

How Could Website, Motivation, Internet Literacy, and Satisfaction Influence Student's Education Behavior

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Abstract: Purpose-This study are expected to provide benefits of using website for student's education behavior, while other variable could be present for this purpose. There was some hypothesis that interactive website, motivation, internet literacy and satisfaction affected student's education behavior. Methodology- This quantitative research used survey through 317 students from six colleges. Some hypotheses were analyzed using model path analysis of Structure Equation and Warp PLS 6.0 was used as a tool analysis. Findings-The result of four hypotheses were proved significant to predict the Rogers theory of diffusion of innovations related to marketing theory. The Literacy Internet, Motivation, Website and Satisfaction influence positive significantly the student's education behavior. Unfortunately, one hypothesis was not supported to predict the Rogers theory, which the internet literacy could not be moderating variable for website to motivation. Novelty-Finding the literacy internet as independent variable with the five dimensions which is knowledge information source and skill. Research limitation/implication- This research did not use standard website through all sample survey. Effect size of result from this research did not dig more deeper because comment sense of research only focuses of validity of significantly.

Keywords: *website, motivation, internet literacy, satisfaction, behavior*

RESEARCH BACKGROUND

Student's education behavior is always changing through the time (Centre for Educational Research and Innovation, 2009). It is very strange that we always have problem to manage them suitable with education purposed. Destructive of technology in their era becoming big trouble if they cannot use it for education. They need to improve knowledge, link, communication without leave their technology. Students know a day cannot separate with their technology such as internet, smart gadget and e-communication. Technology such as internet, smart gadget and website is product education and students are consumers. College or university is company which has responsibility to produce consumers need. Amazing a lot of colleges and universities are advertising their product to consumer using technology website as their marketing and their service. It is very crucial problem if the website is used for their service to student as consumer do not satisfied them. How could website become useful product for student's education that is becoming big homework for college and universities. Theoretically, the website must suit with their need, so they will adopt it and they do regularly as their need. A lot research focus on why student drop out or successful of students pass from their collage. This research focus on could website, motivation and satisfaction influence student's education behavior. Could student grape this technology opportunity in their processing studied. If students as consumer succeed to use their product so the consumer would be satisfaction. The benefit of from this action, it could be proven for suitable strategic on very good service of this collage.

LITERATURE REVIEW

Relation Behavior, Satisfaction and Innovation

Marketing and innovation have very tight relation. Consumer behavior and satisfaction have main idea of marketing of service or product. Innovation technology using internet is using everyone include in education (Norliza, Mohamad Sattar, & Roseannah, 2013). Website, you tube, smartphone and so on are technology using internet. Education institution tries to adapt this phenomenon (Melorose et al., 2016). The big question is how far student can accept this technology innovation. Innovation in this research is bounded by specific purpose that we call it website. Website contents of network resource, multimedia content, communication link and so on. When technology website used in collage and student used it, so it means diffusion innovation happened in student.

Now a day diffusion innovation Rogers's theory is still growing (Rogers, 2015). His theory is always associated with the process of occurrence of social change for community development. The theory proposed by Rogers in 1995 has significant relevance and arguments in the innovation decision making process. The theory describes the variables that influence the level of adoption of an innovation and the stages of the innovation decision making process. Variables that influence the diffusion stages of innovation include (1) perceived attribution of innovation, (2) type of innovation decisions, (3) communication channels, (4) nature of social system, and (5) change agents. Furthermore, the stages of innovation decision making process include (1) stage of emerging knowledge refers to literacy, when an individual understands the existence and benefits dan how an innovation function, (2) Persuasion stage, when an individual forms good because satisfaction or bad attitudes because unsatisfaction, (3) Decision stage arises when an individual is involved in activities adoption or rejection refer to intent to behavior of an innovation. (4) Stage of implementation refers to behavior when an individual determines the use of an innovation. (5) Stage of confirmation refers to loyalty, when an individual seeks to strengthen the decision to accept or reject innovation that has been made before as repeated action.

Innovation adoption behavior is influenced by several characteristics (Rogers, 2015) and these characteristics related with marketing theory (Reisch & Zhao, 2017). So, it can be reference for website service (Kumar & Sachan, 2017). These characteristics are: 1) The relative advantages related to innovation theory. Consumer satisfy if website giving a lot of benefits (Kitapci, Akdogan, & Dortyol, 2014). 2) The need for compatibility related to innovation theory, 3) Can be tested related to trialability of innovation, 4) easily observed by others related to innovation theory 5) The freshness of information consists of text, images, animation sound (Wang & Ramiller, 2017), 6) Uniqueness, 7) Communication two-way interaction (Wang & Ramiller, 2017). These characteristics in marketing can be used as a reference for education website service

(Norliza et al., 2013). In generally five characteristics of innovation could work well for machine but it cannot be easy when human behavior need was included (Rogers, 2015). Specifically, website for education need some dimension (Rasli, Bhatti, Norhalim, & Kowang, 2014) such as tangibles of information and content, reliability of easy to use, responsiveness of forum and email, assurance of accuracy dan empathy. The five dimensions of e-service quality relevant in generally but may not be relevant in specific area. The spread of internet, e-learning is more popular. Massive open online courses from repote offer free and open online course.

Adoption and diffusion of e-learning courses is dependent on the perceive quality service (Sugant, 2014).

Measurement of consumer satisfaction of the website service is very important. A positive effect of service quality dimensions on students' satisfaction with decision to use the service (Dalati, 2017). Impact of different service quality dimensions on student's satisfaction is different. Four of service quality dimensions (tangible, responsiveness, assurance and empathy) except reliability have positive association with student satisfaction. We live in consumer digital culture, these response to digital advertising. The digital environments effects on consumer behavior, their mobile environment spread online word of mouth (Stephen, 2016).

Motivation, Literacy, Satisfaction and Behavior

University usually had no data relating to students' intention using website for education. Furthermore, university interested in subjective factors are taken by student choosing university. Psychometric as motivation involved in selection process and accessing. The reliability as internal consistency of six factors (consideration of the university, perceived usefulness, social impact, vocational aspects, influence of surroundings and geographic location) was high (Peró, Soriano, Capilla, Guàrdia I Olmos, & Hervás, 2015). Human motivation is legal rule on people's behavior. One of the most promising research consisted in distinguishing between extrinsic and intrinsic motivation. The human action is driven by external incentives, in contract to the latter driven by internal forces (Romaniuc & Bazart, 2015). The internal motivation participation group using internet website showed significantly greater the external motivation group on several measures (Van Voorhees et al., 2013). Social psychology addressed to inferences of responsibility and social motivation, information processing in social contexts, the interactive roles of stability and self-esteem, gender differences in perceiving internal state (Hewstone, 2015). How internet literacy in empowering digital human engagement is blooming discussion recently. A lot of challenge for digital literacy such as persistent barriers like illiteracy, poverty, underdeveloped infrastructure and poor awareness of technology. Two dimensions of internet literacy, they are internet skill literacy and internet information literacy. Internet information literacy but not internet skill literacy was intricately related to adolescents' civic engagement, and they can critically understand (Melorose et al., 2016). Characteristics internet literacy refer to a) awareness information resources, b) created and managed of information systems networks, c) interaction networking, d) multiple sources of information, e) quality of life and, f) to ease the basic activities.

According to literature review we had some hypothesis: a) internet literacy influenced positive to website, (b) internet literacy worked as moderating positive for website to motivation, (c) website influenced positive to motivation, (d) motivation influenced positive to satisfaction and, (e) satisfaction influenced positive on student's education behavior. Gap research that we tried to find out is which of the five dimensions of website worked well for this case, empathized correlation between internet literacy with website or motivation and specific characteristic every variable worked in this study case.

Method Research

Hypothesis analysis was used Partial Least Square (PLS) to linear regression looks like Structural Equation Modelling. SEM-PLS is used for measuring the compatibility of internal and outer model (Hair, Hollingsworth, Randolph, & Chong, 2017). The assessment of outer model focused on the validity of formative latent variables. We took formative variables because the indicators model has been supported by previous research. The nomological validity

of the indicators formative value are expected no less than 0.8, it is proven strong significant to confirm the previous research. Measurement of model free from multicollinearity because it had ideally average block VIP (AVIF) $1.053 \leq 3.3$. Then, we evaluated part model assessment of endogenous latent variables, the size contributed and relevance in prediction. (Kock, 2017) Warp PLS 6.0 had used to measure survey data. The stratified random sampling survey from six collages which using website in their collage for learning delivery, were 317 respondents with 42 questions and scaled from 1 until 4. The respondent has already been used the website one semester.

RESEARCH RESULTS

The size the goodness of fit model using Warp PLS are average path coefficient (APC) indicators were valid for the latent variables with p-value < 0.05 and you can see the Figure 1. (Kock, 2017).

Table 1.A. Normalized structure loadings

Definition	LF (P-value)	Definition	LF (P-value)
Literacy internet		Website	
knowing what for the internet	0.548 (0.128)	tangible of interesting Graphic and text	0.79 (0.015)
knowing what for information source	0.826 (<0.001)	tangible of clear content information	0.777 (0.007)
knowing where information was distributed	0.618 (0.103)	tangible of class schedule	0.707 (0.005)
knowing where the correct link to get information	0.776 (<0.001)	tangible of added of content material	0.75 (0.003)
knowing why they access e-information	0.668 (0.028)	reliability to access	0.846 (0.022)
knowing why we need the internet for information source	0.77 (<0.001)	reliability access by mobile phone	0.793 (0.005)
knowing when they can access	-0.08 (0.468)	accuracy to access to e-library	0.645 (0.002)
knowing when the effectiveness of social media	0.837 (<0.001)	accuracy of free access to e-journal	0.731 (0.003)
knowing to whom internet can spread information very fast	0.76 (0.1)	Response of feedback e-mail fast	0.655 (0.004)
knowing social media very popular for specific person	0.868 (<0.001)	Response of feedback e-mail with clear	0.668 (0.002)
knowing how internet need connection to LAN	0.52 (0.014)	empathy between lecturer and student using forum discussion	0.678 (0.006)
Knowing how internet need correct keyword	0.747 (<0.001)	empathy among student using forum discussion	0.653 (0.024)

According Table 1.A. and Table 1.B, the indicators of knowing what for internet, knowing where information was distributed, knowing when they can access, and knowing to whom internet can spread information very fast were not validation. The rest ones were valid and they loading factor became valid indicators for the latent variables.

Table 1.B. Normalized structure loadings

Definition	LF (P-value)	Definition	LF (P-value)	Definition	LF (P-value)
Motivation		Satisfaction		Behavior	
routine as internal motivation	0.769 (<0.001)	feel happy	0.71 (<0.001)	simulation as challenge	0.617 (<0.001)
benefit as internal motivation	0.575 (<0.001)	Enthusiasm	0.687 (<0.001)	simulation of newness	0.56 (<0.001)
encourages as internal motivation	0.63 (<0.001)	benefit of useful information	0.639 (<0.001)	uniqueness as independent	0.646 (<0.001)
prestige as external motivation	0.685 (<0.001)	benefit of fast information	0.604 (<0.001)	uniqueness as free access	0.626 (<0.001)
score value as external motivation	0.679 (<0.001)	more confidence	0.695 (<0.001)	repeated learning	0.758 (<0.001)
Forum discussion among students	0.662 (<0.001)	capability increased	0.666 (<0.001)	repeated discussion using forum	0.742 (<0.001)

Furthermore, the result of model analysis showed in figure 1.

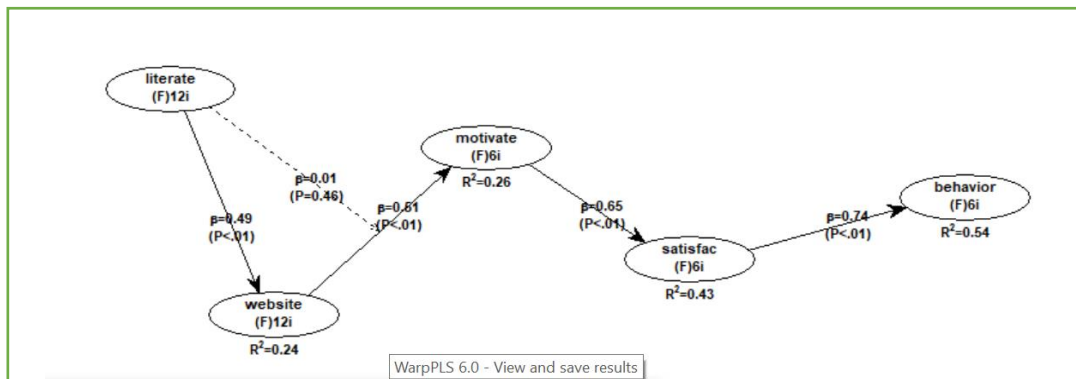


Figure 1. Model of Research

Analysis of inner models for contribution independent variable to dependent variables showed with value of R-squared coefficients (R^2) and value of beta coefficient and supported by P-value.

Table 2. The Direct Effect and Contribution

	Total
Literacy to website	$\beta=0.49$, ($p<0.01$), $R^2 = 0.24$
Literacy as mediating website to motivation	$\beta = 0.01$, ($p=0.46$)
website to motivation	$\beta=0.61$, ($p<0.01$), $R^2 = 0.26$
Motivation to satisfaction	$\beta=0.65$, ($p<0.01$), $R^2 = 0.43$
Satisfaction to student's education behavior	$\beta=0.74$, ($p<0.01$), $R^2 = 0.54$

The previous research said that the two dimensions of literacy internet, which dimension of internet information literacy was valid but not for skill literacy. The indicators characteristic of internet literacy in the previous research was awareness information resources, created and managed of information systems networks, interaction networking, multiple sources of information, quality of life and, to ease the basic activities (Kim & Yang, 2016). Compare with the result of this research, both of dimensions are valid as dimensions of internet literacy. Indicators of knowing what, knowing where, knowing why, knowing when, and knowing to whom were valid as dimension of internet information. Indicator of knowing how was valid as dimension of skill literacy. The hypothesis **a) internet literacy influenced significant positive to website**. This research successes to proven both of dimensions of literacy internet. That was not happened in the previous research literacy but in this research did. When the variable of literacy internet used to be moderating variable. It was not working well. So, **b) internet literacy was not worked as moderating for website to motivation**. This result could not be proven the previous study (Tirado-Morueta, Aguaded-Gómez, & Hernando-Gómez, 2018). The difference of characteristic could be the reason why it was happened. Indicators of socio-demographics were the most levels of access and use of the internet. Disability, gender, age and education on internet use and production literacy were became moderating (Park & Nam, 2014). The expansion of digital technology rose in internet, and mobile but illiteracy of internet became persistent barriers.

One side the five dimensions of website were validation. Which the interesting Graphic and text, clear content information, class schedule, added of content material were indicators of dimension of tangible. Reliability easy to access even by mobile phone. Accuracy access to e-library and e-journal, feedback response email fast and clear, empathy from teacher and students in forum discussion. The other side, routine (Hewstone, 2015), benefit (Hewstone, 2015), and encourage were internal motivation. The indicators of internal motivation from this research were valid, even though little bite different with internal six factors (consideration of the university, perceived usefulness, social impact, vocational aspects, influence of surroundings and geographic location) from previous research (Peró, Soriano, Capilla, Guàrdia I Olmos, & Hervás, 2015). Prestige, score value, and forum discussion among students were external motivation, it consists with participation group using internet website (Van Voorhees et al., 2013). Likewise, **c) website influenced positive to motivation was proven**. The process decision making based on knowledge of literacy, then they understand the benefits and feel satisfaction (Stephen, 2016). Impact of different service quality dimensions on student's satisfaction is different. Four of service quality dimensions (tangible, responsiveness, assurance and empathy) except reliability have positive association with student satisfaction. We live in consumer digital culture, these response to digital advertising. The digital environments effects on consumer behavior, their mobile environment spread online word of mouth (Stephen, 2016).

As everyone knows that human motivation is legal rule on people's behavior. The most popular research consisted in distinguishing between extrinsic or external and intrinsic or internal motivation. The human action is driven by external incentives, in contract to the latter driven by internal forces (Romaniuc & Bazart, 2015). The internal motivation participation group using internet website showed significantly greater the external motivation group on several measures (Van Voorhees et al., 2013). Opposite with this research that the external motivation individual higher than internal motivation. It was important contribution of social environment to conduct the individual motivation. This research supported by Hewstone's result. The effect of social psychology addressed to inferences of responsibility and social motivation, information processing in social contexts, the interactive roles of stability and self-

esteem, gender differences in perceiving internal state (Hewstone, 2015). According to stages of innovation, that individual motivation wants something value for their activity. Stage of persuasion in processing innovation, individual feels forms good because satisfaction or bad attitudes because unsatisfaction (Rogers, 2015). So that why the **d) motivation influenced positive to satisfaction was proven.**

Marketing using innovation for better service (Norliza, Mohamad Sattar, & Roseamnah, 2013), and so education service used it (Melorose et al., 2016). University usually had no data relating to satisfaction and students' intention behavior using education website. According this research that three dimensions of satisfaction were happy because of enthusiasm, benefit of useful fast information, and confidence so capability increasing. Furthermore, simulation as challenge because of newness product, uniqueness as independent for free access and repeated learning by discussion using forum were validation of student's education behavior. The previous study said that a positive effect on students' satisfaction with decision to use the service (Dalati, 2017). Because of **e) satisfaction influenced positive on student's education behavior** in result of data so this hypotheses as proven. It means the perceived attribution of innovation is one stage of diffusion innovation. The perceived attribution of innovation is one stage of diffusion innovation. The process decision making based on knowledge of literacy, then they understand the benefits and feel satisfaction. Innovation website is bounded by specific purposed, when website used by students, so it means diffusion innovation happened in student. Finally, they involved in activities adoption to intent to behavior and behavior of an innovation. The last activity is stage of confirmation refers to loyalty (Rogers, 2015).

CONCLUSION AND RESEARCH IMPLICATION

Conclusion

Four hypotheses in this research was proven influence positive significantly. There is internet literacy influenced positive to website, website influenced positive to motivation, motivation influenced positive to satisfaction and, satisfaction influenced positive on student's education behavior. One hypothesis was not proven, which internet literacy did not work as moderating positive for website to motivation.

Implication

Marketing has tight relation with innovation. One of marketing focusing is satisfaction of consumer behavior on service or product. If innovation website is used by students as consumer education, so the diffusion technology work well. This information can be good inside input for collage to develop more good service, because it will make satisfaction student. The effect of satisfaction is not only loyal and repeat activity but also free advertising by positive word of mouth. It can be good branding in segment market, so it become competitive advantage for collage. Mechanism of marketing in every industry is almost same. Finally, this result hopefully will give which indicators have to be developed for future decision.

REFERENCES

- Centre for Educational Research and Innovation. (2009). Higher education to 2030. In *Educational research and innovation*.
- Dalati, S. (2017). Effect of service quality on students' satisfaction in private higher education in Syria. *5th International Conference on Management Leadership and Governance, ICMLG 2017*.

- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management and Data Systems*. <https://doi.org/10.1108/IMDS-04-2016-0130>
- Hewstone, M. (2015). Consequences of Diversity for Social Cohesion and Prejudice: The Missing Dimension of Intergroup Contact. *Journal of Social Issues*. <https://doi.org/10.1111/josi.12120>
- Kim, E. mee, & Yang, S. (2016). Internet literacy and digital natives' civic engagement: Internet skill literacy or Internet information literacy? *Journal of Youth Studies*. <https://doi.org/10.1080/13676261.2015.1083961>
- Kitapci, O., Akdogan, C., & Dortyol, İ. T. (2014). The Impact of Service Quality Dimensions on Patient Satisfaction, Repurchase Intentions and Word-of-Mouth Communication in the Public Healthcare Industry. *Procedia - Social and Behavioral Sciences*. <https://doi.org/10.1016/j.sbspro.2014.07.030>
- Kock, N. (2017). *Warp PLS User Manual: Version 6. 0 Warp PLS User Manual*: 1–121.
- Kumar, R., & Sachan, A. (2017). *Empirical Study to Find Factors Influencing e-Filing Adoption in India*. <https://doi.org/10.1145/3055219.3055231>
- Melorose, J., Perroy, R., Careas, S., Wu, X., Zhu, X., Wu, G.-Q., ... Authors, F. (2016). WQ.pdf. *Studies in Higher Education*. <https://doi.org/10.1300/J050v14n01>
- Norliza, H., Mohamad Sattar, R., & Roseamnah, A. R. (2013). Penggunaan Laman Web Sebagai Transformasi Dalam Pengajaran Dan Pembelajaran Pendidikan Islam. *The Online Journal of Islamic Education*.
- Peró, M., Soriano, P. P., Capilla, R., Guàrdia I Olmos, J., & Hervás, A. (2015). Questionnaire for the assessment of factors related to university degree choice in Spanish public system: A psychometric study. *Computers in Human Behavior*. <https://doi.org/10.1016/j.chb.2014.09.003>
- Rasli, A. M., Bhatti, M. A., Norhalim, N., & Kowang, T. O. (2014). Service quality in higher education: Study of Turkish students in Malaysian universities. *Journal of Management Info*. <https://doi.org/10.31580/jmi.v3i1.9>
- Reisch, L. A., & Zhao, M. (2017). Behavioral economics, consumer behavior and consumer policy: state of the art. *Behavioral Public Policy*, 1(2), 190–206. <https://doi.org/10.1017/bpp.2017.1>
- Rogers, E. M. (2015). Evolution: Diffusion of Innovations. In *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*. <https://doi.org/10.1016/B978-0-08-097086-8.81064-8>
- Romaniuc, R., & Bazart, C. (2015). Intrinsic and Extrinsic Motivation. In *Encyclopedia of Law and Economics*. https://doi.org/10.1007/978-1-4614-7883-6_270-1
- Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current Opinion in Psychology*. <https://doi.org/10.1016/j.copsyc.2015.10.016>
- Sugant, R. (2014). A Framework for Measuring Service Quality of E-Learning Services. *Proceedings of the Third International Conference on Global Business, Finance and Social Sciences, Mumbai, India, 19-21 December 2014*.
- Tirado-Morueta, R., Aguaded-Gómez, J. I., & Hernando-Gómez, Á. (2018). The socio-demographic divide in Internet usage moderated by digital literacy support. *Technology in Society*. <https://doi.org/10.1016/j.techsoc.2018.06.001>
- Wang, & Ramiller. (2017). Community Learning in Information Technology Innovation. *MIS Quarterly*. <https://doi.org/10.2307/20650324>