Assessing E-Commerce Success from a Millennial Perspective in Indonesia

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Abstract. This research was conducted to assess the success of e-commerce from the perspective of the millennial generation in Indonesia. This research was conducted through a case study on the Bukalapak Application, which in recent times has decreased from the perspective of the number of visitors. This study refers to the DeLon and McLean Updated Information System Success Model. The measurement indicators used in this study were modified based on a review of several recent studies. Data collection was carried out using a questionnaire distributed to 291 respondents consisting of Bukalapak Application users who are included in the millennial generation in Indonesia. Based on the research results above, it can be concluded that all hypotheses can be accepted. Where the quality of information and customer satisfaction has a stronger influence on the use of the Bukalapak Application. Whereas service quality and system quality have a stronger influence on customer satisfaction in using the Bukalapak Application. Then user satisfaction has a stronger effect than using the system at a net profit. It is also known that the millennial generation in Indonesia also considers that the Bukalapak Application has good information quality, system quality, and service quality. Millenial also claims to have used the Bukalapak Application and expressed satisfaction with using the Bukalapak Application and stated that the Bukalapak Application was useful.

1. Introduction
Indonesia is the largest e-commerce market in Southeast Asia. In 2018, the total of e-commerce transactions in Southeast Asia reached USD 23.3 billion, and 52 percent of which are in Indonesia [1]. Indonesia’s e-commerce growth has increased by 78% in 2018 [2]. In 2019, it is predicted that the Indonesian e-commerce market will grow by 31.3% and achieve a profit of up to USD 3.8 billion [3].

One of the factors driving the growth of e-commerce in Indonesia is increasing lifestyle online shopping, especially among the millennium [4]. Besides shopping online, millennials also use e-commerce to find product information, program promos, and price comparisons. Even millennials actively recommend e-commerce or their favorite online stores to other relationships [5].

Bukalapak application or Bukalapak is one of many online marketplaces most frequently used in Indonesian society today. Based on data from iPrice Indonesia, in recent years, Bukalapak was always in the top three e-commerce sites with the most monthly active users in Indonesia. Even in the second quarter of 2018, Bukalapak was ranked second, one level below Tokopedia.
which in recent years has been a market leader in the e-commerce business in Indonesia. In the Second Quarter of 2019, Bukalapak has decreased the average number of visits as much as 25 million visits. This causes the position of the Bukalapak down to the third position, replaced by Shopee which since the third quarter of 2018 is below [6].

This is an important issue in e-commerce business with very tight competition and consumer behavior is very sensitive. A decrease in system usage indicates a potential problem where customers use e-commerce systems with limited switch options to other service providers [7]. As one of the main drivers of e-commerce business, it is needed to evaluate the success of information systems. This is because the success of information systems is not only determined by its sophistication but is also determined by the extent to which the information system can provide satisfaction and benefits to its users.

One of the many models that can be used to assess the success of an information system is the DeLone and McLean Information System Success Model proposed by William H. DeLone and Ephraim R. McLean [8]. This model was later developed into the Updated DeLone and McLean IS Success Model [9]. This model is widely used as a reference by other researchers to measure the success of various information systems, including e-commerce.

Based on the background above, this research was conducted to assess the success of the Bukalapak Application from the perspective of the millennial generation in Indonesia using the Updated DeLone and McLean IS Success Model. This research was also conducted to test the validity of the variables, the interdependencies between variables, as well as the indicators used in the Updated DeLone and McLean IS Success Model, specifically in measuring the success of e-commerce (in this case the Bukalapak Application) from the perspective of the millennial generation in Indonesia. The expected benefit of this research is that it can provide a rationale and contribution in developing e-commerce in Indonesia going forward, especially e-commerce with millennial generation segments.

2. Literature
The DeLone and McLean Information System Success Model was introduced by William H. DeLone and Ephraim R. McLean in 1992. Initially, this model measures the success of information systems using six dimensions, namely system quality, information quality, usage, user satisfaction, individual impact, and organizational impact. In 2003, DeLone and McLean added service quality and intention variables as alternatives to measure the level of system use. Besides that, the intention to use variables is added as an alternative to measure the level of system usage. Then DeLone and McLean also combine individual impact variables and organizational impact into the net benefits of the variable. This updated model is called the Updated DeLone and McLean IS Success Model.

In 2004 DeLone and McLean researched to examine the use of the DeLone and McLean Success Model to measure the success of e-Commerce [10]. In this research DeLone and McLean concluded that the DeLone and McLean IS Success Model can be used and adapted to the measurement challenges of the new e-commerce world.

Over time, changes in the business environment driven by globalization and technological convergence have led to changes in consumer behavior. In today's digital era, consumer shopping behavior, especially consumers from the millennial generation, is influenced by several factors such as trust and confidence in the credibility of the vendor, competitive prices, comfort and convenience in transaction, service availability, security, website design that is informative and interesting, and entertainment and incentive [11]–[14]. Therefore, the model used to measure the success of e-commerce must also be developed following these changes.

In recent years, some researchers use the Update DeLone and McLean IS Success Model in measuring the success of e-commerce is H. Chong, D. Cates, and R. Rauniar [7], N. Urbach and B. Mueller [15], P. H. Saputro, A. D. Budiyanto, and A. J. Santoso [16], J. M. Hudin and
D. Riana [17], I. Kurniawan [18], M. I. Rosyadi [19], V. D. Huse [20], I. Lazaroni [21], F. S. Rahayu, R. Apriliyanto, and Y. S. P. W. Putro [22], L. H. Trihandayani, I. Aknuranda, and Y. T. Mursityo [23], and R. J. Angelina, A. Hermawan, and A. I. Suroso [24]. The researchers above used the Updated DeLone and McLean IS Success Model. It was established by research DeLone and McLean [9] but expanded and adjusted the indicators used to measure each construct tested in the model.

Based on the research of some of the above research, the following are presented the Updated DeLone and McLean IS Success Model with different measurement indicators from the original model introduced by DeLone and McLean. This model is considered more suitable to measure the success of e-commerce following changes in the business environment and consumer behavior, especially the millennial generation, in the digital age.

3. Research Methodology

3.1. Research Model and Hypotheses

Based on the research that has been done, the research model is formulated using the Updated DeLone and McLean IS Success Model [9] with changes to the indicators used to measure the constructs used in the model. Besides, this model does not measure the effect of the net benefits construct on the use construct and the effect of the net benefits construct on the user satisfaction construct as contained in the original DeLone and McLean Update Success Model.

The research model can be illustrated in Figure 1, as follows:

![Figure 1. Research Model](image)

Based on the research model above, the research hypothesis is formulated as follows:

H1: Information quality has a positive and significant impact on system use of Bukalapak

H2: Information quality has a positive and significant impact on user satisfaction of Bukalapak

H3: System quality has a positive and significant impact on system use of Bukalapak
H4: System quality has a positive and significant impact on user satisfaction of Bukalapak
H5: Service quality has a positive and significant impact on system use of Bukalapak
H6: Service quality has a positive and significant impact on user satisfaction of Bukalapak
H7: System use has a positive and significant impact on user satisfaction of Bukalapak
H8: User satisfaction has a positive and significant impact on the intention to use Bukalapak
H9: User satisfaction has a positive and significant impact on the intention to use Bukalapak
H10: System use of Bukalapak has a positive and significant impact on Net Benefits

3.2. Developing the Questionnaire
The questionnaire consisted of two parts. The first part contains the demographic profile of the respondents such as gender, occupation, age, and experience using the system. While the second part contains variables and items which are measurement indicators in research based on previously determined research models. The assessment is done using a 4-point Likert scale, which strongly disagrees, disagrees, agrees, and strongly agrees. Neutral choices are deliberately not used so that respondents can give their opinions specifically.

3.3. Data Collection
Considerations in choosing the millennial generation as a research population refer to the Ipsos research that shows that millennial generation is the widest group done online shopping in Indonesia [25]–[27]. The millennial generation is a generation born between 1980 and 2000, with ages ranging from 19 to 39 years [27]. Based on the results of the Indonesia Statistics census in 2018, the population with an age range between 19 to 39 reaching around 35% of Indonesia’s population of 261 million [28]. The sample size was 291 people. Data collection was carried out using a questionnaire that was distributed to respondents online using an incidental approach [29]. Based on the questionnaire distributed, it is known that 53.6% of the respondents are male and 46.6% are female. Based on occupation 73.2% are employees, 10.3% of students, 8.2% of respondents work as civil servants, 1% of respondents work as entrepreneurs, while another 7.2% work in other occupations. Based on the age group, 56.7% of respondents are in the junior millennial generation group with ages between 19-30 years and 43.3% of respondents are in the senior millennial generation group. While based on experience using the Bukalapak Application, 39.2% of respondents had less than 6 months of experience using the application, as many as 23.7% had 1-2 years of experience, 18.6% for 6-12 months, as many as 11.3% of respondents have more than 3 years experience using applications, and as much as 7.2% of respondents have 2-3 years experience using applications.

4. Result and Discussion
4.1. Analysis of Respondents Opinions on Research Variables
This analyst is conducted to sawn the average (mean) opinions of the respondents to the variables tested. From the descriptive statistical frequency tests conducted, it is known that the respondent’s opinion on Information Quality is 27.14 (agree), System Quality is 33.19 (agree), Service Quality is 17.70 (agree), Use is 8.56 (agree), User Satisfaction is 9.14 (agree), and Net Benefits is 12.22 (agree). So as a whole, it can be stated that respondents’ opinions about information quality variables, system quality variables, service quality variables, usage variables, user satisfaction variables, and net benefit variables are in the agreed criteria.

4.2. Simple Linear Regression Test
Based on the simple linear regression test conducted, it can be stated that in the opinion of the millennial generation in Indonesia the system use variable is more predictable by information quality (45.2%) than user satisfaction (44.4%), system quality (42%), and service quality (38%).
Although overall, basically, these four variables have a weak influence on system use variables. While the user satisfaction variable can be predicted by the service quality variable (59.5%) and the system quality variable (51.8%). The information quality variable and the system use variable precisely show a weaker influence on the user satisfaction variable, namely with the contribution of 49% for the information quality variable and 44.4% for the system use variable. Furthermore, it is also known that changes in the net benefit variable are more predictable by the user satisfaction variable (56.4%) compared to the usage variable (53.9%). While testing the hypothesis, it is conducted by paying attention to account for the significant coefficient from each correlation and t-test results. If the significance coefficient value is less than 0.05, then the correlation can be stated to have a significant effect. As for the t-test, it was performed by comparing the value in the t-table with the value of the t-test or the t-statistic. If the t-statistic value is greater than the t-table value, it means the hypothesis can be accepted. The t-table value in this research was 2.57.

5. Conclusion
Based on the results of the research above, it can be concluded that, in the opinion of the millennial generation in Indonesia, the quality of information, system quality, service quality, and customer satisfaction has a significant effect on the use of the Bukalapak Application. Where the quality of information and customer satisfaction has the most powerful effect compared to other variables. It is also known that information quality, system quality, service quality, and customer satisfaction also have a significant effect on customer satisfaction in using the Bukalapak Application. Where service quality and system quality have a stronger effect compared to other variables. While user satisfaction has a stronger effect than using the system on net benefits.

Based on the research, it is also known that the respondents’ opinions about the research variables, namely information quality, system quality, service quality, system usage, user satisfaction, and net benefits are in the agreed category. Therefore, it means that the millennial generation in Indonesia considers that the Bukalapak Application has good information quality, system quality, and service quality. Millennials also claim to have used the Bukalapak Application and expressed satisfaction with using the Bukalapak Application and stated that the Bukalapak Application was useful.

Thus, the possibility of decreasing the average number of customer visits that occurred on the Bukalapak Application in the last two quarters was caused by other factors outside the research model, such as promotion and marketing programs, and others.

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