

The Effect of the Diffusion of University Website Innovation on Student Behaviour of State and Private Universities: A Comparative Study

Abdurachman, E.¹ and Sriwardiningsih, E.^{2*}

¹*Department of Doctoral Research Management Strategy and Growth, Bina Nusantara University, Jakarta 11480, Indonesia*

²*School of Business Management, Bina Nusantara University, Jakarta 11480, Indonesia*

ABSTRACT

This research aims to investigate the diffusion level of website innovation by the students. The objective is to find out whether student satisfaction is an intervening factor in adoption behaviour. The research model is applied on two groups, one at the State University, the other at a Private University, in Jakarta and West Java. The data is analysed using Structure Equation Model using Wrap PLS. The results show that overall, the relationship between variables in the Private Universities is stronger than in State Universities suggesting students in the Private University are more diffused by innovation than those in the State University.

Keywords: Diffusion of Innovation, Satisfaction, Website Service, Consumer Behaviour

INTRODUCTION

Student innovation diffusion behavior is based on their role in searching, observing, acquiring and evaluating the university's website. Information about campus activities or is expected to be on the campus website. Observations on the website informs its acceptance by students. The acquisition of information through lectures, academic activities, and other information sources informs student innovation. Evaluating the campus website campus is also part of student behaviour.

Each individual activity will have an impact on the feelings of the individual, a college education should provide satisfaction for students who can be seen as consumers of education. Universities are therefore encouraged to improve their services and

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E-mail addresses:

edia@binus.edu (Abdurachman, E.),

enggalnabeel@yahoo.com (Sriwardiningsih, E.)

* Corresponding author

an innovative website can help to provide faster service and up to date information needed by students (Sravanthi, 2013).

Another advantage of an internet based website is its role in providing information, teaching materials among other things. They can be delivered to all students and reduce the limitations arising from administrative deficiencies and shortage of lecturers (Herawati et al., 2008; The Ministry of College Education, 2012). Internet can improve communication between students and campus staff and have better innovation diffusion impacts (Rogers, 2003). The effect of innovation on consumer behaviour is visible from the liveliness of such individuals to always use these innovations in daily life or habits, therefore the service via the internet must be in accordance with their needs (Schiffman & Kanuk, 2010). The process of optimum innovation diffusion will be achieved if the factors affecting the adoption are fulfilled (Kotler & Keller, 2012).

In Indonesia according to one survey (Kompas.com, 2012) students prefer to use the website for online gaming rather than for learning, thereby suggesting student self-motivation and student satisfaction are relatively low (Herawati et al., 2008; The Ministry of College Education, 2012; Sriwardiningsih, 2014).

The questions asked in this research relate to the quality of website service in universities in Indonesia in providing student needs.

It aims to examine the diffusion level of website innovation by students and find out whether the student satisfaction

can be an intervening factor on adoption behaviour. There are seven hypotheses to be tested in this study,

H1: Student satisfaction on website service has positive impact on student adoption behavior of innovation.

H2: Website service has positive impact on student adoption behaviour of innovation

H3: Website service has positive impact on student satisfaction

H4: Student motivation to use internet significantly affecting student adoption behaviour of innovation.

H5: Student motivation to use internet significantly affected student satisfaction on website service.

H6: Internet literacy has positively significant positive impact on student adoption behaviour of innovation.

H7: Internet literate has negatively significant impact on student satisfaction

LITERATURE REVIEW

The Consumers Behaviour Diffused by Website Innovation

Consumer behaviour concept combined with the diffusion innovation theory (Ajzen, 1991) is used to analyse consumer behaviour affected by website innovation adoption. Innovation diffusion concept refers to the involvement of innovation for individual activity or behaviour. Innovation diffusion of website services on individuals might have positive affect on the behaviour of the website user, such as repeating visit to the same website. This means, the user is willing to adopt the website technology.

(Goldsmith et al., 1995; Steenkamp, 1999; Weiner, 2000; Zeithaml et al., 2002; Collier & Bienstock, 2006). It is possible also to make negative effect, the user will hesitate to revisit the website, the users do not adopt the website technology (Rogers, 1995; Grant, 1996; Venkatesh, 2006; Collier & Bienstock, 2006).

Based on previous research, Rogers emphasises that consumer characteristics such as innovators, early adaptor, early majority, early adopters, and laggards determine innovativeness (Gatignon & Robertson, 1985; Wright & Esselemont, 1994; Steenkamp, 1999; Pindyck & Rubinfeld, 2012). His further empirical research showed that the consumer characteristic sometimes is inconsistent. In certain social environment, in the era of technology development, consumers tend to be innovative (Rogers, 2003; Schiffman & Kanuk, 2010).

The relationship between consumers and service provider will be strength if the consumer need is optimally fulfilled (Sheth & Parvatiyar, 1995; Kotler & Armstrong, 2012). The result of this research is expected to have benefit for university management in in designing and developing an excellent website service that would support the learning process.

The Consumer Satisfaction

The concept of consumer satisfaction indicates Many factors are expected to influence the students' satisfaction (Steenkamp, 1999; Kotler & Keller, 2012), among others are the perceived benefits

in accordance with expectations, positive recommendation and repeat behaviour (Deci & Ryan, 2008; Kotler & Keller, 2012).

The Motivation

Motivation of consumer self-control is one where self-control consists of autonomous, ability and social. Environment can also influence consumer motivation (Gagne et al., 2010; Miles, 2012).

The Internet Literacy

The Internet is a network that connects millions of global information network to be more beneficial for the users (Turban & Cable, 2003; O' Brien & Marakas, 2008), in which the Internet is a computer network growing rapidly to meet the needs of business, education and other industries (Haag, 2005). The Internet is communication network spread out to the whole world through Local Area Network (LAN) or Internet Service Provider (ISP). The services are provided anywhere and anytime, there is no restriction in term of space, distance and time (Eisenberg, 2008; Strauss & Frost, 2011).

There are many definitions of information literacy: (a) Visual literacy is understanding and using images for visual learning, visual thinking and visual communication; (b) Media literacy is able to access, to analyse and to produce information for a specific result; (c) Computer literacy is able to create and to manipulate documents or data with the help of word processing software, database, and so on; (d) Digital literacy is the mastery of the source and digital devices; (e) Network literacy is a term

that still developing, which able to access, to locate and to use information in the world of networking (Kogut and Zander, 2003). The Internet literacy contains information, consumer comprehension to seek and to get the benefit from the internet (Adler, 2001) and distribution of information knowledge in the social media (Castro et al., 2011). Every individual should have the ability to manage information (Hair et al., 2010).

METHODOLOGY

Data consists of qualitative and quantitative data. Qualitative data obtained through interviews and focus group discussion. Quantitative data are obtained via survey using questionnaire with 5 points Likert scale. The respondents are academic practitioners. Secondary data is obtained from the internet access and from the Ministry of Education, Indonesia. The data analysis used is Structural Equation Model Varian or Partial Least Square (Kock, 2012). The tool for analysis used is Warp PLS 4.0 program (Lindell & Whitney, 2001). The questionnaires have been distributed through online and directly to the randomly selected students. The sample size of the online respondents is 317 from two selected universities and from directly interviewed respondents are 274 that came from six selected universities. The respondents were students, who are users of the university website service at least has been one semester at the campus. Questionnaires were distributed randomly from the selected universities.

ANALYSIS AND RESULT

The suitability of overall models for both groups (State Universities and Private Universities) are fulfilled. They meet the three requirement categories namely Average Path Coefficient (APC), Average R-Square (ARS), and Average Variance Inflation Factor (AVIF). The model test qualifies compatibility (fit) and can proceed to the next test. The model with the value of the variance inflation factor or AVIF < 5 showed no multi collinear between indicators within the latent variables (lateral collinear) and between the latent variables (classic collinear) in the model. All the AVIF values are < 5 which indicating there are no multi-collinear. The p-value for APC and ARS values are < 0.05, it indicates coefficients path of the variables in the model are stable (Lindell and Whitney, 2001; Ji and George, 2008).

Outer models for both model groups have high convergent validity values and they are closely associated with the latent variables with a significant p-value < 0.05 and high discriminant validity value with high AVE value. In addition, the value of the composite reliability coefficient (CR) and the value of Cronbach's alpha coefficient should be ≥ 0.7 (Lindell & Whitney, 2001; Kock, 2012).

The comparison of the relationship strength between two variables in the model, for the State Universities and the Private University is presented in Table 1.

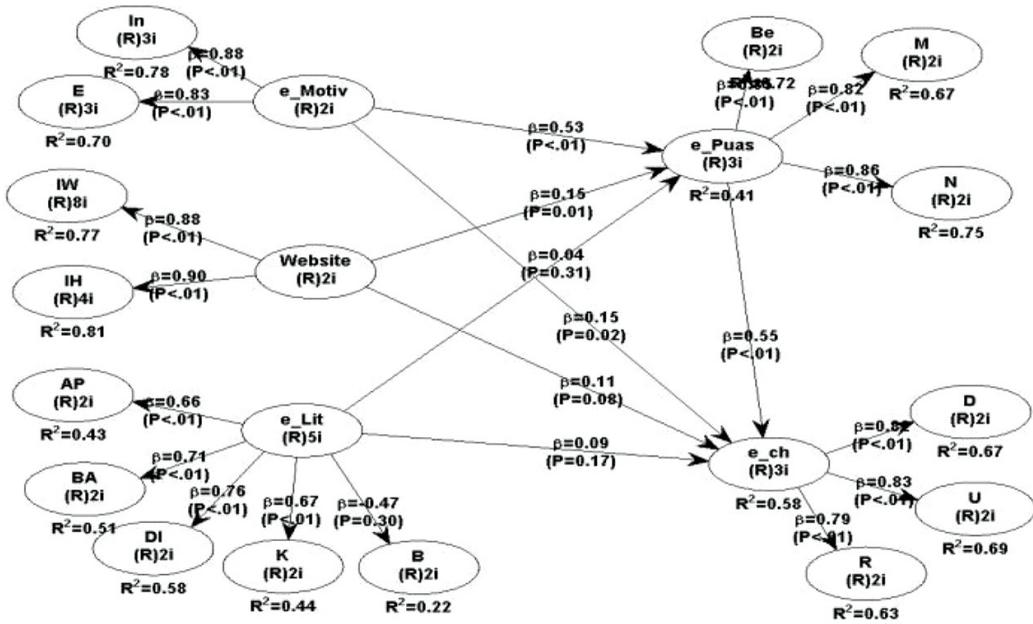


Figure 1. The Path Diagram for The State University

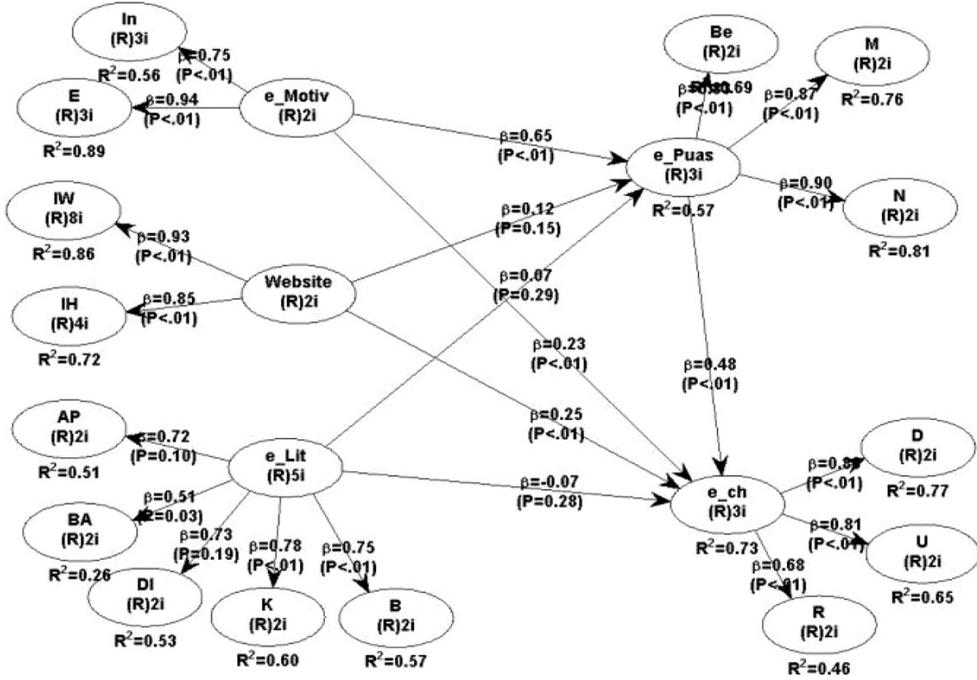


Figure 2. Path Diagram for The Private University

Table 1
Estimated Path Coefficients and Significance Test Result

Hypothesis	State Universities β (P value)	Private Universities β (P value)
H1: Student satisfaction on website service has positive impact on student adoption behaviour of innovation.	$\beta = 0.55$ $p < 0.01$	$\beta = 0.48$ $p < 0.01$
H2: Website service has positive impact on student adoption behaviour of innovation	$\beta = 0.11$ $p < 0.01$	$\beta = 0.25$ $p < 0.01$
H3: Website service has positive impact on student satisfaction.	$\beta = 0.15$ $p < 0.01$	$\beta = 0.12$ $p < 0.01$
Student satisfaction significantly intervening relationship between website services and student adoption behaviour of innovation	$\beta = 0.193$ $p < 0.01$	$\beta = 0.309$ $p < 0.01$
H4: Student motivation to use internet significantly affecting student adoption behaviour of innovation.	$\beta = 0.15$ $p < 0.01$	$\beta = 0.23$ $p < 0.01$
H5: Student motivation to use internet significantly affected student satisfaction on website service.	$\beta = 0.53$ $p < 0.01$	$\beta = 0.65$ $p < 0.01$
Student satisfaction has a significant role as intervening variable between student motivation and student adoption behaviour of innovation.	$\beta = 0.440$ $p < 0.01$	$\beta = 0.541$ $p < 0.01$
H6: Internet literate has positively significant positive impact on student adoption behaviour of innovation.	$\beta = 0.09$ $p = 0.17$	$\beta = -0.07$ $p = 0.28$
H7: Internet literate has negatively significant impact on student satisfaction.	$\beta = 0.04$ $p = 0.31$	$\beta = 0.07$ $p = 0.29$
Student satisfaction of website service has significant role as intervening variable between Internet literate and student adoption behaviour of innovation	$\beta = 0.15$ $p = 0.125$	$\beta = -0.035$ $p = 0.400$

The study finds that student adoption behaviour of website innovation is higher for Private Universities ($R^2=73\%$) compare to that of State Universities ($R^2= 58\%$). The student adoption rate of the innovation of website services tends to be higher for the student in Private Universities than for the student at State Universities. This case might due to the student ethos of students of Private Universities to study face to face regularly in the class is not as high as that of student who studies in the State Universities. Since most of Private Universities student are working student, then they prefer to study through

internet rather than directly learning in the class. This shows that website innovation adoption by student is different between the two group universities (Ajzen, 1991; Steenkamp, 1999; Chin et al., 2003; Laudon & Laudon, 2005; Belanche et al., 2011). In general, the relationship among variables is stronger in Private Universities case compare to that of the State Universities. Almost all of the estimate of β coefficients for Private Universities are larger than that of State Universities, except for Hypothesis-3. For the relationship stated in Hypothesis-6, for both group are not significant.

There are many reasons why students adopt the website innovation. This might be seen from the value of R^2 of the dimension constructed this latent variable. The dimensions are:

- First, push factor of the stimulant and the up-to-datedness of learning process on campus (D) with $R^2 = 0.67$ for State Universities and $R^2 = 0.77$ for Private Universities. This dimension has very strong effect on the student adoption especially for Private Universities with $R^2 > 0.67$ R^2 (Roehrich, 2004).
- Second, is the uniqueness of borderless learning method with $R^2 = 0.69$ for State Universities and $R^2 = 0.67$ for Private Universities. The third is access to learning process with R^2 of 0.63 for State Universities of 0.46 for Private Universities. Therefore, the three dimensions have relatively strong effect in constructing the student adoption behaviour of innovation (Anderson and Sullivan, 1993).

Student satisfaction on Internet endogenous variable

The study reveals that student satisfaction on website innovation for State Universities student ($R^2 = 0.41$) is higher compare to that of Private Universities student ($R^2 = 0.57$). The fact that most Private Universities students are working student, they prefer to use internet for all study purposes during their valuable time. They can then, use other available time for doing their task outside of study process. This show that there is a

dominant factor contributing to the consumer satisfaction, which in this case is student satisfaction of the campus website services. In this modern era, marketing orientation more heavily depend on consumer satisfaction. The student emotion and behaviour after using the website service is very important (Sheth & Parvatiyar, 1995). Industries not depending on large scale mass production any more, but they switch their focus on consumer satisfaction.

The three dimensions have a very strong impact on student satisfaction. This supports the conceptual of modern marketing orientation that uses technology innovation as a tool to increase consumer satisfaction (Sheth & Parvatiyar, 1995). The satisfaction felt by the consumers after they receive services (Sheth & Parvatiyar, 1995; O' Brien & Marakas, 2008) is the same with what they are expected (Anderson & Sullivan, 1993). This research indicates the importance of measuring the consumer satisfaction so the service provider knows how good and how suitable their services (Sheth & Parvatiyar, 1995; O' Brien & Marakas, 2008; Schiffman & Kanuk, 2010).

CONCLUSION

The adoption behaviour on website innovation among students at State Universities is different from those in Private Universities. The Private Universities student diffusion rate is higher than in State Universities. In addition, the student satisfaction has a significant role as an intervening variable. This result supports marketing theory.

Implications

This study contributes to the theory of consumer behaviour in the face of globalization and technological innovation. Innovation diffusion theory contribute greatly along with the development of Internet technologies globalization in the form of website services in a variety of industries. Consumers are willing to adopt innovations in the form of repeated behaviour can be regarded as well as customer loyalty. Several factors will affect customer satisfaction and service for example motivation interactive website.

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