

A Comparative Consumer Behaviour were Diffused by Innovation Website: The Online Students and The Regular Students

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ABSTRACT

The purposes of this study was to determine the scale of diffusion of innovation websites in consumer behaviour of two different groups, online and regular students. Previous studies showed that interactive website service, motivation to use the website, Internet literacy and user satisfaction were related to consumer behaviour. Therefore, this research considered user satisfaction as an intervening variable. Analysis of the six hypotheses used the Structure Equation Model with the analytical tool, WrapPLS, for both groups. The respondents were sampled from online students, numbering 274 respondents from two universities and regular students numbering 317 respondents from six universities. The results show that the online student's behaviour was diffused more by the innovation of the website rather than that of the regular students. Furthermore, student's satisfaction served as an intervening variable, which means that student's satisfaction is a must for universities to consider. Moreover, data provided by the online students showed that website interaction for student behaviour was not significant. The student behaviour was not significant to the scale of diffusion of innovation website. The five other hypotheses support the theory of diffusion innovation on consumer behaviour.

Keywords: Comparative, consumer behaviour, diffuse, innovation website, online students, regular students

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INTRODUCTION

Consumer behaviour includes patterns of purchasing, evaluating and disposing of products and services that consumers expect will satisfy their needs (Schiffman & Kanuk, 2010). Globalisation has brought consumer behaviour to the Internet. An

approach is successful if consumer needs can be related to consumer wants (Sheth & Parvatiyar, 1995; Kotler & Armstrong, 2012). Globalisation of the economy has enabled companies to operate in various sectors of the global market. The global market is moving rapidly because of the Internet. The use of the Internet has become wide spread through a number of technological innovations, one of which is the presence of website service. The service is currently an intensively used website marketing tool to seize opportunities. The service company's website can be used as an opportunity to serve and develop a close relationship with consumers. Consumers can be asked for feedback. If consumers' desires are fulfilled, they are likely to become repeat customers because they have experienced high satisfaction (Sheth & Parvatiyar, 1995; Kotler & Armstrong, 2012).

Research into the behaviour of consumers in adopting the service website is important. The adoption process of website services by consumers can be achieved if customer satisfaction is met (Kotler & Armstrong, 2012). The satisfaction of consumers is influenced by many factors (Kotler & Armstrong, 2012). Many companies fail to identify these factors. Identifying what these factors are is very important for companies, and this is a good reason to measure customer satisfaction. The results of this study are expected to encourage universities to provide website services that meet the needs of their students.

Globalisation emphasises the importance of technological innovation in

consumer behaviour theory and the theory of diffusion of innovation. Globalisation has made innovation diffuse in the service website in a variety of industries, not least the education industry in many parts of the world. Consumers are willing to adopt innovations in the form of repeat behaviour, and this can be regarded as customer satisfaction. Innovation affects how customers behave as well as how they do not behave (Rogers, 2003; Sahin, 2006; Deibel, 2011). Diffusion innovation is the understanding consumers receive on how to use innovation. Acceptance of the diffusion of innovation is not easily achieved. The process of diffusion of innovation is communicated all the time in certain social communities (Rogers, 2003). Diffusion of innovation can be defined as repetitive behaviour that describes consumer satisfaction in such technologies (Kotler & Armstrong, 2012).

Innovation may be a new idea, a new way, a new system or a new technology for the consumer or community. The Diffusion Innovation Model by Rogers is one application of the theory introduced 30 years ago. This model has been applied in a variety of disciplines such as politics, public health, history, economics, technology and education. Some of these fields were quick to accept the innovations but some were slow to accept them. The effect of the adoption of this dynamic website services is constantly changing all the time and cannot be predicted (Rogers, 2003). Rogers (2003) stated that consumers experience the process of adopting an innovation decision

in several stages: knowledge, persuasion, decision, implements, confirmation and adoption. Through these stages a customer makes a decision for adoption or not of an innovation. The concept of diffusion of innovation emphasises how these innovations can be adopted by consumers and how adoption can be spread to other potential adopters (Roehrich, 2004; Deibel, 2011; Sriwardiningsih, 2015). Consumer behaviour diffuses innovation if the consumer repeats use of the innovation (Kotler & Armstrong, 2012). Innovation will diffuse consumer behaviour because of these characteristics: relative advantage (Rogers, 2003; Deibel, 2011; Sriwardiningsih, 2015), the need for compatibility (McKenzie, 2001; Hoerup, 2001), complexity (Martin, 2003), can be tested (Rogers, 2003; Sriwardiningsih, 2015), easily observed by others (Sriwardiningsih, 2015), freshness of information (Rogers, 2003) and uniqueness and communication (Rogers, 2003).

Consumer behaviour will be diffused by innovation of a website based on Internet use, which differs from individual to individual. The time it takes for an innovation to influence consumers can be long or short, and it can differ for individuals or communities. Innovation works as long as consumers use it and will not be useful if the consumer himself rejects it. It works unless the consumer is diffused (Schiffman & Kanuk, 2010).

The innovation of a website consists of hardware and software. Hardware is the physical example of technology services and software refers to its user requirement

to use the technology. According to Rogers, research in software of websites is slower than research in hardware, this is because software is more difficult to measure in terms of its attributes (Rogers, 2003).

The Internet is an innovative global tool of technology that has come to be applied in all fields of activity today. This diffusive tool can meet diffuse consumer needs. Websites can service a lot of consumers at the same time. This makes the use of websites a crucial and suitable tool for use in the field of education. Therefore, it is relevant to investigate the behaviour of consumers in the adoption of technology in education (Sahin, 2006; Deibel, 2011).

Data have shown an increase in student application to universities from year to year. An interesting fact is that students who enter universities in Indonesia are not only recent high school graduates, but also from working adults. Their goal is to seek knowledge and skill that will hopefully improve their human capital (Central Bureau of Statistics Indonesia, 2012). The ratio of lecturer to students is low. This imbalance causes its own difficulties for the lecturer having to repeat the same material in different classes, so fatigue is a common complaint among lecturers, and tends to make their teaching ineffective (Ministry of College Education, 2012). Such conditions can be bridged with website innovation, where an innovation service website can be used to deliver the materials and information and provide communication between students and administrative staff and lecturers. Innovation is sorely needed to support

teaching and learning in universities today (Herawati et al., 2008; Sravanthi, 2013), especially since the majority of young people, especially universities students, are familiar with the use of the Internet and gadgetry connected with it (Central Bureau of statistics Indonesia, 2012b).

This study is important as previous research has noted the difficulty today's students have in interacting with universities and lecturers (Daulay, 2008; Herawati et al., 2008). A data survey (Kompas.com, 2012) showed that students preferred to use online gaming websites than university website.

Students should be encouraged to use university websites as part of their learning process. These websites can also build self-motivation in students through frequent use. At the same time, it will also develop their computer skills and ability and increase their satisfaction with the university. Research has shown that online student satisfaction in using university websites is relatively low (Herawati et al., 2008; Ministry of College Education, 2012b; Sriwardiningsih, 2014). Several factors are expected to influence students' satisfaction in using university websites. Consumer satisfaction can be seen from happiness, frustration and sadness (Kotler & Keller, 2012), perceived benefits in accordance with expectations, positive recommendation and repeat behaviour (Kotler & Keller, 2012). Online universities are supposed to provide online education and if they cannot provide student satisfaction, their services are deemed to have failed. As a provider of educational services both online colleges and universities must

provide consistent satisfactory services. High satisfaction is the item paid for by the consumer. Student satisfaction and student behaviour in adopting the use of innovation websites is the focus of this research subject.

This research topic is important for two reasons. First, it provides fresh insight into the behaviour of students who use university website services, a topic that has received little attention even though it is an interesting topic that is pertinent and relevant to daily life. Researchers are interested to know how quickly students adopt the use of university. Previous research only focussed on the performance of websites, but did not consider the behaviour of users of the websites. Secondly, this study is important because it compared the behaviour of the adoption of innovations of two different groups i.e. online students and regular students. The pertinent questions that this research sought to answer were: Is the behaviour of both groups the same or different? Do both groups of students have the same characteristics? What are the differences between the two groups of students?

The speed of adopting website use differs from student to student. Many factors influence the speed of adoption of the use of university websites. Some of these factors may be true for one group but not the other. Technology factors and social factors are involved in the process of diffusion of innovation (Rogers, 2003; Sriwardiningsih, 2015). This research also sought to discover the level of satisfaction of both groups and whether satisfaction

was an intermediate variable for factors that affected the behaviour of the two different groups.

The difference between commercial websites and educational websites is the emphasis on virtual display although each industry may have its specific needs. Educational websites are orientated around information (Medlin, 2001; Parasuraman et al., 2005; Loiacono et al., 2007) and university websites are relevant only if students access them. The adoption of university website services would be effective if the website interacted with students. Educational websites have different characteristics compared with other industries (Surendra, 2001; Less, 2003; Parasuraman et al., 2005; Belanche et al., 2011; Sriwardiningsih, 2014). Educational websites need effective two-way interaction between the communicator and the listener (Medlin, 2001; O'Brien & Marakas, 2008). They are effective if they have certain characteristics (Less, 2003; Collier & Bienstock, 2006; Eom et al., 2006; Sriwardiningsih, 2015): (a) enables interaction between students through materials posted online (b) enables interaction between students and tutors or experts and (c) enables interaction between students. These characteristics are demonstrated in the availability of e-mail links, forum discussion, search functions and the speed of feedback (Medlin, 2001).

Customer satisfaction is a modern marketing orientation (Sheth & Parvatiyar, 1995; Shiffman & Kanuk, 2010; Miles, 2012). In this context, customer satisfaction

encourages the customer to adopt the university website (Eom et al., 2006; Shiffman & Kanuk, 2010; Miles, 2012). This can guarantee frequent use of the service and enlarge the student population who use the service. Consumer satisfaction is obtained when the student gets more than he expected to receive from the service. Previous research showed that the process of diffusion of innovation was achieved when customer satisfaction was met (Schiffman & Kanuk, 2010; Kotler & Armstrong, 2012; Kotler & Keller, 2012).

Factors that cause consumer satisfaction have always been a topic of interest to researchers. The diffusion of website services refers to customer satisfaction and the intention to adopt the offered technology (Sheth & Parvatiyar, 1995). The evolutionary marketing paradigm can be accepted by earlier researchers (Bagozzi, 1994; Morgan & Hunt, 1994). Previous research has not proved possible satisfaction could influence customer behaviour in adopting website services.

Many studies have linked self-motivated customers to the adoption of website services (Carter, 1998; Medlin, 2001; Rogers, 2003; Eom et al., 2006). Motivation can be either intrinsic or extrinsic. Both have the power to affect customer behaviour in the adoption of websites (Miles, 2012). Consumers need motivation to override passive behaviour. The motivation of self-control consists of autonomy, ability and social relationship. The environment can also influence consumer motivation (Deci & Ryan, 2008; Gagne et al., 2010).

The concept of motivation is sometimes criticised because: a) It considers only the positive, but is often the opposite in reality; b) It assumes that all consumers are active, but this is not always so; c) Self-esteem is different between individuals; d) There is no explanation for why low consumer motivation leads to a high drop-out rate; e) There are no clear internal and external motivational forces that are required by consumers to use media, especially Internet-based websites (Miles, 2012).

Literacy may refer to various concepts such as literacy education, computer literacy and internet literacy, among others. In this paper literacy refers to access to information using the Internet. There has been no research into the direct relationship between the behaviour of consumers who adopt the use of websites based on Internet literacy although there has been research into the influence of Internet literacy on the behaviour of consumers who use websites for the purpose of learning.

Contingency is another matter that is relevant to this discussion. Some studies have pointed out that while websites should bring benefits to consumers, some websites have caused students to drop out of college due to disappointment with the poor service provided by the websites (Collier & Bienstock, 2009). Previous research linked no internet literacy, motivation and satisfaction as well as individual social factors to the behaviour of consumers in adopting the use of website services. The Internet connects millions of global information networks and this is extremely

beneficial for users (Laudon & Loudon, 2005; O' Brien & Marakas, 2008) as it enables all sectors of the economy to adequately meet their needs. Literacy is the comprehension of an area. Internet literacy is the consumer's comprehension of the use of the Internet and includes possession of information, consumer comprehension and the ability to acquire benefits from information sourced through the Internet (Kogut & Zander, 2003) as well as the distribution of knowledge and information through social media (Adler, 2001). It can be the ability of the individual to manage information to succeed in his chosen task (Castro et al., 2011). The concept of information literacy has raised many definitions: visual literacy is understanding and using images for visual learning, visual thinking and visual communication. Media literacy is the ability to access, analyse and produce information for a specific result. Computer literacy is the ability to create and manipulate documents or data with the help of word processing software and databases, among others. Digital literacy is the mastery of the source of software and digital devices. Network literacy is a term that is still developing that refers to the ability to access, locate and use information in the world of networking, for example, the Internet (Eisenberg, 2008).

Many previous studies have shown that interactive services are needed in the process of consumer behaviour in an effort to improve it. Many factors can influence customer satisfaction. Motivation in education is the perceived through learning

outcomes and student satisfaction. This study aimed to conduct a comparative study of two groups of students with different characteristics. Based on empirical findings, we made six hypotheses as follows:

- H1. Consumer satisfaction has a positive relation to consumer behaviour.
- H2. Interactive websites have a positive relation to consumer behaviour.
- H3. Interactive websites have a relative relation to customer satisfaction.
- H4. Consumer motivation has a positive relation to consumer behaviour.
- H5. Consumer motivation has a relative relation to customer satisfaction.
- H6. Consumer literacy has a positive relation to consumer behaviour.

METHODOLOGY

This study used qualitative and quantitative data to test the hypotheses. Qualitative data was collected from the respondents' feeling or insight through media interviews or focus groups. The interviews were conducted with students, staff academics and practitioners. Quantitative data was collected from information on comparative studies. A number of questionnaires were distributed for sampling. A Likert scale was used. The programme used to analyse the data was Warp PLS 3.0 (Kock, 2012).

The sixth hypothesis came from the PLS or Partial Linear Square model (Hair et al., 2011). The study population consisted of undergraduate university students who used the campus website that was open to both regular and online students, from various majors and semesters. This research was conducted at several universities in Jakarta and West Java. Jakarta and West Java were chosen for practical reasons. There were six regular universities and two online universities. The regular universities were University of Indonesia in Depok, Bandung Indonesia University of Education, University of Padjadjaran Bandung, University Mercubuana Jakarta, Indonesia University of Computer UNIKOM and Bina Nusantara University in Jakarta. The sample included 317 regular students from the six universities. The two online universities were Universitas Terbuka in Jakarta and Online Bina Nusantara University in Jakarta. The sample of online students comprised 274 respondents. The sample used cross-sectional collecting data. The research sample used stratified sampling. The number of samples of a number of sub-populations was obtained by sample fraction (f). The formula for the sample fraction was $f_i = N_i/N$, where the number of elements of each sub-population was divided by the number of all elements of the population.

RESULTS AND DISCUSSION

Both groups met the three requirement categories. The Average Path Coefficient (APC) and Average R-Square (ARS) had a

p-value of <0.05 while the Average Variance Inflation Factor (AVIF) had a value of <5. The model test qualified compatibility (fit) and could proceed to the next test. The model with the value of the variance inflation factor or AVIF <5 showed no multi-collinearity between the indicators with latent (lateral collinearity) and latent variables (classic collinearity) in this model. The APC and ARS values were p-value<0.05, indicating the stable coefficients path of the variables (Lindell & Whitney, 2001; Kock, 2012).

The outer models for both groups had a high convergent validity value that was understood by the respondents and associated with the latent variables. The latent variables were measured with a significant p-value of <0.05 and discriminant validity value with AVE value. In addition, the value of the composite reliability coefficient (CR) should have been greater than 0.7 and the value of the Cronbach's Alpha coefficient increased with the increasing number of indicators used (Hair et al., 2010; Kock, 2012).

Table 1
Model Structural Equation Model for Two Groups

	Online students	Sig ρ	Regular students	Sig ρ
Satisfaction → Consumer behaviour	β=0.52	<0.01	β=0.54	<0.01
Motivation → Consumer behaviour	β=0.19	<0.01	β=0.19	<0.01
Motivation → Satisfaction	β=0.82	<0.01	β=0.57	<0.01
Literacy → Satisfaction	β=0.16	<0.01	β=0.05	=0.25
Interaction website → Consumer behaviour	β=0.02	=0.35	β=0.14	<0.01
Interaction website → Satisfaction	β=0.09	=0.05	β=0.15	<0.01

The model group of online students had an R-squared coefficient (R2) of 0.80 for the behaviour consumer variable. Consumer behaviour of value 0.67 indicated a very strong relationship, where the consumer had shown repeat behaviour in continuing to use the website. The regular students had an R-squared coefficient (R2) for variable behaviour consumer of 0.61, which was between 0.33 and 0.67, indicating strong consumer behaviour, in terms of repeat behaviour. The challenge for universities is to improve the factors that influence regular students to adopt the innovation of a university website.

The online students had a determinant value of R2=0.6, where consumer satisfaction was adequate but not good enough from the marketing perspective. The regular students had an R-squared coefficient (R2) for variable satisfaction consumer of 0.4, which was between 0.33 and 0.67. The score 0.4 was approaching the value of 0.33, meaning that student satisfaction was small or low as their expectation had not been met by reality. Universities face the challenge of satisfying their students because they are paying customers who expect to get their money's worth from the website.

The online students diffused innovation of the university website because their motivation was high (0.82) to complete the process of learning. Their satisfaction lay in acquiring the degree they were pursuing (0.52) through the Internet (0.16). An interesting finding of this study was that online students did not interact significantly with the university's website directly. However, they had no other choice for discussion with the teacher or mentor except through online communication.

The regular students diffused innovation of the university website because their motivation was quite high (0.57) but lower than that of the online group. Their satisfaction lay not only in acquiring the degree they were pursuing but also in acquiring other beneficial skills such as soft skills that would help them succeed in the work place in the future (0.54). For them website interaction with the facilitator was indispensable for learning in the classroom and outside the classroom (0.14). An interesting finding of this study was that Internet literacy was not significant for student behaviour. While Internet literacy was a significant variable for online students, it was not significant for regular students.

The findings obtained from this study were that students would adopt the website if their needs were fulfilled for learning and freedom of access to communication that is not limited by time and distance. It is also shown that repeat behaviour in using university websites is crucial for the success of the learning process.

The students were satisfied when they believed using the website service would enhance their abilities. They were satisfied and happy and eager to learn. Lastly, the students were satisfied if they could benefit from the information acquired from the learning process. The data showed that student satisfaction was a very strong influence on the behaviour of adopting website services. The data indicated that the service was an interactive website that made a contribution to the learning process but its influence was relatively lower than that of motivation for adoption behaviour or loyalty to the website. Students who assessed the interactive website focused on two equally important factors: the characteristics of the website and active two-way communication with college students. The characteristics they were concerned with were an attractive look and an interface that provided information clearly; the addition of additional materials; ease of access; and easy access to the library as well as to international e-journals. Active two-way communication with college students must be facilitated by e-mail and discussion forums with quick and clear response. The data indicated that the service made a contribution but its influence was relatively lower than that of the motivation for adoption behaviour or loyalty.

Students' internal and external motivation to use the website was very strong. Internal motivation was driven by habit and passion. External motivation was driven by the students' desire for self-development and for social affirmation. The

data showed that motivation for using the website service had a high influence.

Internet literacy is the ability of students to access information in the learning process. Internet literacy in this research referred to understanding the Internet as a source of information that is diverse and not limited in scope. Internet literacy would give them the ability to understand the potential of the information they were acquiring as well as enable them to navigate the links to access the information they required. It also referred to being able to understand useful information through the Internet to support learning quickly and efficiently and understanding how to use the Internet as social media. The research data did not support (not significant) Internet literacy as a supporting variable.

CONCLUSION

This study contributes to the theory of consumer behaviour with regards to the diffusion of innovation and how it works in education. In addition, this study proved that satisfaction works as an intervening variable on consumer behaviour. In connection with the results of the study are various managerial implications. One is to increase student satisfaction in using service websites. Student satisfaction arises from the positive perception after interacting with the services accessed through the website. The positive perception of students is gained from the benefits received, pleasure and confidence after using the websites. The unique advantage of the website is that it

must be able to provide exceptional levels of experience.

Every university hopes that its customers, its students, will adopt regular use of its website as a form of customer loyalty. This loyalty can only be achieved if the students' needs are met. Website adoption will happen if customers are satisfied with the services provided by the website. The satisfaction of students is important because they are paying for the information they need. Consumer satisfaction when using the website is affected by the attributes of the user, who is influenced by the characteristics of the website. Adoption behaviour as a form of student loyalty occurs because the website is able to provide satisfaction for college students. The satisfaction felt by students is supported by motivation, Internet literacy and interactive website services.

Internet information services is based on an alternative system of conventional services. The education system can experience innovative services in accordance with the needs of students. Students will adopt a website if their needs are met. Website information services need to be adapted to student needs, otherwise the service will not reach the target website.

Complaints are one form of registering user dissatisfaction. The focus of the research was the factors that influenced consumer satisfaction. This study aimed to evaluate interactive website services that are adopted according to student needs. The adoption of a website is possible if there is integration between the interactive website

and the social self-concept of consumers such as motivation, internet literacy and a sense of satisfaction. The integration of these factors is the paradigm of the evolution of marketing in the modern era. The flexibility of websites has made it a suitable alternative to conventional delivery at universities and colleges. Websites provide an effective network of information services and are not limited by time and distance. This study showed that the diffusion of consumer behaviour among the online students was greater than that among the regular students.

LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDY

The limitations encountered in this study are: (a) The researchers did not have the same data on the characteristics of website services as a form of customer service provided to students as the university; (b) The sample size was not the same, (c) The research period was not the same for both groups; (d) There was a difference in age of the respondents from the two groups. There was a significant influence between Internet literacy with adoption behaviour mediated by the interactive website services. The Partial Least Square (PLS) had a comparative advantage to predict but was disadvantaged by the lack of precision of the overall measurement of goodness-of-fit.

Some of the variables managed to confirm the underlying theory, but one variable, Internet literacy, was not able to confirm the theory. The effect was quite significant and therefore, needed further

assessment. Future research in this area should pay attention to the indicators of the underlying variables such as Internet literacy and other items that might affect the endogenous variables, namely the effect of literacy on the Internet and the interactive website services. It is possible that there might be other mediating variables such as Internet literacy, satisfaction, behaviour or adoption of websites.

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