

An Evaluation of Customer Satisfaction towards the Employee Self-Service Feature of Oracle's PeopleSoft System



Veronica

Abstract: *This study focuses on evaluating the success of information systems based on user satisfaction towards the ERP (Enterprise Resource Planning) application in PT. Bank XYZ, which in this case is the HR Application. This study adopted the Delone and McLean IS Success Model to test the relationship between variables (System Quality, Information Quality, Service Quality, Use, User Satisfaction and Net Benefits). The research data was obtained through literature reviews, interviews, and questionnaires with 175 respondents who were users of the HR Application at PT. Bank XYZ. The questionnaire data was analyzed using an SPSS (Statistical Package for the Social Science) program version 25. The analysis shows positive and significant results from the nine hypotheses. The results of the study addressed Service Quality, Use, and Net Benefits with an average of under 4.00 required development to improve employee satisfaction, which in this study there are recommendations for further development.*

Keywords : *user satisfaction, enterprise resource planning, Human Capital Management, Delone and McLean*

I. INTRODUCTION

The success of a company is influenced by several factors, including customer satisfaction because it can effected employee productivity and company can focused on enhance physical environment that facilitates the employees [16]. Physical environment is an instrument that can affected also the business results and employee welfare [8]. Information systems also play a significant role to promote the level of employee satisfaction. Therefore, a company is required to improve the management of its information systems, to achieve all employees can work the fullest.

Information systems user satisfaction can be used as a benchmark for the success of a particular information system. In the past, organizations measured the success of information systems through financial means like return of investment. Then it was developed after it was discovered that there are real and abstract advantages of information systems. Therefore, organizations started to use a balanced scorecard method [10] and benchmarking [19]. This user satisfaction then became part of developing information systems success

models. Several models have been developed by various researchers to measure the success level of information systems. From several information systems success models [1, 14, 18], the one which gained the most attention from researchers was the Delone and McLean Model, which was then refined to become the Delone and McLean IS Success Model [5], which mentioned that information quality, system quality, and service quality will influence the use and user satisfaction, and then will also affect the net benefits. These research results are supported by a study conducted by [9], who empirically tested the DeLone and McLean Model. The results demonstrate that the success of an information system is influenced by the quality of the information system and the quality of information that is produced from the related system.

PT. Bank XYZ is a company which is in the banking sector that provides various complete banking products and services for its corporate clients through corporate banking, treasury, trade finance, and cash management services. PT. Bank XYZ applies an Enterprise Resources Planning system to support its operating business processes. One of the ERP sub-models used by PT. Bank XYZ is Self-Service Management in Human Capital Management. In the HR Application of the ERP software, there is a Self-Service Management sub-module which can assist the ease of a company to manage its employees' data. The sub-module can assist Human Resources to do several transactions independently. The Self-Service Management sub-module has an Employee Self-Service feature. This feature is for employees, so that they can do various transactions regarding employee data. On another side, HR Admin is a back-end to arrange and verify every transaction done by employees and managers.

By applying the Self-Service Management sub-module, PT. Bank XYZ obtains several advantages, such as cost reduction, where previously it used paper to do transactions. Then there is time improvement where with this software, it does not take a significant amount of time to do a transaction. For instance, to get an approval on paper, it will have to be circulated to the related person

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Manuscript published on November 30, 2019.

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III. LITERATURE STUDY

According to [2], Human Capital Management is the study of how to train employees in a company, create jobs, work groups, develop employee’s capacity, identify how to develop employee performance and reward them for their performance. According to [13], success factors of an information system are:

- The success level of information system based on the efficiency and accuracy of the system.

- The success level of semantic information is defined by information provided based on its purposes.
- The success level of effectiveness is based on the effect of the information on the recipient of the information.
- The success level of functionality based and focuses on a functional scorecard to measure its performance, based on three output dimensions, which are the system performance, information effectiveness, and service performance.

According to [17], user satisfaction is an accumulation of different feelings and perspectives on the delivery of information in the form of products and services. This is overall about user satisfaction regarding an information system. Besides that, user satisfaction is related to the recipient's response to the use of information system outputs [3]. On the other sides, it states that information system user satisfaction can be measured using six variables, namely completeness of functions/features, stability/reliability, ease of use, innovation, security, and flexibility [21]. Some empirical test also conducted by [11] into the DeLone & McLean model and found out the end-user satisfaction of an information systems plays one of the most important role in determining the usage of application.

The DeLone and McLean (D&M) Information Systems Success Model is a framework and model to measure complex independent variables in information systems research. This method focused on the effectiveness of information systems, which based on some standard for evaluation process in organization. [12]

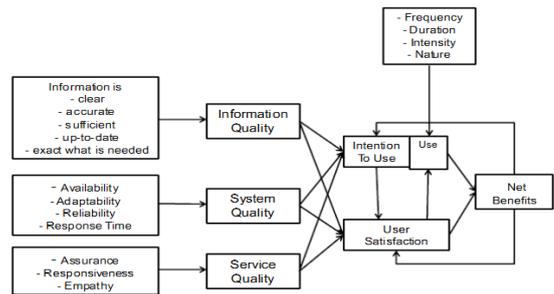


Fig. 1. DeLone and McLean Information Systems Success [6]

The table below shows the relationships between the six dimensions of the D&M model. [20]

Table I. Proposed Success of Relationships as Posited in the D&M Model [14]

System quality	→	System Use
System quality	→	User Satisfaction
System quality	→	Net Benefits
Information Quality	→	System Use
Information Quality	→	User Satisfaction
Information Quality	→	Net Benefits
Service Quality	→	System Use
Service Quality	→	User Satisfaction
Service Quality	→	Net Benefits
System Use	→	User Satisfaction
System Use	→	Net Benefits
User Satisfaction	→	System Use
User Satisfaction	→	Net Benefits
Net Benefits	→	System Use
Net Benefits	→	User Satisfaction

From the table above, it can be seen that there are six variables of the Delone and McLean method. The relationships between variables in the Delone and Mclean IS Success Model can be summarized as follows:

- A. Information Quality and Use**
The relationship between Information Quality and Use is seen to be very positive, as explained in a study of knowledge management systems which found that information quality has a significant relationship with intention or purpose to use [7]. In contrast, in another study, it was discovered that the relationship between information quality and use was not very strong. One of the reasons for this was because the information quality was included as a user satisfaction measurement component, not an evaluation as a separate construct [14].
- B. System Quality and Use**
According to [20], there is a significant correlation between information system performance (user ease, accuracy, etc.), user frequency, and system dependence. Ease of use and system flexibility depend on the current system quality. The better the system quality is, it will make the user want to use the system [7]. The analysis results by Petter and McLean also revealed a rather strong connection between system quality and use [15].
- C. Service Quality and Use**
The relationship between service quality and use is not very strong. A study found that providing training and education to users by using a system has an insignificant relationship between frequency of usage and desire to use [14].
- D. Information Quality and User Satisfaction**
There is a very strong connection between information quality and user satisfaction based on the journal review results [14]. Information that is easy to comprehend, complete, relevant over time, accurate, and appropriate will provide user satisfaction.
- E. System Quality and User Satisfaction**
There is a strong relationship between system quality and user satisfaction [9]. Several types of information systems have been examined, and the type of information system has an effect on measuring the system quality [14]. For instance, on websites, system quality measurements can be evaluated from the reliability and download time, which has a significant relationship with user satisfaction.
- F. Service Quality and User Satisfaction**
Service quality is similar to the speed or service given to users by the information systems management if problems or issues occur outside of the users' ability. Several researchers discovered different results related with the connection between service quality and user satisfaction. [14] revealed that the experience of the information systems support staff is highly connected with user satisfaction.
- G. Use and User Satisfaction**
[9] discovered that in a condition where usage is required, measuring usage based on the amount of usage per day and the frequency of usage is significantly connected with user satisfaction. Different from that, research carried out by Petter and McLean found that the

relationship between usage and user satisfaction is not significant [15].

- H. Use and Net Benefit**
Information systems usage will provide operational efficiency and effectivity, showing that there is a rather strong relationship between both of them [14]
- I. User Satisfaction and Net Benefits**
User satisfaction is strongly connected with net benefits [14] Users who are satisfied with a system will be more interested to access the information system again.

IV. RESEARCH METHODOLOGY

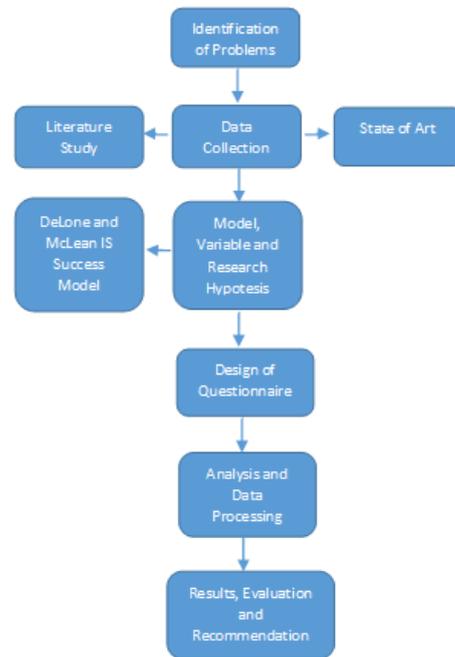


Fig. 2. Research Methodology

The research method used in this study was the Delone and McLean IS Success Model, which is a framework that was developed by Delone and McLean in 1992 in measuring a system's success. They identified six variables in measuring information systems success, including system quality, information quality, use, user satisfaction, individual impact, and organizational impact [4].

In its development, the Delone and McLean IS Success Model was refined by adding service quality and net benefits and replacing individual impact and organizational impact. Adding the service quality variable was due to the appearance of end-user computing, which resulted in having two roles in information systems organization, not just as an information provider but also as a service provider [5]. Meanwhile, the net benefits variable was made to replace individual impact and organizational impact as a simplification in measuring success in line with improving information systems activities in life [5].

In this research, in order to obtain appropriate data, the researcher used several data retrieval methods, which included a literature review, interviews, and questionnaires. Based on Slovin method, number of respondent that needed around 171 employees.

A total of 175 questionnaires were distributed to the employees of PT. Bank XYZ, based on the number allowed by PT. Bank XYZ. A data quality and variable quality analysis method was used. The data quality was tested to obtain question items that produced output that was appropriate with the research needs. Therefore, the researcher utilized a validity test and a reliability test. Based on the Delone and McLean IS Success Model used, the variables applied were divided into six variables, including information quality, system quality, service quality, use, user satisfaction, and net benefits. To determine the correlation relationships between variables, the researcher used a linear regression test method with the SPSS (Statistical Package for the Social Sciences) version 25 application.

V. RESULTS

A. Research Results

This research used the Delone and McLean IS Success Model by applying the variables of System Quality, Information Quality, Service Quality, Use, User Satisfaction, and Net Benefits. The following is the research model framework utilized in this research:

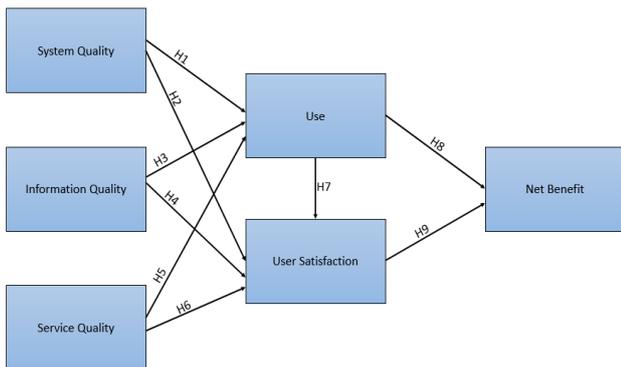


Fig. 3.Regression between Variables

To show the relationships between variables, the hypotheses that were examined in this research were as follows:

- H1: System Quality has a positive influence on Use.
- H2: System Quality has a positive influence on User Satisfaction.
- H3: Information Quality has a positive influence on Use.
- H4: Information Quality has a positive influence on User Satisfaction.
- H5: Service Quality has a positive influence on Use.
- H6: Service Quality has a positive influence on User Satisfaction.
- H7: Use has a positive influence on User Satisfaction.
- H8: Use has a positive influence on Net Benefits.
- H9: User Satisfaction has a positive influence on Net Benefits.

Based on every variables that already being identified, there are 21 indicator that included into the questionnaire as seen table below:

Table II. Variable and Indicator

Variable	Indicator	
System Quality	SQ1	Adaptability
	SQ2	Availability

	SQ3	Reliability
	SQ4	Response Time
	SQ5	Usability
Information Quality	IQ1	Completeness
	IQ2	Ease of Understanding
	IQ3	Personalization
	IQ4	Relevance
	IQ5	Security
Service Quality	SERVQ1	Assurance
	SERVQ2	Empathy
	SERVQ3	Responsiveness
Use	USE1	Nature of Use
	USE2	Number of Visit
	USE3	Number of Transaction
User Satisfaction	US1	Repeat Visit
	US2	User Survey
Net Benefits	NB1	Cost Saving
	NB2	Improved Decision Making
	NB3	Time Saving

Validity and reliability tests were conducted on each of the variables. In the validity test, each variable using Bivariate Pearson with correlation significance limit of 5%. With the number of respondents (n) at 30, the dF value = n – 2 = 28. So, based on the table, the r value with a Sig. (2-tailed) of 0.05 is 0.361.

Table III. Summary of Validity Test

Variable	Indicator	dF	r table	r count	Result
System Quality	SQ1	28	0.361	0.747	Valid
	SQ2			0.876	Valid
	SQ3			0.917	Valid
	SQ4			0.859	Valid
	SQ5			0.789	Valid
Information Quality	IQ1	28	0.361	0.907	Valid
	IQ2			0.907	Valid
	IQ3			0.770	Valid
	IQ4			0.829	Valid
	IQ5			0.834	Valid
Service Quality	SERVQ1	28	0.361	0.544	Valid
	SERVQ2			0.504	Valid
	SERVQ3			0.720	Valid
Use	USE1	28	0.361	0.567	Valid
	USE2			0.789	Valid
	USE3			0.690	Valid
User Satisfaction	US1	28	0.361	0.948	Valid
	US2			0.968	Valid
Net Benefits	NB1	28	0.361	0.815	Valid
	NB2			0.887	Valid
	NB3			0.837	Valid

A reliability test was done on every valid variable indicator. The testing was done by using the Alpha Cronbach method. The reliability coefficient value can be considered reliable if it has a value ≥ 0.600 .

Table IV. Summary of Reliability Test

Variable	Cronbach's Alpha	Result
System Quality	0.808	Reliable
Information Quality	0.812	Reliable
Service Quality	0.682	Reliable
Use	0.752	Reliable
User Satisfaction	0.918	Reliable
Net Benefits	0.843	Reliable

The relationships between variables in the Delone and McLean model were tested by using a linear regression test. A summary of the hypothesis test results can be seen in the following table:

Table V. Relationship between Variables

Relationship	Hypothesis	Level of Influence	Influence	Result
System Quality towards Use	H1	34%	Positive	H1 = positive → Accepted
System Quality towards User Satisfaction	H2	71%	Positive	H2 = positive → Accepted
Information Quality towards Use	H3	27%	Positive	H3 = positive → Accepted
Information Quality towards User Satisfaction	H4	72%	Positive	H4 = positive → Accepted
Service Quality towards Use	H5	34%	Positive	H5 = positive → Accepted
Service Quality towards User Satisfaction	H6	24%	Positive	H6 = positive → Accepted
Use towards User Satisfaction	H7	41%	Positive	H7 = positive → Accepted
Use towards Net Benefits	H8	42%	Positive	H8 = positive → Accepted
User Satisfaction towards Net Benefits	H9	34%	Positive	H9 = positive → Accepted

Based on the questionnaire results, the average values for every variable are as follows:

Table VI. Average Value for Variables

Variable	Average Value
System Quality	4.13
Information Quality	4.12
Service Quality	3.98
Use	3.97
User Satisfaction	4.08
Net Benefits	3.83
Overall Average	4.02

From the analysis results, it is recommended that the variables of Service Quality, Use, and Net Benefits with average values still below 4.02 should be improved for:

Table VII. Recommendation for Below Average Value

Variable	Indicator	Notes	Recommendations
Service Quality	Assurance	By improving the credibility, the system can ensure data confidentiality.	Use two-factor authentication when downloading data from the system.
	Empathy	Develop the system to provide input and responses to users about the actions done by users in the system, such as if the users often access certain system menus, it can advise the users to add the menus in the favorite menu or a bookmark.	Add a favorite menu or a bookmark.
	Responsiveness	Provide direct assistance by the expert staff when the users face obstacles when using the system.	Add additional staff who thoroughly understand about the system.
Use	Number of Visits	Do socialization to the employees to make them more interested to learn the system.	Distribute flyers and send emails about the newest information to all HR Application user employees once a month.
	Number of Transactions		
Net Benefits	Cost Saving	Provide simple reports about reducing costs before and after the system is implemented.	Distribute expenditure reports before and after the system implementation every month.
	Improved Decision Making	Integrate it with the key performance indicators (KPI) to analyze the performance of each employee.	Add the employee scoring feature.
	Time Saving	Improve the system response, so that it can do the requested task quicker.	Test the system to measure how long it takes the system to finish the requested task.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Based on the analysis results, the following conclusions can be drawn:

1. The Human Resources Application information system of PT Bank XYZ has a positive relationship with System Quality, Information Quality, Service Quality on Use, User Satisfaction, and Net Benefits.
2. The information systems can be stated as being good based on a 5-point Likert scale with a scale of 4.01 out of 5.00. The highest value is System Quality with a variable average value of 4.12. This shows that the system quality is already qualified and can be relied on for daily usage.
3. The lowest value is Net Benefits with a variable average value of 3.83. This is due to the lack of a reduction in the company's operational costs after the HR Application information system was implemented.
4. Use is positively and significantly affected by System Quality, Information Quality, and Service Quality.
5. User Satisfaction is positively and significantly influenced by System Quality, Information Quality, and Service Quality.
6. Net benefits are positively and significantly affected by Use and User Satisfaction.

B. Recommendations

Based on the analysis results and conclusions, the following suggestions are put forth for future research:

1. In future research, it is better to distribute questionnaires to the whole population, so that the researcher can see the condition of the information systems implemented at PT. Bank XYZ on a wider scale.
2. The research scope should be expanded, so that it not only has the Employee Self-Service feature but also the Manager Self-Service feature, in order that it can provide a more diverse depiction of the system usage.

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