



EVALUATION OF RESERVATION SYSTEM SUCCESS USING DELONE AND MCLEAN METHOD AT PT. MABRUK HOTEL

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Abstract

This research intends to determine the relationship between system quality, information quality, and service quality as exogenous variables to system use and user satisfaction as an endogenous variable, then test to determine the effect of system use and user satisfaction of the net benefit variable. This research uses the Delone & McLean success model and probability sampling technique of 97 respondents from guest hotels in Mambruk who use or have used the reservation system. The method of study used to test the reservation system was SEM (Structural Equation Modeling), along with path analysis performed with lisrel 8.0.

Application to describe the relationship of variables latent indicators (measurement models) and relationships between latent variables (structural models), and the results showed that the t-value of system quality (1.25), information quality (0,56), and user satisfaction (0,48) were not significant. However, service quality (3,59) is essential for the system use variable. System quality (5.07), information quality (4.22), and service quality (5.95) significantly affect the user satisfaction variable, then user satisfaction (3.61) and system use (2.06) were significant to the net benefit variable. Fit model is a good fit based on the criteria GOF (Goodness of appropriate) with the results of the chi-square 274.06, with a significance level of probability (0.0013), the degree of freedom 240, RMSEA (0.038), ECVI (48.85), AIC (394.06), CAIC (4775.85), NFI (0.93), NNFI (0.98), CFI (0.98), IFI (0.98), AGFI (0.76), PGFI 0.65). The influence value of system quality (0,22), information quality (0,16), and service quality (0,36) to system use and user satisfaction, then influence the relationship value of user satisfaction (0,62) to system use and net benefit. The achievement of reservation system success results in effectiveness and efficiency in using the reservation system.

Key words: Reservation system; path analysis; IS Success Model DeLone & McLean;

INTRODUCTION

PT. Mambruk hotel is a four-star hotel in any beach resort area that provides hospitality facilities by utilizing information technology to support business operations, hotel promotion, and booking room reservations. The impact of business competition and the advancement of information technology makes the reservation system a means to improve the competitiveness and service to customers in making decisions to make reservations. The measurement model of reservation system success on hotel mambruk is a reference by Delone and McLean, the ability of this model to evaluate reservation system success thoroughly from system quality, quality information, service quality, user satisfaction, system use, and net benefits. The probability technique randomly sampled 97 respondents from guest hotel mambruk who used or have used the reservation system from December 24, 2016, until January 05, 2017. Improving the system quality, information quality, and service quality in the reservation system expect to provide user satisfaction and motivate system use, impacting the benefit of the reservation system at mambruk hotel.

METHOD

The success model of information technology systems developed by DeLone & McLean (2003) identifies and describes the relationships among six critical dimensions of IS success, shown in Figure 1.

The relationship variable is measured from an indicator of each variable. The system quality variable's dimension is measured in five indicators: adaptability, availability, reliability, response time, and usability. Information quality variables are measured in five hands: completeness, ease of understanding, personalization, relevance, and security service quality variables are measured in three indicators: assurance, empathy, and responsiveness. System use variables are measured in four hands: nature of use, navigation patterns, number of site visits, and number of transactions executed. User satisfaction variables calculate using three arrows: repeat purchases, holidays, and user surveys. Net benefits variables are measured in five hands: cost savings, expanded markets, additional incremental sales, reduced search costs, and time savings.

Refers to IS success model Delone and McLean, then formulated a hypothesis:

H1a: System quality affects system use.

H1b: System quality affects user satisfaction.

H2a: Information quality affects the system to use.

H2b: Information quality affects user satisfaction.

H3a: Service quality affects the system to use.

H3b: Service quality affects user satisfaction.

H4a: User satisfaction affects the system to use.

H4b: System use affects net benefit.

H5 :User satisfaction affects net benefit.

The analysis method to test reservation system success using SEM (Structural Equation Modeling) in path analysis and Lisrel 8.0 application to describe the correlation of latent variables with the indicator (measurement model) and the relationship between latent variables (structural model).

Equations

The results of the research questionnaire answer scores of 97 respondents who voted to agree with each indicator in the system quality variable are adaptability 55%, availability 52%, reliability 51%, response time 59%, and usability 51%. Information quality is completeness 41%, ease of Understanding 47%, personalization 39%, relevance 46%, secure

47%. The service quality variable is assurance 57%, empathy 42%, and responsiveness 39%. The nature of the system user accounts for 44% of the variable. In contrast, navigation patterns account for 53%, the number of site visits accounts for 48%, and the number of transactions completed accounts for 40%. Repeat purchases account for 58% of the user satisfaction variable, whereas repeat visits account for 54%, and user surveys account for 51%. The reduction in search expenses accounts for 49% of the net benefit variable, along with cost reductions of 48%, increased markets accounting for 39%, and additional incremental sales accounting for 55%.

The measurement model test uses Confirmatory Factor Analysis (CFA) which includes a convergence validity test, discriminant validity test, and reliability test. According to Hair et al. (2010, 777), the convergent validity test has a minimum loading factor value of > 0.5 or, ideally, ≥ 0.7 . This research used 0,6-factor loading because the total respondent was 97 samples.

According to Hair et al. (1998), as cited by Wijanto (2008: 66), the reliability test has good reliability if Construct Reliability (CR) ≥ 0.70 and Variance Extracted (VE) $\geq 0,50$. The discriminant validity test is fulfilled if the Average Variance Extracted (AVE) root square value is greater than the correlation value between variables in the model. The result of convergence validity, discriminant validity, and reliability, all research instruments are valid and reliable.

Figures and Tables

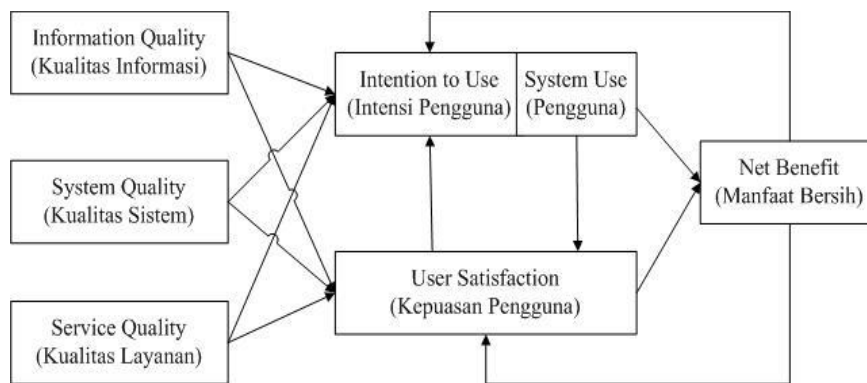


Figure 1 DeLone and McLean IS Success Model

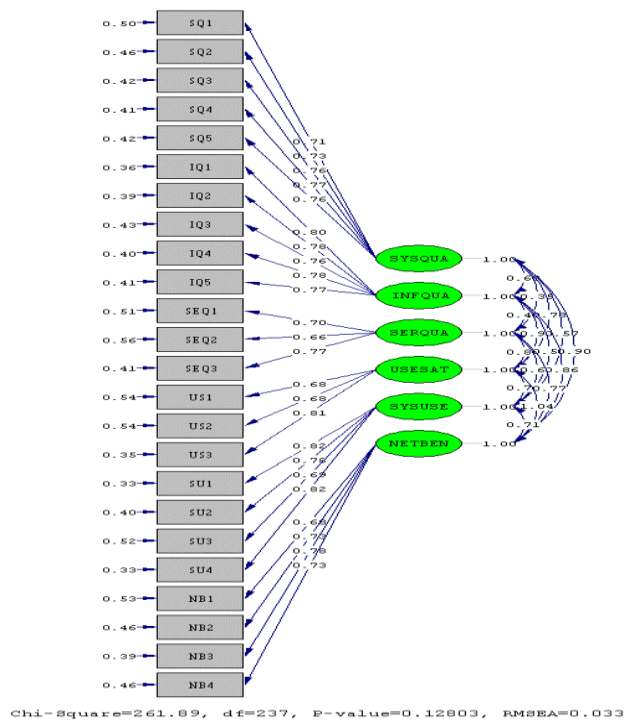


figure 2 Path Model Confirmatory Factor Analysis

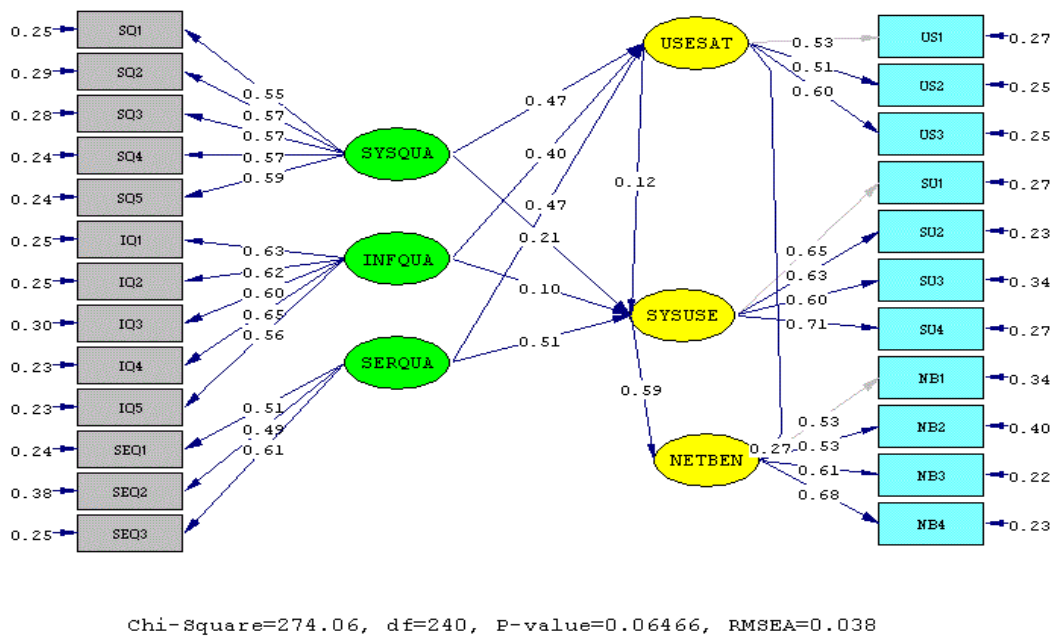


Figure 3 Path Model Estimasi Analysis

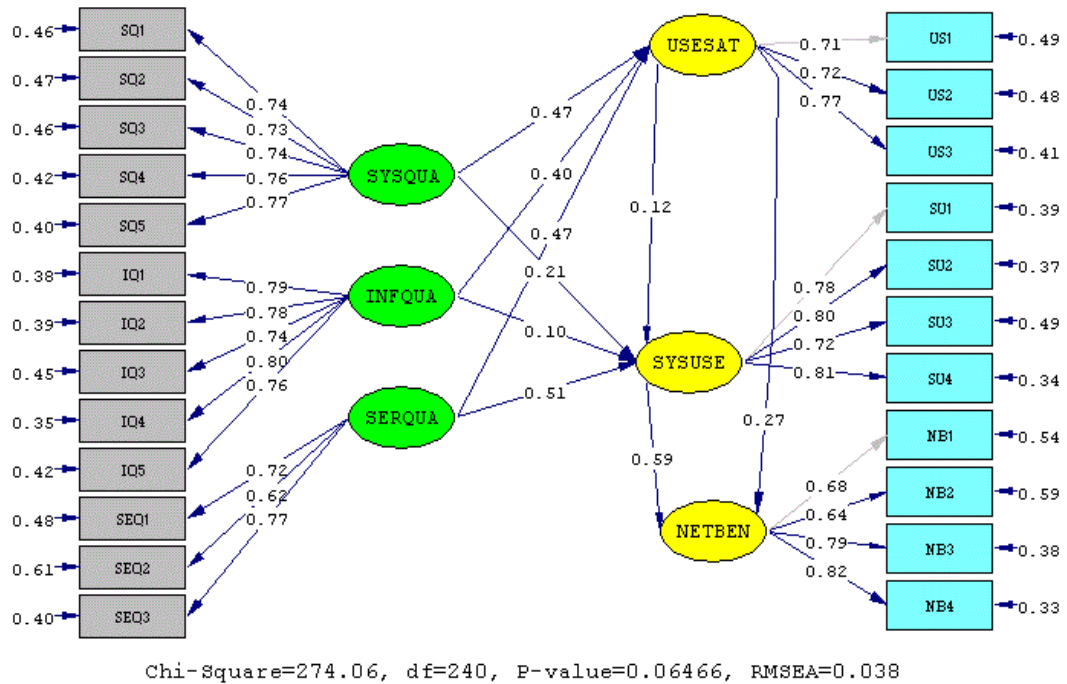


Figure 4 Path Model Standardized Solution

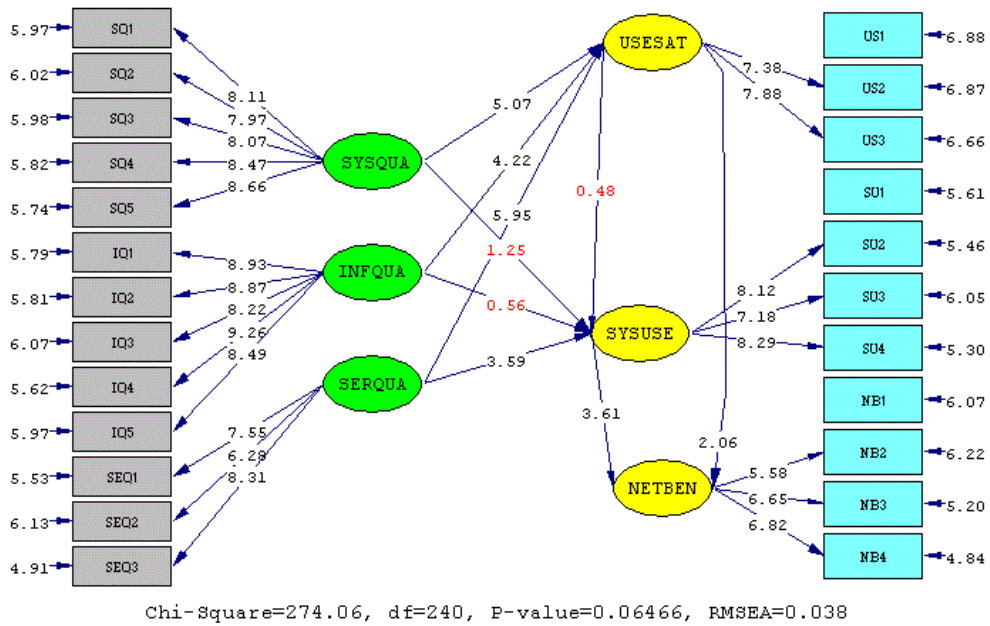


Figure 5 Path Model t-Value

RESULTS AND DISCUSSION

The data processing and analysis outcome is displayed in Figure 4, demonstrating that the construct used to form a research model during the confirmatory factor analysis has met the predetermined criteria for the goodness of fit. It can be seen in the probability value of integrity of the fit test, which shows the importance of 0.64 (0, 06), and RMSAE 0.038

(0.08); in addition, the results of CGI, GFI, AGFI, and RFI test all show values greater than 0.90,

The results of the application data processing Lisrel 8.0, seen in Figure 4, show that the path t-value model has met the predetermined goodness of fit criteria. If probability (value prob) > 0.05 or $- t \text{ table} < t \text{ arithmetic} < t \text{ table}$, then H_0 not reject. If probability (value of prob) $> 0,05$ or $t \text{ count} < - t \text{ table}$ or $t \text{ arithmetic} > t \text{ table}$, then H_0 is rejected ($t \text{ table}$ for $\alpha = 0,05$ is 1,96 and $t \text{-table}$ for $\alpha = 0,10$ Is 1.65).

The results of the analysis are:

1. H1a Hypothesis:

The value of $t \text{ stat} = 1.25 < 1.96$ so that H_0 was rejected, which means the variable system quality significantly negatively affects the inconsistent system use.

2. H1b Hypothesis:

The value of $t \text{ stat} = 5.07 > 1.96$ so that H_0 is accepted, which means that the system quality variable has a significant positive effect on the user satisfaction variable. The higher the system quality, the higher the user satisfaction, and vice versa

3. H2a Hypothesis:

$T \text{ value stat} = 0,56 < 1,96$ so that H_0 is rejected. The mean variable of information quality does not influence a variable of system use.

4. H2b Hypothesis:

The value of $t \text{ stat} = 4.22 > 1.96$ so that H_0 is accepted, which means the variable information quality significantly positively affects the variable user satisfaction. The higher the value of information quality, the higher the user satisfaction, and vice versa

5. H3a Hypothesis:

Value $t \text{ stat} = 3.59 > 1.96$ so that H_0 is accepted, which means service quality variable has a significant positive effect on the system use variable. The higher the service quality, the higher the system use, and vice versa

6. H3b Hypothesis:

Value $t \text{ stat} = 5.95 > 1.96$ so that H_0 is accepted, which means the service quality variable has a significant positive effect on the user satisfaction variable; the higher the value of service quality, the higher the user satisfaction, and vice versa

7. Hypothesis H4a:

The value of $t \text{ stat} = 0.48 < 1.96$, so H_0 reject, which means the variable user satisfaction does not affect the inconsistent system use.

8. H4b hypothesis:

T value stat = $3.61 > 1.96$ so that H_0 is accepted, which means that the system use variable has a significant positive effect on the net benefit variable.

9. Hypothesis H5:

T value of stat = $2.06 > 1.96$ so that H_0 is accepted, which means that the variable satisfaction user has a significant positive effect on the net benefit variable.

The research results shown in Figure 2 show that the Direct effect of system quality on user satisfaction is 0,47, system quality to system use is 0,21, and the Indirect effect value is 0,12 with a total effect value is 0,22. The direct effect of the information system on user satisfaction is 0,40, the information system to system use is 0,10, and the indirect effect value is 0,12 with a total value is 0,16. The direct effect of service quality on user satisfaction is 0,21, service quality to system use is 0,51, and the indirect effect value is 0,12 with a total effect value is 0,36. The direct effect of user satisfaction on system use is 0,12, user satisfaction to net benefit is 0,27, and the indirect effect value is 0,59 with a total effect value is 0,62. Information and service quality directly affect user satisfaction and the system used in this case.

CONCLUSION

1. System quality has no significant effect on System Use. Hypothesis test result using Lisrel 8.0 program with chi-square value of 274,06 and df (degree of freedom) value 240, t-value 1,25 is smaller than t-table 1,96. This result is obtained from the system quality variable, which has an average value of 4.07 percent consisting of five indicators: adaptability 4,05 percent, availability 4,01 percent, reliability 4,12 percent, response time 4,09 percent, and usability 4,07 percent. The validity test of each hand is valid with a loading factor value is $> 0,6$. The variable is reliable with a CR value of 0,91 and a VE value of 0,68. The system quality variable influences system use in motivating to increase the frequency and intensity of system use with a direct effect total value of 0,21.
2. System quality has a significant effect on user satisfaction. Hypothesis test result t-value 5,07 is higher than t-table 1,96. This result is obtained from the system quality variable, which has an average value of 4.07 percent consisting of five indicators: adaptability 54,64 percent, availability 51,54 percent, reliability 50,51 percent, response time 58,76 percent, and usability 50,52 percent. The validity test of each hand is valid with a loading factor value is $> 0,6$. The variable is reliable with a CR value of 0,91 and a VE value of 0,68. The

- system quality variable affects user satisfaction on an emotional level, attitude, and satisfaction behavior with a direct effect total value of 0,21.
3. Information quality has no significant effect on System Use. Hypothesis test result t-value 0,56 is smaller than t-table 1,96. This result is obtained from the information quality variable, which has an average value of 4,13 percent consisting of five indicators: completeness 4,07 percent, ease of understanding 4,15 percent, personalization 4,11 percent, relevance 4,12 percent, dan secure 4,16 percent. The validity test of each indicator is valid with a loading factor value is $> 0,6$. The variable is reliable with a CR value of 0,92 and a VE value of 0,71. The information quality variable influences system use in motivating to increase the frequency and intensity of system use with a direct effect total value of 0,10.
 4. Information quality has a significant effect on user satisfaction. Hypothesis test result t-value 4,22 is higher than t-table 1,96. This result is obtained from the system quality variable, which has an average value of 4,13 percent consisting of five indicators of completeness 41,24 percent, ease of understanding 47,42 percent, personalization 39,18 percent, relevance 46,39 percent, dan security 47,42 percent. The information quality variable affects user satisfaction on an emotional level, attitude, and satisfaction behavior with a direct effect total value of 0,40.
 5. Service quality has a significant effect on System Use. Hypothesis test result t-value 3,59 is higher than t-table 1,96. This result is obtained from the service quality variable, which has an average value of 4,17 percent consisting of three indicators: assurance 4,18 percent, empathy 4,19 percent, and responsiveness 4,14 percent. The validity test of each hand is valid with a loading factor value is $> 0,6$. The variable is reliable with a CR value of 0,84 and a VE value of 0,64. The information quality variable influences system use in motivating to increase the frequency and intensity of system use with a direct effect total value of 0,51.
 6. Service quality has a significant effect on user satisfaction. Hypothesis test result t-value 5,95 is higher than t-table 1,96. This result is obtained from the system quality variable, which has an average value of 4.17 percent consisting of three indicators: assurance 56,70 percent, empathy 39,18 percent, dan responsiveness 38,40 percent. The service quality variable affects user satisfaction on an emotional level, attitude, and satisfaction behavior with a direct effect total value of 0,47.

7. User satisfaction has no significant effect on System Use. Hypothesis test result t-value 0,48 is smaller than t-table 1,96. This result is obtained from the service quality variable, which has an average value of 4,11 percent consisting of three indicators: repeat purchases 4,05 percent, repeat visit 4,15 percent, dan user surveys 4,12 percent. The validity test of each hand is valid with a loading factor value is $> 0,6$. The variable is reliable with CR value 0,86 and VE value 0,67. The user satisfaction variable influences system use in motivating to increase the frequency and intensity of system use with a direct effect total value of 0,12.
8. System use has a significant effect on net benefit. Hypothesis test result t-value 3,61 is higher than t-table 1,96. This result is obtained from the service quality variable, which has an average value of 4,13 percent, four indicators: nature of use at 44,33 percent, navigation patterns at 52,58 percent, and several site visits at 48,45 percent, dan number of transactions executed at 40,21 percent. The validity test of each indicator is valid with a loading factor value is $> 0,6$. The variable is reliable with a CR value of 0,90 and a VE value of 0,68. The user satisfaction variable influences system use in motivating to increase the frequency and intensity of system use with a direct effect total value of 0,59.
9. User satisfaction has a significant effect on net benefit. Hypothesis test result t-value 2,06 is higher than t-table 1,96. This result is obtained from the user satisfaction variable, which has an average value of 4.11 percent consisting of three indicators: repeat purchases 57,73 percent, repeat visit 50,52 percent, and dan user surveys 32,99 percent. The user satisfaction variable affects net benefit with a direct effect total value of 0,27.

REFERENCES

- Abdul Nasser H. Zaied (2012), An Integrated Success Model For Evaluating Information System In Public Sector Vol.3 No.6
- Arikunto (2010) *Prosedur Penelitian Suatu Pendekatan Praktek*, Rineka Cipta. Jakarta.
- Dekeng Setyo B, Dessy Ari Rahmawati (2015), Pengaruh Kualitas Informasi Dan Kualitas Sistem Informasi Terhadap Kepuasan Serta Kinerja Pengguna Sistem Informasi Vol.6 No.1
- Endang Hariningsih (2014), Kajian Teori Model Penelitian Untuk Menilai Kesuksesan Dan Evaluasi Sistem Informasi Rumah Sakit No.2 Vol.1
- Gede Agung Ary Wisudiawan (2015), Analisis Faktor Kesuksesan Sistem Informasi Menggunakan Model Delone And Mclean Vol.II No.1
- Ghozali, Imam (2008), *Structural Equation Modeling, Teori, Konsep Dan Aplikasi Dengan Program Lisrel 8.80*, Semarang.
- Ghozali, Imam, dan Fuad (2005), *Structural Equation Modeling: Teori, Konsep, Aplikasi dengan Program LISREL*. Badan Penerbit Undip, Semarang.

- Hair, JR. Joseph F, Anderson, Rolph E, Tatham, Ronald L. and Black William C (1998), *Multivariate Data Analysis*. Prentice-Hall International, Inc.
- Iman Sanjaya, Awangga Febian S.A (2012), Pengukuran Sistem Informasi Manajemen Frekuensi (SIMF) Dengan Model Delone And Mclean Vol.9 No.4
- Jabal firdaus arifin, suryo pratolo (2012), Pengaruh Kualitas Sistem Informasi Keuangan Daerah Terhadap Kepuasan Aparatur Pemerintah Daerah Menggunakan Model Delone And Mclean Vol.13 No.1
- Jogiyanto (2015), *Analisis Dan Desain Sistem Informasi*, Andi Offset Yogyakarta
- Joreskog, Karl G (1977), *Structure Equation models in the Social Sciences: Specification, Estimation, and Testing*. North-Holland Publishing Company: 265-287.
- Joreskog, Karl G (1981), *Analysis of covariance Structures*, Scand J Statist.
- Joreskog, Karl G dan D. Sorbom (1993), LISREL 8, *Structural Equation Modeling With the SIMPLIS Command Languages*. Chicago: SSI, Inc.
- Joreskog, Karl G, D. Sorbom, (1999), LISREL 8 New Statistical Features, et al. 1. Scientific Software International.
- Joreskog, Karl G, D. Sorbom (1996) *LISREL 8, User's Reference Guide: Scientific Software International*, Inc.
- O'Brien, James A, Marakas, George M (2005), *Management Information System 9th Edition*, Mcgraw-Hill, New York
- Pujo hari sapatro, A. Djoko Budiyo, Alb.Joko Santoso (2016), Analisa Kesuksesan E-Government Menggunakan Success Model Delone And Mclean Studi Kasus Pada Pemerintah Kota Pekalongan, *SENTIKA* 2016
- Reni sari dewi, A. Holil Noor Ali, Hamim Maria Astuti (2012), Analisis Pengaruh Kualitas Informasi Pada Kuesioner Indeks Pengajaran Dosen Online Terhadap Kepuasan Pengguna Studi Kasus Fakultas Teknologi Informasi Its Vol.1 No.1
- Setyo Hari Wijayanto (2008), *Structural Equation Modeling dengan LISREL 8*, Graha Ilmu.
- Tata Sutabri (2012), *Analisis Sistem Informasi*, Andi Offset Yogyakarta
- Umi Nirimawati (2010), *Penulisan Karya Ilmiah*, Jakarta Genesis
- Wijanto, Setyo Hari, (2008) *Structural Equation Modeling*, Graha Ilmu Yogyakarta