Evaluation of the Open ERP Implementation for MSME (Case Study: Palembang City)

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Abstract

The emergence of Enterprise Resource Planning (ERP) systems has transformed the way businesses operate, particularly for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Serves as a relevant area of study to understand the impact, challenges, and benefits of using Open ERP. ERP is a method used by industries to enhance business process efficiency. This is done by sharing information both within and between business processes. This study aims to evaluate the implementation of Open ERP in the MSME ecosystem using the HOT-Fit method, which measures the fit between Human, Organization, and Technology components in the use of the Odoo application for MSMEs. Odoo is a open-source ERP software that is suitable for small and medium businesses. Based on the analysis results, it can be concluded that the implementation of OpenERP using the Odoo application only affects the human component. Simultaneous testing indicates that these three variables collectively influence net benefits.

Keywords: HOT-Fit, MSME, Open ERP, Odoo

1. INTRODUCTION

Information technology has become a key element in competitive strategy across various business sectors. The integration of technology in businesses of all scales, including Micro, Small, and Medium Enterprises (MSMEs), enables easier and more timely access to necessary information and supports more effective decision-making in a dynamic business environment. MSMEs are business activities conducted by individuals, households, or small-scale enterprises [1]. MSMEs have a significant impact on Indonesia's economic growth, leading to intensified competition among small and medium enterprises as a result of this contribution, however, MSMEs generally have various limitations such as human resources, access to information and budget [2]. One common method used in developing

integrated systems across various business sectors is the implementation of Enterprise Resource Planning (ERP).

ERP is a model for industries to strive for more efficient business processes by sharing information within and between business processes and conducting business electronically [3]. ERP is a modular software system designed to integrate the key functional areas of a company's business processes into a single unified system [4]. The ERP system aims to integrate key business processes of a company, such as ordering, manufacturing, accounts payable, and human resources [5]. ERP systems can be used by various institutions and business sectors to manage the effectiveness and efficiency of their business processes [6]. The emergence of ERP systems has transformed the way businesses operate, especially for MSMEs in Indonesia, one of which is in the city of Palembang, one of the major cities in Indonesia, is a dynamic hub for MSMEs actors.

Based on survey results and interviews, the transactional business processes conducted by most MSMEs, especially micro-enterprises, are still mainly manual or only utilize Android-based applications that are not well integrated. This results in incomplete and ineffective transaction reporting systems. To address this issue, there is a need for solutions to improve business processes in MSMEs by implementing ERP systems, one of which is Open ERP.

Open ERP has garnered significant attention due to its flexibility and cost-effectiveness, making it an attractive choice for MSMEs seeking to streamline their business operations. The implementation of ERP in the MSME sector in Palembang emerges as a relevant area of study to understand the impact, challenges, and benefits of using Open ERP. The Open ERP application that is widely used is Odoo, which was previously known as OpenERP. Odoo is a popular open-source ERP software that offers a variety of modules customizable to the needs of a company, it excels in ease of use and has very comprehensive integration [7]. Odoo is the best solution for small and medium businesses because it is open-source and can save costs [8].

This research aims to evaluate the implementation of Open ERP within the MSME ecosystem in Palembang City. Factors such as implementation success, user satisfaction, operational efficiency, and socio-economic implications will be examined. The study also aims to provide crucial insights into the feasibility and effectiveness of Open ERP in enhancing the competitiveness and sustainability of MSMEs in Indonesia. The analysis method used in this research is the HOT-Fit model, as it is simple and also produces comprehensive recommendations [9].

Through comprehensive analysis of qualitative and quantitative data, coupled with case studies and interviews with stakeholders, this research can contribute to existing knowledge about ERP system implementation in the case study of MSMEs in Palembang City. The findings of this research are expected to provide

information to policymakers, business owners, ERP vendors, and academics to facilitate information-based decision-making and encourage the growth of MSMEs in cities in Indonesia.

2. METHODS

This research is a qualitative study, which is a research method that aims to describe or deepen understanding about a particular phenomenon. It focuses on providing a more in-depth understanding of the subject matter being studied [10]. The qualitative research method allows for in-depth exploration and interviewing of respondents based on their responses, where interviewers/researchers also seek to understand their motivations and feelings [11].

2.1. Data Collection Method

Data collection for this research is conducted through interviews, questionnaires, and literature review. Interviews are conducted with 12 (twelve) samples of MSME actors in Palembang City. Closed-ended questionnaires are used, which means the questionnaire provides predetermined answer choices [12] which consists of 11 questions and 5 assessment scales and is adapted to the existing components of the analysis method related to the use of the Odoo application, and is distributed using an online form. This questionnaire is used because it is more practical, making it easier for respondents to provide answers. Literature studies are used to collect data through several books and journals that are closely related to the research object.

2.2. Analysis Method

Human-Organization-Technology (HOT) Fit is an evaluation framework used to assess information systems. The HOT-Fit model places significant components of information systems: Human, Organization, and Technology, and the suitability of these components [13][14]. HOT-Fit focuses not only on the evaluated system components themselves, but also on additional supporting components that make this model suitable for use in research with the aim of producing comprehensive recommendations for improvement and application development [15].

This research was conducted to measure 8 (eight) dimensions of success of information systems using the HOT-Fit method based on system quality, information quality, service quality, system use, user satisfaction., organizational structure, organizational environment and net benefit as depicted in Figure 1.
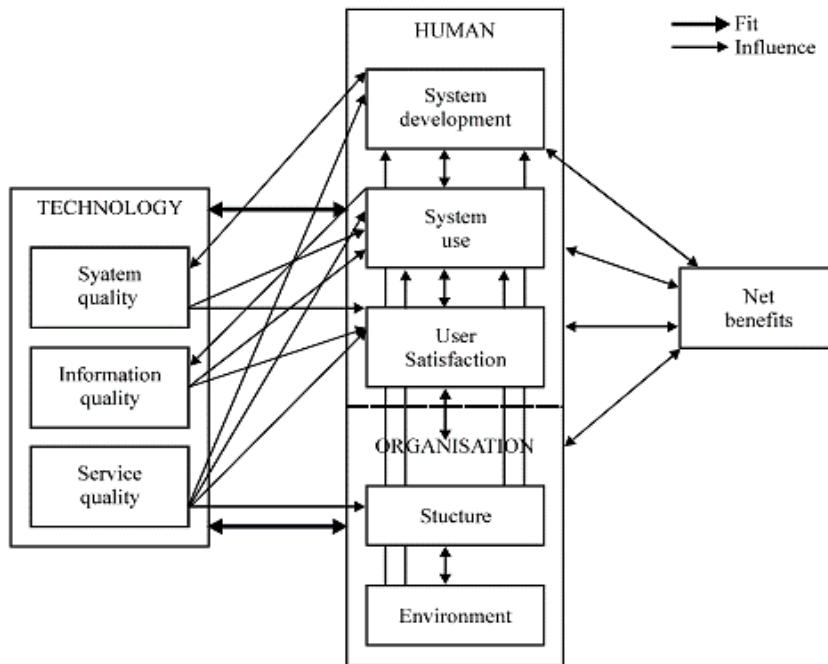
Figure 1. Hot-Fit Model [14]

2.3. Research Hypothesis

The hypothesis in this research consists of positive statements and negative statements. H_a is a positive statement from the hypothesis of this research, namely that all independent variables simultaneously have an influence on the dependent variable, while H_o is a negative statement in this research, namely that all independent variables simultaneously do not influence all dependent variables. The following is a description of each hypothesis in this research:

1) H_a: Do human, organizational and technological variables simultaneously influence the benefits of the system.
2) H_a1: Do the human variables of the OpenERP system have an influence on the benefits of the system to users.
3) H_a2: Do the organizational variables of the OpenERP system have an influence on the benefits of the system for MSMEs
4) H_a3: Do the technological variables of the OpenERP system have an influence on the benefits of the system.

2.4. Data Testing

The validity and validity of a research result is largely determined by the measuring instruments used. The types of testing carried out were validity tests and reliability

tests to test the seriousness of respondents' answers using SPSS software. Hypothesis testing in this research was carried out using the t test and f test. The t test is carried out using the significance level of 0,05 ($\alpha = 5\%$). Acceptance or rejection of the hypothesis is carried out using the following criteria:

1) If the significant value is > 0.05 then the hypothesis is rejected (the regression coefficient is not significant). This means that partially the independent variable does not have a significant influence on the dependent variable.
2) If the significant value is ≤ 0.05 then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

The f test is carried out using a significance level of 0,05 ($\alpha = 5\%$), with conditions:

1) If the significant value is > 0.05 then the hypothesis is accepted (the regression coefficient is not significant). This means that the five independent variables simultaneously do not have a significant influence on the dependent variable.
2) If the significant value is ≤ 0.05 then the hypothesis is rejected (significant regression coefficient). This means that simultaneously the independent variable has a significant influence on the dependent variable.

3. RESULTS AND DISCUSSION

Based on the results of data processing carried out using the HOT-Fit method on the suitability of the relationship between Human, Organizational and Technology components in the use of the Odoo application for MSMEs in the city of Palembang, the results were obtained:

3.1 The Influence of Human on Net Benefit

H_o : *Human has a significant influence on Net Benefit*
H_a : *Human has no significant influence on Net Benefit*

Table 1. The Influence of Human on Net Benefit

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,508	1,245		1,211	,254
	Rata_rata_Human	,525	,269	,525	1,953	,079

a. Dependent Variable: Average_Benefit

From the data in Table 1, it can be seen that the significant value Rata_rata_Human is 0.079 is greater than significance level 0.05, so the null

hypothesis (H_o) is accepted. It can be concluded that the human variable has an influence on Net Benefit.

3.2 The Influence of Organization on Net Benefit

H_o : The organization has a significant influence on Net Benefit
H_a : The organization does not have a significant influence on Net Benefit

Table 2. The Influence of Organization on Net Benefit

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,339	1,052		6,024	,000
	Rata_rata_Organisasi	-,593	,255	-,593	-2,330	,042

a. Dependent Variable: Average_Benefit

Based on the data in Table 2, it can be seen that the significant value Rata_rata_Organisasi is 0.042 is less than significance level 0.05, so the null hypothesis (H_o) is not accepted. It can be concluded that organizational variables have no influence on Net Benefit.

3.3 The Influence of Technology on Net Benefit

H_o : Technology has a significant influence on Net Benefit
H_a : Technology does not have a significant influence on Net Benefit

Table 3. The Influence of Technology on Net Benefit

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,167	1,318		1,644	,131
	Rata_rata_Teknologi	,500	,373	,391	1,342	,209

a. Dependent Variable: Average_Benefit

Based on the data in Table 3, it can be seen that the significant value Rata_rata_Teknologi is 0.209 is less than significance level 0.05, so the null hypothesis (H_o) is not accepted. It can be concluded that the technology variable has no influence on Net Benefit.

3.4 Simultaneous Hypothesis Testing (F-Test)

The Simultaneous Influence of Human, Organization, and Technology on Net Benefit

H_o ： : *Human, Organization and Technology have a significant influence on Net Benefit*
H_a ： : *Human, Organization and Technology do not have a significant influence on Net Benefit*

Table 4. The Influence of Human, Organization, and Technology on Net Benefit

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	2.083	3	.694	1.961	.199[b]
1	Residual	2.833	8	.354		
	Total	4.917	11			

a. Dependent Variable: Average_Benefit

b. Predictors: (Constant), Average_Technology, Average_Human, Average_Organization

From the results in Table 4, it can be seen that the significant value of 0.199 is more than significance level 0.05, so the null hypothesis (H_o) is accepted. The conclusion is that human, organizational and technological variables together have an influence on Net Benefit. Based on the results of empirical testing that has been carried out, it is found that:

1) Hypothesis H1 states that humans have a significant influence on acceptable Net Benefit. The results of the t test show significant results where the value obtained is 0.079 which is greater than 0.05 so it can be concluded that humans have a significant influence on Net Benefit (profits), meaning that humans have a big influence on understanding how to use the Odoo application both from the appearance and menu and format on the Odoo application

2) Hypothesis H2 states that the organization has a significant influence on Net Benefit and cannot be accepted. The t test results show significant results where the value obtained is 0.042, which is smaller than 0.05, so it can be concluded that the organization does not have a significant influence on Net Benefit (profits), meaning that the organization has no influence on understanding how to use the application, both in terms of appearance, menu and format on the Odoo application

3) Hypothesis H3 states that technology has a significant influence on Net Benefit and cannot be accepted. The t test results show significant results where the value obtained is 0.209 which is smaller than 0.05, so it can be concluded that technology does not have a significant influence on Net Benefit (profit).

4) The results of H4 for testing carried out simultaneously between human, organizational and technological variables state that these three variables together have a significant effect.

The results of the analysis of the tests that have been carried out found that the implementation of ERP with the Odoo application for MSMEs in Palembang City using the HOT-Fit method only human components and human variables, organization and technology simultaneously have an influence on Net Benefit so that there is a suitable relationship between the Human, Organizational and Technology components.

4. CONCLUSION

Based on the results of the analysis, it can be concluded that implementing Open ERP using the Odoo application has an effect on humans, in this case MSMEs in the city of Palembang. This can be seen from the results of testing the hypothesis that humans, organization and technology are partial or tests carried out based on each variable show that the three variables that have a significant effect on net benefit are only the human variable. Then the next test which was carried out simultaneously showed that these three variables had an influence on net benefit.

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