



## Risk Management Assessment at Primary Health Clinic to Support Quality Improvement

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**ABSTRACT:** The rapid increase in population provides opportunities for businesses in the health sector to develop. Health workers began to look for profits and channel self-actualization by opening primary clinics. However, in running the primary clinic business, the owner faces obstacles in managing risk at the Primary Clinic because there are no guidelines for carrying out risk management at the clinic. Based on this premise, the research respondents were primary clinic owners in the city of Bandung. Data collection was carried out using a questionnaire containing the type of clinic, clinic age, turnover per month, average number of patients per day, risk awareness, application of risk management, and statements related to risk management and quality of health services. Data analysis was carried out using the descriptive statistical method, and hypothesis testing with multiple linear regression. This hypothesis test proves that risk management can support the improvement of the quality of health services with an R-squared value of 75.9%. Therefore, the purpose of this study is to provide a solution to increasing the awareness of clinic owners about risk management by building a risk culture in the Primary Clinic entity. In addition, procedures for carrying out risk assessments are carried out starting from determining the context in the primary clinic, identifying non-medical risks, analyzing, evaluating, to determining mitigation activities. After that, strategic initiatives and monitoring plans are determined because risk management is a long-term and continuous process to support business processes and improve the quality of health services.

**KEYWORDS:** Health Service, Multiple Linear Regression, Primary Clinic, Quality, Risk Management, Risk Assessment.

### INTRODUCTION

Along with the rapid population growth, the need for health facilities is also increasing. High demand for consumer goods/products/services in the health sector is one of the supporting factors for economic growth [1]. Health workers see this as an opportunity to gain profit and channel self-actualization so that many have ventured into the business world by opening primary clinics. Primary clinic is a clinic that provides basic medical services, both general and special [2].

Clinics are exposed to two types of risk, namely clinical risk, and non-clinical risk (corporate risk). A risk management approach is needed in the clinic as an intrinsic framework of healthcare organizations that encourages to assess and address identified risks in organizations to ascertain the probability of occurrence, the degree of impact to scope, cost, and quality [3]. However, the clinic owner, who is usually a doctor, does not have sufficient knowledge regarding managing risk, especially corporate/non-clinical risks that can impact business processes in the clinic. The non-clinical risks referred to include financial risk, operational risk, legal/compliance risk, and reputation risk. The obstacle faced by primary clinics in implementing risk management is that there are no guidelines for conducting risk management in primary health clinics. Medical risks have been identified through standard clinical risk operating procedures but not with non-medical risks. Whereas ACHS states that risk management and quality improvement in health care should be part of both strategic and operational planning in every clinical, nonclinical, and service area of healthcare [4]. Therefore, risk management is one of the variables that can support quality improvement and business processes in the clinic so that the clinic can develop and be of good quality.

This study explains the relationship between risk management and the quality of health services at the primary clinic. While the research objective is to help primary health clinics apply risk management with a consistent and integrated approach so that their business can survive for a longer period and be able to compete with its competitors for quality improvement.



**LITERATURE REVIEW**

Risk management is defined as the systematic process of identifying, evaluating, and addressing potential and actual [5]. Risks can be grouped into several categories including financial, operational, legal/compliance and reputation. The risk management process consists of establishing the context, identifying risks, analyzing risks, evaluating risks, and treating risks. While risk treatment options consist of risk mitigation, risk avoidance, risk sharing, risk acceptance, and risk exploitation.

Quality Indicators are benchmarks used to assess the level of achievement of health service quality targets in independent practice of doctors and dentists, clinics, community health centers, hospitals, health laboratories and transfusion unit’s blood [6]. The quality indicators used in the clinic include hand hygiene compliance, compliance with the use of Personal Protective Equipment (PPE), patient identification compliance, and patient satisfaction.

**METHODOLOGY**

The type of research used in this study is a mixture of qualitative and quantitative. The data collection method used in this study is a field research method, namely a primary data collection method that is obtained directly in the form of opinions or opinions from the primary clinic owner by answering all the questions contained in the questionnaire. The resources used in this study was the questionnaire contains a set of questions about the type of clinic, clinic age, turnover per month, average number of patients per day, risk awareness, application of risk management, application of risk management, and statements related to risk management and quality of health services. The sampling used was based on the opinion of Kerlinger and Lee (2000) who suggested 30 samples as the minimum number of samples in quantitative research [7]. So that the number of samples used for this research is 42 samples. The research design that forms the basis of this research is shown below:

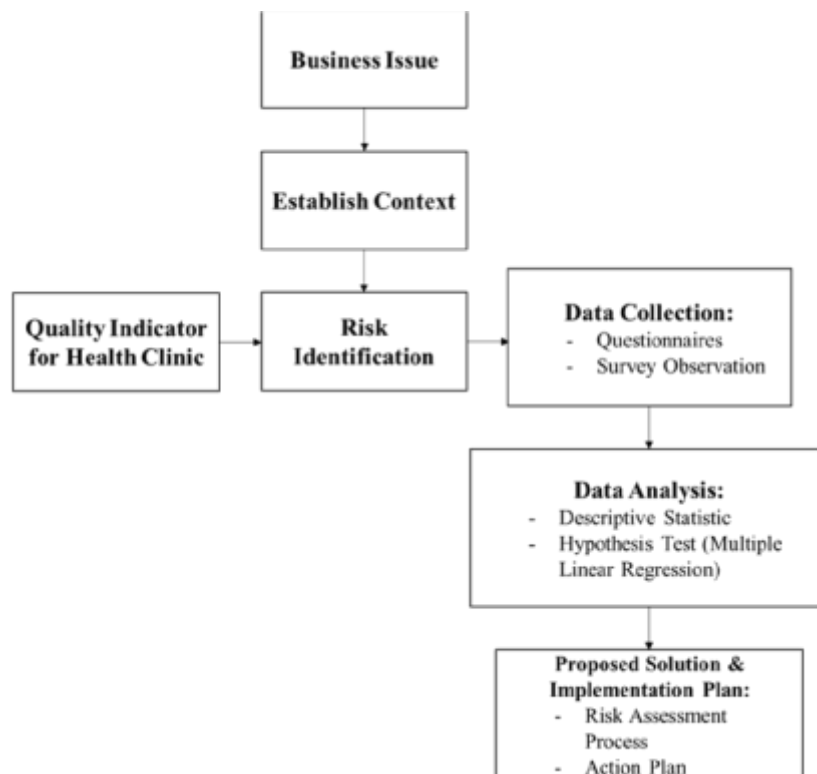


Figure 1. Research Design

The data was processed using descriptive statistical methods and multiple linear regression to test the hypothesis. The purpose of multiple linear regression analysis is to determine the affect of two or more independent variables (X) on the dependent variable



(Y). Independent variables are risk categories identified at the primary clinic including financial risk, operational risk, legal/compliance risk, and reputation risk. Meanwhile, the dependent variable is a collection of health service quality indicators including hand hygiene, patient identification, use of PPE, and patient satisfaction. The research model used to perform a multiple linear regression test is shown in Figure 2. The hypothesis construction on which this test based is:

H<sub>1</sub>: There is an influence of Financial Risk, Operational Risk, Legal/Compliance Risk, Reputation Risk on the Quality of Health Services.

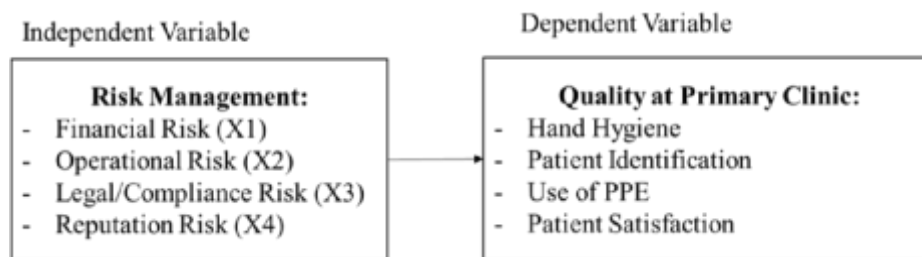


Figure 2. Research Model

While the multiple linear regression formula used is:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_nX_n + \epsilon$$

Where: Y: Dependent Variable (Quality);  $\alpha$ : Constant value;  $\beta$ : Regression coefficient for independent variable; X: Independent variable;  $\epsilon$ : Error term.

**FINDINGS AND SOLUTION**

**Descriptive Statistics**

Descriptive statistics is the first method used to analyze data. Descriptive statistics are data collection and presentation methods that provide useful information[8]. The results of the descriptive statistics are the mean, standard deviation, and the coefficient of variation of the Risk Management sub-variables. Mean or average is the comparison of the total amount of data and the amount of data. While standard deviation is a statistical value that is used to determine how the data is distributed in a sample and to see how heterogeneous the data elements are in a data. The smaller the standard deviation value, the more pointed the curve will be. The coefficient of variation is calculated to determine the ratio (ratio) between the standard deviation and the average value. The coefficient of variation is usually expressed as a percentage which measures the diversity or variation of a data group known as the coefficient of variation (CV). Variables with larger CVs indicate that the data is more varied, more spread out, or more diverse than variables with smaller CVs.

Table 1. Descriptive Statistics Independent Variable

No	Sub variable	N	Mean	Std. Deviation	CV
1	Financial Risk (F1, Financial report)	42	4,74	0,445	0,09
2	Financial Risk (F2, Unexpected cost)	42	3,36	0,759	0,23
3	Financial Risk (F3, Patient's ability to pay)	42	2,98	1,024	0,34
4	Financial Risk (F4, Uncovered investment costs)	42	3,26	0,989	0,3
5	Financial Risk (F5, Lost assets)	42	3,36	0,879	0,26
6	Financial Risk (F6, Disbursement of funds)	42	3,26	1,127	0,35
7	Operational Risk (O1, Patient waiting time)	42	3,26	1,061	0,33
8	Operational Risk (O2, SOP)	42	3,26	1,083	0,33
9	Operational Risk (O3, Medical supply)	42	4,6	0,497	0,11



10	Operational Risk (O4, Misdiagnosis)	42	2,88	1,152	0,4
11	Legal/Compliance Risk (C1, Code ethics)	42	2,71	1,255	0,46
12	Legal/Compliance Risk (C2, Patient safety compliance)	42	2,5	1,042	0,42
13	Legal/Compliance Risk (C3, Rules, laws, and document to open the clinic)	42	4,4	0,665	0,15
14	Legal/Compliance Risk (C4, Medical waste compliance)	42	2,64	1,008	0,38
15	Legal/Compliance Risk (C5, Patient consent)	42	4,33	0,612	0,14
16	Reputation Risk (R1, Excellent service)	42	4,67	0,477	0,1
17	Reputation Risk (R2, Credibility and quality of health worker)	42	4,6	0,544	0,12

Descriptive statistics were performed on 6 financial risk sub-variables, 4 operational risk sub-variables, 5 legal/compliance risk subvariables, and 2 reputation risk sub-variables. From this method, information is obtained that the sub variables that have the smallest CV of the four variables are financial reports, medical supply, patient consent, and excellent service. Table 1 is the result of the descriptive statistical sub-variables for the independent variables. Meanwhile, Table 2 shows the results of the descriptive statistics of the dependent variable where the sub-variable that has the smallest CV value is patient satisfaction.

**Table 2.** Descriptive Statistics Dependent Variable

No	Sub variable	N	Mean	Std. Deviation	CV
1	Hand Hygiene (Y1)	42	2,9	1,322	0,456
2	Identification Patient (Y2)	42	6,43	1,755	0,273
3	Personal Protective Equipment (Y3)	42	7,67	1,004	0,131
4	Patient Satisfaction (Y4)	42	21,81	1,77	0,081

**Multiple Linear Regression**

The linear regression hypothesis test was carried out to find out how much the level of influence is between the independent (independent) variables and the dependent (dependent) variables. This test can be used as a consideration for decision making by knowing the influence of risk management on the quality of health services. The data has been tested for normality and classic assumption tests (multicollinearity, heteroscedasticity, and autocorrelation).

After carrying out the normality test and classical assumption test, the multiple linear regression decision is made based on the significance value and the F table. Based on the significant value, the result of data processing is 0,000. If the value of Sig. <0,05, it means that the independent variable (X) influences the dependent variable (Y) [9]. Meanwhile, if seen from the calculated F value and F table, the calculated F obtained from data processing is 29,128 as shown in Table 3. While the F table obtained is 2,16 and if the calculated F value > F table, it means that the independent variable (X) influences the dependent variable (Y) [10]. From the two test results above, it can be concluded that the risk management variable affects the quality of health services so that H<sub>1</sub> can be accepted.

**Table 3.** Anova of Multiple Linear Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.305	4	2.076	29.128	.000b
	Residual	2.637	37	.071		
	Total	10.942	41			
a. Dependent Variable: Quality						
b. Predictors: (Constant), Reputation Risk, Legal/Compliance Risk, Operational Risk, Financial Risk						



The magnitude of the influence of all independent variables on the dependent variable is obtained in the model summary table, as shown in Table 4. This influence is symbolized by R (correlation) which has a value of 0,871. As can be seen in the model summary table, the value in the R square column is 0,759, meaning that the influence of risk management variables consisting of financial risk, operational risk, legal/compliance risk, and reputation risk on the quality of health services is 0,759 or 75,9%. The R-Square value is classified as strong if it is greater than 0.67, moderate if it is greater than 0.33 but less than 0.67, and weak if it is greater than 0.19 but less than 0.33 [10]. In this study, the R square value is classified as strong.

**Table 4.** Model Summary Linear Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.871 <sup>a</sup>	.759	.733	.26698	1.462
a. Predictors: (Constant), Reputation Risk, Legal/Compliance Risk, Operational Risk, Financial Risk					
b. Dependent Variable: Quality					

The effect can also be based on the Adjusted R Square value where the R Square value is more adjusted and is usually the most accurate. The Adjusted R Square value is 0,733 or 73,3% for the influence of the risk management independent variable on the quality of health services as the dependent variable. While the level of accuracy of the regression model can be seen in the column Standard Error of the Estimated listed is 0,26698. The standard deviation around the regression estimate line, which measures the variability of the actual Y value of the predicted Y, is the standard error of the estimate.

**Table 5.** Coefficient Multiple Linear Regression

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	
	B	Std. Error	Beta		
1	(Constant)	8.101	.572		14.159
	Financial Risk	.059	.043	.114	1.373
	Operational Risk	-.149	.043	-.307	-3.495
	Legal/Compliance Risk	-.679	.074	-.804	-9.171
	Reputation Risk	-.292	.090	-.270	-3.242

The constants of multiple linear regression for the four independent variables are  $\beta_1 = 0,059$ ,  $\beta_2 = -0,149$ , and  $\beta_3 = -0,679$ , and  $\beta_4 = -0,292$ . The values of these constants are then entered into the multiple linear regression equation as follows:

$$Y = 8,101 + 0,059X_1 - 0,149X_2 - 0,679 X_3 - 0,292X_4$$

**Business Solution**

Based on the demographic data obtained from the questionnaire results, it is known that only 26,20% of clinic owners are familiar with the concept of risk management, while 73,80% are not familiar with the concept of risk management. Risk management that was managed at the primary clinic, 42,9% was identification, 14,3% until the mitigation stage, and 21,4% did not manage. In fact, based on the results of the Hypothesis Test with Linear Regression, Risk Management has a correlation value/relationship with Quality that is equal to 0,871 and has an influence on improving the quality of health services by 75,9%. Therefore, the proposed solution in this research is a risk management process from determining the context to mitigation and increasing risk awareness with implement risk culture.



Risk culture is the way in which organizations understand risks and realize that their behavior and perceptions of risk will influence how these risks are managed. Risk culture contains a set of shared attitudes, values and practices that characterize how an entity considers risk in its daily activities. Building a risk culture goes through quite a long stage [11]. However, if it is done consistently, over time this culture will form and become an integral part of daily activities at the primary clinic. Chart Gandz J. & Seijts, G (2013) explains how to build and maintain a risk culture in an organization that can be implemented by Primary Clinics [12].

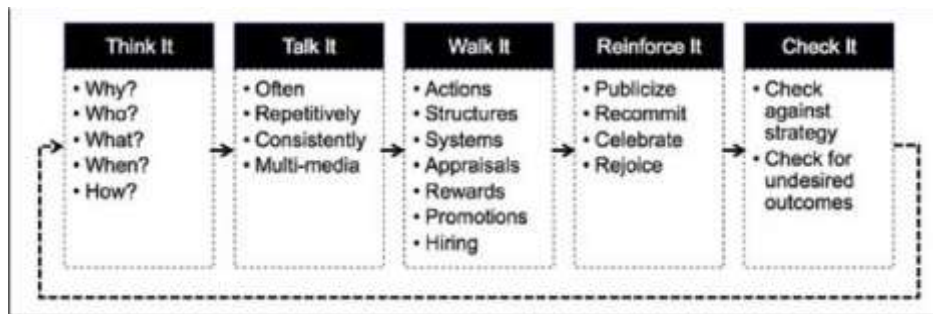


Figure 2. Building and Developing Risk Culture (Source: Chart Gandz J. & Seijts, G (2013))

Meanwhile, the first step in the risk management process is setting the context. Determination of this context is adapted to the clinical conditions of each primary clinic. The context determination process consists of five stages including as shown in Table 6.

Table 6. Establish Context of Primary Clinic

No	Activity	List of Activity
1	Analyze the internal and external environment of each Primary Clinic	Vision, mission, goals, and objectives
		Regulations and provisions
		Structure, policies, and procedures
		Tangible and intangible aspects
		Stakeholders (internal and external)
		SWOT analysis
		Resource
		The strategic plan and annual performance plan
2	Describe the scope of implementation of Risk Management in Primary Clinics	Level of application: All primary clinic entities
		Scope of application: processes, activities, services, actions
		Implementation goals and objectives
		The nature of the resulting decisions
		Time and location of activities
		Required preliminary studies
		Required resources
		Roles and responsibilities of related parties
Relationship with other activities		



3	Identify and define interested parties	External: Patients, drug suppliers, medical equipment suppliers
		Internal: Health workers (doctors and nurses), non-medical such as management and office boy
4	Identify and define criteria for each consequence and likelihood	Likelihood and consequence criteria table
		Risk appetite (risk matrix and risk level)
5	Create a report on the results of determining the context	Documenting the Risk Management Charter and the results of the context analysis can be in the form of policies or procedure.

Once the context is determined, the risks in the primary clinic are identified. Risk identification in the primary clinic is generally carried out by looking at historical data on unwanted events. Identified risks consist of financial, operational, legal/compliance, and reputation risks. If it has been identified, then a risk analysis is carried out by determining the level of frequency and consequence of each risk which will later become the risk level for evaluating mitigation activities. The results of the risk assessment serve as a benchmark for determining action plans containing steps in treating risks with program initiatives and strategies taken to overcome identified risk problems. Besides that, a monitoring plan is carried out which is an evaluation of the initiatives and strategies described in the action plan.

**REFERENCES**

1. Noveria, M., et al. (2018). Pertumbuhan Penduduk dan Kesejahteraan. Lembaga Ilmu Pengetahuan Indonesia (LIPI).
2. Ministry of Health of the Republic of Indonesia. (n.d.). Regulation Number 28/MENKES/PER/I/2011 Concerning Clinics.
3. Aal, M. F., & Ali, H. A. (2012). Risk Management in Healthcare: A review article. Journal of Innovation, Management and Technology, Vol. 3, No. 4.
4. Australian Council on Healthcare Standards (ACHS). (2013). Risk Management and Quality Improvement Handbook. Sydney: Australia.
5. Singh, B., & Ghatala, M. (2012). Risk Management in Hospitals. International Journal of Innovation, Management and Technology. 3. 10.7763/IJIMT. 2012.V3.266.
6. Ministry of Health of the Republic of Indonesia. (2022). Regulation Number 30 about National Indicator of Quality of Health Service.
7. Kerlinger, F. N., & Howard, B. L. (2000). Foundations of Behavioral Reserach. 4th Edition. Florida: Harcourt Inc.
8. Walpole, R. (1995). Pengantar Statistika. 3th Edition. Jakarta: PT. Gramedia Pustaka Utama.
9. Ghozali, I. (2011). Aplikasi Analisis Multivariate dengan Program IMB SPSS 19. Semarang: Badan Penerbit Undip.
10. Sujarweni, V. W. (2014). SPSS untuk Penelitian. Yogyakarta: Pustaka Baru Press.
11. Chin, W. (1998). The Partial Least Squares Approach to Structural Equation. Modelling Modern Methods for Business Research, 295, 336.
12. Gandz, J., & Seijts, G. (2013). Leadership and Risk Culture. London, Ontario: Richard Ivey School of Business.

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