chuong and Hung 2013; Jung and Yoon 2012). Studies have been done on this variable, in empirical proved that satisfaction is a good predictor of the consumer behavior, such as the intention to act (Hor-meyll and Ferreira 2011; Sumaedi et al. 2012).

H4: Satisfaction affects the intention to re-use

2.4 Intention

The intention is an individual’s motivation that showed how strong the desire to try and how much effort is planned to lead to real action (Ajzen 1991). Review of the literature indicates that the intention is dependent variable (Cronin et al. 2000; Sumaedi et al. 2012; Yaakub and Napiah 2011).

2.5 Environment Knowledge

Knowledge refers to the specific understanding of the issues involved, in this case, the environment (Flamm 2006). Knowledge is a cognitive alleged effect on satisfaction. Environment knowledge indicates how far the individual understands the environmental issues associated with transport. Hausbeck, Milbrath and Enright (1992) indicate that environmental knowledge is variable considerate in assessing an object, especially the impact on the environment.
H5: Environment Knowledge moderate the relationship between satisfaction and intention to re-use

2.6 Research Model

![Research Model of intention to re-use of public transportation](image)

Figure 1 indicates that the individual’s intention influenced by satisfaction. In addition, service value as consumer considerations in the evaluation of services be predicted has impact to satisfaction. While, travel time efficiency has an impact to service value and satisfaction. Finally, environment knowledge is a moderating variable.

3 METHODOLOGY

This research is causal study category that examines the relationship among variable in research model that be constructed. Respondents are passengers of Batik Solo Trans (BST) bus chosen by purposive sampling. That sampling method chosen because the respondents have to pass the specific criteria that have the intention to take the BST again in the future.

3.1 Instrument Testing

This survey uses the instrument to collect data where that instrument taken from the previous study. There are 6 variables and 5 dimensions, that variables are travel time efficiency, service quality, service value, satisfaction and intention to re-use while that dimensions of service quality developed by exploratory research and also adopted by previous research conducted by Lai and Chen (2010) and Sumaedi et al. (2012). Confirmatory Factor Analysis (CFA) is used to test the validation of questionnaires by cut off of factor score more than 0.4, while Cronbach Alpha measures the reliability of questionnaires by rule of thumb more than or equal 0.6.
3.2 Hypothesis Testing

To examine the hypotheses formulated, SEM GeSCA is applied. The hypothesis is not rejected if the score of Critical Ratio (CR) more than or same 1.96 in significant 5%.

4 RESULT

A total of 300 questionnaires were distributed to respondents and 100% of them were received by the researcher. Although the response rate is 100% but 6 questionnaires cannot be analyzed since it is not filled completely. Table 1 describes the respondents’ profile.

<table>
<thead>
<tr>
<th>Table 1. Respondents Profile</th>
</tr>
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<tbody>
<tr>
<td>Explanation</td>
</tr>
<tr>
<td>GENDER</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Junior High School</td>
</tr>
<tr>
<td>Senior High School</td>
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<tr>
<td>Under Bachelor</td>
</tr>
<tr>
<td>Bachelor</td>
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<tr>
<td>Master</td>
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<tr>
<td>Status</td>
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<tr>
<td>Family</td>
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<tr>
<td>Single</td>
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</tbody>
</table>

Based on the profile of respondents (Table 1), it was dominated by students. These results indicate that the participants have a high level of education. In addition, based on the marital status of the respondents of this study the majority of a group of single (not married yet) so that it can represent a group that has a mobility (transportation use) are high enough. By gender, women dominate the use of public transport in this study. Overall, the profile of respondents indicated that public transportation users are groups of people who have a high mobility.

4.1 Instrument Testing

All data have to pass the validation and reliability testing before being analyzed using SEM GeSCA. The result shows that after be examined by confirmatory factor analysis (CFA), all item of this questionnaire reach the rule of thumb which is more than or same 0.5 of factor loading. Thus, items of a questionnaire are valid. Furthermore, the result of reliability testing is all variables and dimensions have Cronbach alpha more than or same 0.6. It means this questionnaire have high consistency in measurement.

4.2 Hypothesis Testing.

The result of SEM GeSCa indicates that all hypotheses are not rejected. Table 2 describes it.
Table 2. Hypotheses Testing

<table>
<thead>
<tr>
<th>Path Coefficients</th>
<th>Estimate</th>
<th>SE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel time → service value</td>
<td>0.366</td>
<td>0.058</td>
<td>6.29*</td>
</tr>
<tr>
<td>Travel time → satisfaction</td>
<td>0.299</td>
<td>0.069</td>
<td>4.35*</td>
</tr>
<tr>
<td>Service value → satisfaction</td>
<td>0.392</td>
<td>0.060</td>
<td>6.5*</td>
</tr>
<tr>
<td>Satisfaction → intention</td>
<td>1.016</td>
<td>0.246</td>
<td>4.12*</td>
</tr>
<tr>
<td>Envi Knowledge → Intention</td>
<td>0.843</td>
<td>0.261</td>
<td>3.23*</td>
</tr>
<tr>
<td>Sat*Envi Knowledge → Intention</td>
<td>-0.932</td>
<td>0.377</td>
<td>2.48*</td>
</tr>
</tbody>
</table>

Envi Knowledge: Environmental Knowledge; SE: Standard Error; CR: Critical Ratio

According to table 2, it can be concluded that:

H1: Travel time efficiency influences service value

H2: Travel time efficiency influences satisfaction

Based on the output of GeSCA (Table 2) those hypotheses are not rejected since the CR score of H1 and H2 are 6.29 and 4.35 respectively. They are more than 1.96. It means the higher efficiency of travel time will increase the satisfaction and also service value received by customers.

H3: Service value effects to satisfaction

It is obvious that this hypothesis is not rejected because the CR score is 6.5 (higher than rule of thumb 1.96). It indicates that if service value increases the customers’ satisfaction will increase too.

H4: Satisfaction affects to intention to re-use.

Based on CR score, this hypothesis is not rejected since the CR score (4.12) is more than the rule of thumb (1.96). It shows that intention to re-use will increase when a company can create the high satisfaction of customers.

H5: Environment Knowledge moderate the relationship between satisfaction and intention to re-use

The last hypothesis shows that environment knowledge will weaken the relationship of satisfaction and intention to re-use. It is concluded from the CR score that more than 1.96 but the estimate value is negative.

5 CONCLUSION

The intention to re-use public transportation is influenced by the satisfaction of passengers. Furthermore, travel time efficiency and service value are a good predictor of satisfaction. However, the environmental knowledge moderate relationship between satisfaction and intention to reuse in a negative impact. It means more knowledgeable required in seeking more about the green transportation.
REFERENCES


