The Influence of Leadership and Competence in *Puskesmas* Preparedness for Supporting Flood Disaster Management (Case Study of Samarinda City in East Kalimantan Province, Indonesia)

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Abstract. Floods are frequent natural disasters in Indonesia. Samarinda city has a very high frequency of floods, thus demanding preparedness for disaster risk reduction as a form of national defense. Preparedness is part of the disaster management cycle, in order to reduce mortality, disability, and suffering of the victims, leadership and competence of *Puskesmas* management is required as elements of leadership in the health centers. Using quantitative research methods, the objective is to analyze the influence of leadership and competence towards *Puskesmas* preparedness. Total 148 samples were analyzed with multiple regression techniques. The results showed leadership and competence together affect positively and significantly related to *Puskesmas* preparedness. All variables have positive coefficient value and significance at P <0.05. Leadership gave positive contribution of 3% of *Puskesmas* preparedness, while the competence gave 10%, meaning there are other factors that contribute to *Puskesmas* preparedness. Suggestion of this research is to improve leadership through the development of managerial leadership and improve competencies through training of disaster management.

Keywords: *Flood, Flood Disaster Relief Effort, Health Center Preparedness, Leadership, Competence.*

I. INTRODUCTION

Disasters have a detrimental impact, threatening the safety of human life, disrupt the community and affect national stability. Since 2016, 174 natural disasters occurred in Indonesia, including the catastrophic floods of 56 events, landslides 29 incidents, tornado 81 events, volcanic eruptions 2 incidents, forest and land fires two events, earthquakes 1 events, floods and landslide three events [1].

East Kalimantan Province is a region that has a multi-hazard risk with high disaster risk index (score of 165 out of 33 provinces in Indonesia) [2]. The percentage of natural disasters in East Kalimantan province from the year 1815-2011 is presented in Figure 1.1.

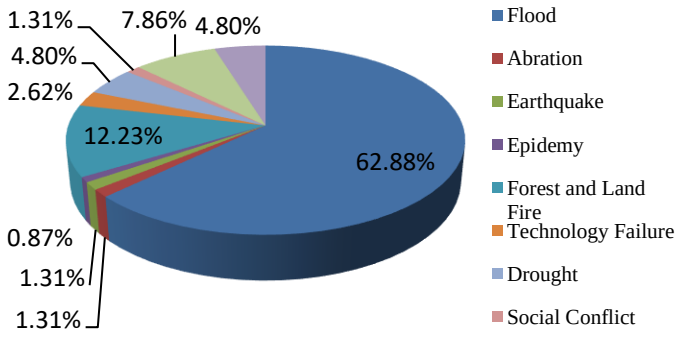

Figure 1.1 Percentage of Total Disaster in East Kalimantan Province
Source: Data & Disaster Information Indonesia (DIBI) of 2012 [3].

From Figure 1.1 it can be seen that the most common disaster in East Kalimantan from the year 1815-2011 is flood with 144 events (63%), forest fires and land 28 events (12%), extreme weather 18 events (8%), land landslides and droughts 11 events (5%), 6 technological failure events (3%), extreme waves, earthquakes, and social conflicts 3 events (1%), and epidemics and plagues 2 events (1%).

Samarinda city is one of the areas of East Kalimantan province that almost every year hit by floods. Kota Samarinda is number 44 from 317 regencies/cities in Indonesia which have high flooding risk index with a score of 36 [2]. Flood has the highest frequency and impact on the city of Samarinda and tends to increase until 2011[4]. The incidence of floods for the year 2009-2011 in the city of Samarinda is presented in Figure 1.2.

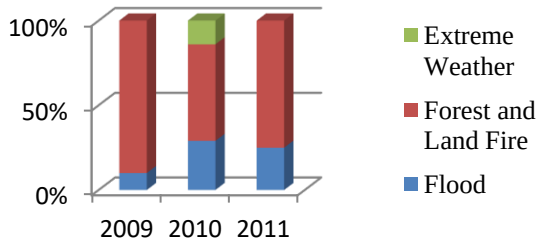

Figure 1.2 Percentage of Flood in Samarinda (2009-2011)
Source: Data & Disaster Information Indonesia (DIBI) of 2012 [5].

Some factors contributing to Samarinda flood are: influence of morphology, slope of the riverbed, region crossed by the River Karangmumus (wide of watershed 320 km^2), precipitation, sedimentation, drainage system, garbage, river meandering channel, capacity, flooding submissions, local flooding, land use change, Mahakam river tidal influence, as well as people behaviors that increase the risk of flooding [4].

The flood disaster in the city of Samarinda in 2012 was 21 times the incident with fatalities of 7 people, displaced 15,480 people, suffered about 139,592 people, 243 people were injured, 2000 houses were severely damaged, and 41 houses with minor damage [5]. Data disasters in Samarinda in 2012 are presented in Table 1.1.

Table 1.1 Disaster in Samarinda

Events	Number of events	Died	Injury	Lost	Suffer	Evacuate	House broke heavily	House broke lightly
Flood	21	7	243	-	139 592	15,480	2,000	41
Building Fire And Settlements	105	6	9	-	2,054	-	-	-
Forest Fire And Land	22	-	-	-	-	4	-	-
Drought	2	-	-	-	-	-	-	-
Social Conflict	1	-	-	-	-	156	-	-
Extreme Weather	4	-	3	-	597	-	11	61
Landslide	3	-	-	-	122	-	23	7
Amount	**158**	**13**	**252**	-	**142 365**	**15 640**	**2034**	**109**

Source: Data & Disaster Information Indonesia (DIBI) of 2012 [5].

The city of Samarinda which suffered a flood disaster are the districts of Samarinda Ilir (village Selili, Sungai Dama, Sidomulyo, Pelita), district of Samarinda City (village Bugis, Pelabuhan, Sungai Pinang Luar, Karang Mumus), district of Samarinda Ulu (village Teluk Lerong Ilir, Jawa, Dadi Mulya, Sidodadi, Gunung Kelua, Air Hitam, Air Putih, Bukit Pinang), district of Sungai Pinang (village Temindung Permai, Bandara, Sungai Pinang Dalam, Mugirejo, Gunung Lingai), and the sub-district of North Samarinda (village Lempake, Sempaja Selatan, Sungai Selatan, Sungai Siring, Tanah Merah, dan Sempaja Utara).

Seeing the magnitude of the disaster impact on the lives of people in Samarinda, the government has an obligation to minimize the impact by optimizing disaster relief efforts. According to BNPB (2010) Disaster management is the responsibility of the state as one of the manifestations duty to protect the people and the country of Indonesia with the aim to provide protection to the lives and livelihood of the people in order to realize common prosperity [6].

Under Law No. 3 of 2002 on National Defense, that the National Defense System is universal to confront all forms of threats. Disaster management should be implemented and integrated with total measured, structured and directed by mobilizing all the potentials that exist in accordance with the implementation of the state defense system. Disaster includes aspects of a very broad and can threaten public and state security, required the involvement and cooperation of various parties, including government, non-government, and the community to address the threat caused by the disaster and for the effectiveness of disaster relief efforts.

According to Reilly and Markenson, there are three key strategic emergency response at the time of disaster: an attempt to protect or save lives, stabilize the affected areas, and protect or salvage possessions [7]. Emergency response plan in the health sector in times of disasters is urgently needed to protect and save human lives in the form of medical intervention or other health measures such as nursing actions. Medical intervention at the beginning of disastrous events is critical and essential to save the victim's life and reduce health impacts by disasters [8]. Therefore, the required elements of health preparedness among health centers as the spearhead of the health service had raised the importance of preparedness of health centers, the importance of leadership and competence in health services in disaster management.

Health centers as one element of public health services before referral to a hospital has a duty to provide medical emergency health services in emergency response situations to reduce the impact of the flood. Health services provided to the flood victims is done by providing a place to provide treatment for the prevention, treatment for chronic medical conditions, medical treatment for the condition of the emergency and rehabilitation for the injured or sick [7]. In a disaster situation, the health center is also affected by the disaster thus should be ready to provide health services to the affected communities. In such condition, health centers require human resources (leadership) who have special competence in health services in disaster management, and to support preparedness health centers should be able to provide an optimal emergency response, provide early medical, physical and psychological treatment.

The problem that arises in the field is lack efficiency in the handling of flood victims. Handling and service of flood victims are slow. The low performance of health centers does not correspond with the Minister of Health of Indonesia number 75 (2014) regarding the Public Health Center. Less than optimal care health center health center signifies less optimal preparedness to face floods, one of the main factors caused by the human factor (leadership).

Realizing preparedness health centers to provide optimal health care is a disaster management activities that highly determined by factors of leadership and management competence. Effective leadership is leadership that can improve the ability of the organization to be able to manage health centers well in order to disaster preparedness [9]. Any organization established to achieve certain goals and if achieved, then can be termed as a success. To achieve success, a strong foundation is needed in the form of leadership competencies [10].

There are three stages of disaster management: pre-disaster, during disaster and post-disaster. All of these steps required adequate resources and can be used especially when a disaster occurs. Relation to the prevention of health problems caused by the disaster, preparedness course, health centers and health human resources becomes very important because the

health center is a technical implementing or executing operational activities during disaster and post-disaster. *Puskesmas* preparedness is done to ensure that health centers will always have the ability to do disaster relief efforts quickly, accurately, and purposeful.

The previous study that the preparedness of hospitals in several disasters in some countries such as China, Japan, and the United States (Schultz *et al.*, 2003; Kaji *et al.*, 2006; Cliff, 2007; Takahashi *et al.*, 2007; Fung *et al., 2008).* According to the research that has been done shows mixed results despite preparedness efforts and informing hazards.

Health Center Preparedness

Preparedness is a series of activities undertaken to anticipate disasters, through the organization as well as through the appropriate steps effectively and efficiently[11]. According to Carter, preparedness is actions that enable governments, organizations, societies, communities, and individuals to effectively and rapidly respond to disaster situations [12]. A major component in determining the preparedness which adopted Minister Regulation No. 75 Year 2014 on Community Health Centre, Permenkes: 741 / Menkes / Per / VII / 2008 on Minimum Service Standards, and Law No. 23 Year 2014 on Regional Government Article 17, paragraph 2 and 3 Basic Concepts Implementation of Health Care *Puskesmas*, include planning and administration, additional capacity, education, training, and drills, medical services, the medical and non-medical, communications and information, facilities, isolation and decontamination, medicine, laboratory, and other support.

Leadership

Leadership is the process of influencing a group of people to reach an understanding and of agreement on what to do and how to do it, as well as facilitating the process of individual and collective efforts to achieve common goals [13]. Transformational leadership is the leadership that gives consideration and intellectual stimulation that is individualized and has charisma [14]. Transformational leaders motivate subordinates to do better by increasing the value of the task, encouraging subordinates to sacrifice self-interest for the sake of the organization coupled with raising the level of subordinate needs to a better level. Dimensions of leadership include the impact of ideal, the motivation to inspire, intellectual stimulation, individual attention, participation, empowerment, and task achievement [15].

Competence

Competence is an ability to execute or perform a job or task that is based on the skills and knowledge as well as supported by work attitude demanded by the job [14]. Boyatzis states that competence is the basic characteristics of a person that can produce effective performance or superior in work, consisting of personal skills, knowledge, motive, born naturally, self-image, and social role [17]. Dimensions of competence covering skills, setting metacognition or cognition, cognition knowledge, the ability to regulate emotions, and social skills [17], [18], [19], [20], [21], [22].

II. RESEARCH METHODOLOGY

The method used is a quantitative method. This research is a quantitative research explanatory relationship or association which aims to determine the value of the variable by linking with other variables. This study also considered exposure-facto, for exposing the events ongoing, the process uses the hypotheses and the study sample [23].

The population of this research are the organization of health centers in the city of Samarinda whose work area prone to flood consisting of the Head of the clinic, Head of the administrative office, Head of Division, and the person in charge of community health centers. The location and place of study is 25 health centers whose area is prone to flooding in the city of Samarinda. Total leadership in the organization of health centers that serve a population of 233 people.

The research sample is taken using *proportionate stratified random sampling* because the population has different strata between strata by strata one another. The population is then used as a sample, to determine the number of samples using the Slovin formula then obtained a sample of 148 people.

The technique of collecting data using questionnaires. The questionnaire used is a direct form enclosed questionnaire, the respondents choose the answer that is already listed in the questionnaire [23]. Before giving a questionnaire to study samples, each item of each variable must be tested for its validity and reliability. This study was to test the quality of the data on 30 people outside the study sample.

The instrument of this study is through a preliminary interview and questionnaire. Measurement of leadership, competence, and preparedness using a Likert scale, each indicator variables will be measured using an instrument that has the type of item Likert scale with 5 scales. Scoring choice Likert-type response scale in this study are positive, answer scores are for example: SS (strongly agree) = 5; S (agree) = 4; KS (disagree) = 3; TS (disagree) = 2; and STS (strongly disagree) = 1.

The first data analysis techniques used were univariate, bivariate analysis then multiple linear regression analysis (multivariate analysis). Multiple linear regression analysis (multivariate analysis) was used to examine the effect of leadership and competence towards preparedness clinic. Classical assumption test (regression requirements) that must be met to perform multiple linear regression (Multivariate Analysis) is the normality test, multicollinearity, *homoscedasticity* test (test for equality of variance), and serial correlation test [24]. Statistical tests were performed using the auxiliary IBM SPSS Statistics 22.

III. RESEARCH RESULT

Univariate analysis (Descriptive Analysis)

Descriptive analysis of leadership variable (Table 3.1) obtained an average value of 90.94 with *standard error* of 0.697 and standard deviation of 8.484. The maximum value of 114 and minimum value of 55 with value *of skewness* -0.334

means that they are within the range of -2 through 2. Thus the results of the descriptive analysis of variables normally distributed leadership.

Table 3.1 Variable Descriptions Leadership ($X_{1)}$

Descriptives

			statistic	Std.Error
Leadership	mean		90.94	, 697
	95% Confidence Interval for Mean	Lower Bound	89.56	
		Upper Bound	92.32	
	5% Trimmed Mean		90.97	
	median		91.00	
	variance		71.976	
	Std. deviation		8.484	
	Minimum		55	
	maximum		114	
	Range		59	
	interquartile range		11	
	skewness		-, 334	, 199
	kurtosis		1.711	, 396

Source: Processed results Leadership SPSS *Statistics* 22, 2016

Descriptive analysis competence variable (Table 3.2) obtained an average value of 89.87 with standard error of 0.385 and standard deviation of 4.684. The maximum value of 102 and minimum value of 80 with value of skewness 0.097 means that they are within the range of -2 through 2. Thus the results of descriptive analysis competence normally distributed variables.

Table 3.2 Variable Descriptions Competence (X_{2})

Descriptives

			statistic	Std.Error
Competence	mean		89.87	, 385
	95% Confidence Interval for Mean	Lower Bound	89.11	
		Upper Bound	90.63	
	5% Trimmed Mean		89.85	
	median		90.00	
	variance		21.936	
	Std. deviation		4.684	
	Minimum		80	
	maximum		102	
	Range		22	
	interquartile range		7	
	skewness		, 097	, 199
	kurtosis		-, 451	, 396

Source: Processed SPSS *Statistics* 22 Competence, 2016

Descriptive analysis of variables *Puskesmas* preparedness (Table 3.3) obtained an average value of 172.20 with standard error of 0.969 and standard deviation of 11.786. The maximum value of 202 and a minimum value of 142 to 0,113 skewness means that they are within the range of -2 through 2. Thus the results of descriptive analysis of *Puskesmas* preparedness variables is normally distributed.

Table 3.3 Variable Descriptions Preparedness (Y) Health Center

Descriptives

			statistic	Std.Error
Kesiapsiagaan_ PHC	mean		172.20	, 969
	95% Confidence Interval for Mean	Lower Bound	170.29	
		Upper Bound	174.12	
	5% Trimmed Mean		172.12	
	median		172.00	
	variance		138.911	
	Std. deviation		11.786	
	Minimum		142	
	maximum		202	
	Range		60	
	interquartile range		14	
	skewness		, 113	, 199
	kurtosis		, 238	, 396

Source: Processed SPSS *Statistics* 22 Preparedness Health Center, 2016

Relationship Analysis (Analysis Bivariate)

The results of the analysis of the relationship with the leadership of Puskesmas *preparedness* (Table 3.4) shows the relationship (correlation) were slightly weaker at 0.248 with a significance value of 0.002. A positive sign (+) indicates the direction of the relationship between the leadership and the preparedness of health center, means that the higher leadership the higher preparedness of health centers. Based on the analysis of the relationship, it can be followed by multiple linear regression tests.

Table 3.4 Analysis of Relationship Preparedness Leadership in Health Center

correlations

		Puskesmas Preparedness	Leadership
Puskesmas Preparedness	Pearson Correlation	1	, 248 **
	Sig. (2-tailed)		.002
	N	148	148
Leadership	Pearson Correlation	, 248 **	1
	Sig. (2-tailed)	.002	
	N	148	148

**. Correlation is significant at the 0:05 level (2-tailed).

Source: Processed SPSS Statistics 22, 2016

The results of the analysis of the relationship with the preparedness of health centers of competence (Table 3.5) shows the relationship (correlation) is strong enough for 0.364 with significance value of 0.000. A positive sign (+) indicates the direction of the relationship between the competence of the

preparedness of health centers means that the higher competence the higher *Puskesmas* preparedness. Based on the analysis of the relationship, it can be followed by multiple linear regression tests.

Table 3.5 Analysis of Relationship Competence with PHC Preparedness

correlations

		Puskesmas Preparedness	Competence
Puskesmas Preparedness	Pearson Correlation	1	, 364 **
	Sig. (2-tailed)		, 000
	N	148	148
Competence	Pearson Correlation	, 364 **	1
	Sig. (2-tailed)	, 000	
	N	148	148

**. Correlation is significant at the 0:05 level (2-tailed).
Source: Processed SPSS Statistics 22, 2016

Multivariate analysis

Prior to the multiple regression analysis (multivariate analysis) between the leadership and competence of the preparedness clinic, then performed classical assumption (requirements regression) include tests of normality, *homoscedasticity* (equality test of variance), serial correlation test, and test multicollinearity. Classic assumption test results are eligible to continue their multiple linear regression tests (Multivariate Analysis).

Multiple Regression Analysis between Leadership and Competence Preparedness Against Health Center

The results of multiple regression tests (Table 3.6) is known for variable beta coefficient for leadership is 0.237 and for competence, variable is 0.814. Then Y is the variable coefficient Preparedness health centers as the dependent variable was 77.478. All three of these variables have a significance value of p <0.05, then H_{0} is rejected that there is a positive and significant effect of leadership and competence towards preparedness clinic.

Table 3.6 Regression Testing

Model		unstandardized Coefficients		standardized Coefficients	t	Sig.
		B	Std.Error	beta		
1	(Constant)	77.478	18.148		4.269	, 000
	Leadership	, 237	, 109	, 171	2,178	, 031
	Competence	, 814	, 197	, 324	4,128	, 000

Dependent Variable: Kesiapsiagaan_Puskesmas
Source: Processed SPSS *Statistics* 22, 2016

Therefore, the formulation of multiple regression equation obtained are as follows:

$Y' = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

Information:

Y '= Preparedness Health Center

$\alpha = 77.478$

$\beta_1 = 0.237$

X_1 = Leadership

$\beta_2 = 0.814$

X_2 = Competence

$\varepsilon = 18.148$

Formulation of regression equation of leadership and competence of the preparedness community health centers:

Puskesmas Preparedness = 77.478 + $_1$ + 0,814X
0,237X_2 +18.148

Multiple linear regression equations of leadership and competence of the preparedness community health centers can be described as follows:

a. Constants of 77.478 means that if the leadership ($X_{1)}$ and competence ($X_{2)}$ the value is 0, then the *Puskesmas* preparedness (Y) value is 77.478.

b. If the increase in the unit leadership variable ($X_{1)}$ the preparedness variable (Y) increased 0.237 times the constant 77.478. The coefficient is positive leadership means there is a positive relationship between leadership or direction of the preparedness community health centers.

c. If the increase in the variable unit of competency ($X_{2)}$ the preparedness variable (Y) increased 0.814 times the constant 77.478. The coefficient of competence is positive it means there is a positive relationship between competence or the direction of the preparedness clinic.

When calculating the amount of these two variables on a percentage basis it needs to be done is to calculate the square of the *correlation* coefficient *part* of each independent variable [25]. The results of analysis that leadership variable has a value of 0.166 which *part correlation* indicates a positive contribution of 3% of the preparedness of health center while competency has a *part correlation* value of 0.314 which represents a contribution of 10% towards preparedness clinic, which means that there are other factors that contribute to *Puskesmas* preparedness.

IV. DISCUSSION

The results of the influence of leadership and competence of the preparedness of health center in support of flood disaster management in the city of Samarinda in East Kalimantan Province which has been tested statistical hypothesis partially and simultaneously, discussed as follows:

Preparedness Leadership Influence on Health Center

The research found that leadership has significant positive effect on the preparedness of health center in support

of flood disaster management in the city of Samarinda in East Kalimantan Province. This study therefore highly relevant to the theory that has been put forward by Kirschenbaum (2002) of 3 (three) components of emergency preparedness is one that affects human (leadership) [26].

In this study, obtained leadership has a positive effect but the influence is still low. The low positive influence leadership means that there are other factors that also affects the *Puskesmas* preparedness in the city of Samarinda, which are the performance, motivation, skills and culture of the organization. According to Wibowo (2014) any organization established to achieve certain goals and if achieved then could be called a success, to achieve success, we need a strong foundation in the form of leadership, performance, motivation, skills, and organizational culture [16].

The low positive influence on the leadership of *Puskesmas* preparedness in the city of Samarinda in support of flood disaster management due to less optimal management of health services, health center management, and disaster management in the face of floods, both in terms of planning, policies, and guidelines for anticipating flood. Lack of planning with regard to the establishment of posts, number of beds, temporary shelter, evacuation, rescue and rescue of disaster victims.

In terms of policy includes public education, emergency planning, disaster warning system, and the mobilization of resources including funding, human resources, and facilities management organization is important. At the time of an emergency so that the policy can be implemented with the required optimal operational guidelines form but the fact the Standard Operational Procedures (SOP) of flood disaster management at the health center of Samarinda has not been made. This is seen in the implementation of flood relief effort seems slow, the victim receives lack of optimal health care and low performance of health centers. The slow pace of health center services is not in accordance with the Minister of Health of Indonesia number 75 of 2014 regarding Public Health Center.

Less than optimal management of health services management, health center management, and disaster management by the entire leadership of the health centers in the city of Samarinda could cause the low preparedness of health centers in support of flood disaster management in the city of Samarinda in East Kalimantan Province. Low preparedness in handling the flood victims could affect the occurrence of so many victims in the country's defense. This is in accordance with the opinion of Lurie, Wasserman, and Nelson (2006) on a strong administrative leadership is decisive ineffective preparedness efforts [27].

Preparedness is an activity that starts from consciousness and is followed by knowledge of potential threats and risks of disaster. The leader who has knowledge of the science of disaster management and disaster threat will affect the understanding, awareness, and behavior of its leadership in developing and managing both in terms of management with preparedness planning and disaster management activities. Adequate knowledge of potential threats will contribute to the preparation of disaster preparedness planning by the organization [28].

The entire leadership of health centers in the city of Samarinda does not have the educational background of disaster management. Thus the knowledge of the entire leadership of health centers in the city of Samarinda on threats and disaster risk reduction is less. Less knowledge on disaster management will affect the perception or their views of preparedness planning and disaster management activities. A person's perception is influenced by a framework of knowledge possessed influenced by education, reading, research, and so forth [29].

Of the seven dimensions of leadership researched, acquired enormous value to the dimensions of individual attention [30] and participation [15]. Forms of individual attention within the organization leaders in the city of Samarinda was by giving overtime and transport fee when they come down to the disaster site. The action is to support the disaster management in the city of Samarinda in East Kalimantan Province. Good leadership is to provide care, support, empathy, and open channels of communication [30].

Participation has a purpose all elements of health centers and subordinate leaders must participate actively in planning, implementing, and evaluating the results. Decision (*Badan Penyelengara Jaminan Sosial*-BPJS) budget funds 40% of the budget of the capitalist fund is a form of employee participation in decision-making for human resource development in order to support the flood disaster management in the city of Samarinda. This finding is consistent with the approach of consultative decision-making process models and process models of group decision making by Vroom and Yetton (1973), which outlines the involvement of subordinates participation in leadership [31].

The success of leadership in the organization is determined on how leaders formulate management functions (planning, organizing, leadership and control) to illustrate the operational steps in achieving a common goal. In this study intended purpose is to improve health care in support of optimal flood disaster management in the city of Samarinda through *Puskesmas* preparedness. Thus according to the results of research that leadership influence positively and significantly related to *Puskesmas* preparedness.

Effect of Competence on Health Center Preparedness

The research found that the competence (X_2) influence positively and significantly related to *Puskesmas* preparedness (Y), means to have a meaningful relationship between the variables of competence and direction of the community preparedness health centers, so it can be concluded that the higher competence, the higher the preparedness of health centers. This is consistent with the theory put forward by (Spencer: 1993) that competency has a causal relationship (*causally related*) if it is associated with an individual's performance and competence, comprising: motive (*motive*), characteristic (*trait*), the concept of self (*self-concept*) and skills (*skills*) and knowledge (*knowledge*), which is expected to

predict a person's behavior that can ultimately predict the performance of the person [32]. Thus competence meant here is the ability possessed by the leadership in the organization of health centers that can support good performance so as to improve the preparedness of health centers to provide optimal health services to support the flood disaster management in the city of Samarinda.

Leaders in health center organization should have public health services competence oriented, cooperation with other institutions, and management issues. Health Department as the parent of a health clinic is responsible for improving the competence to all the elements of health centers leadership in order to support the flood disaster management in the city of Samarinda. Providing disaster response training is still lack for example training in evacuation and rescue of flood victims.

Disaster response training activities in cooperation with other institutions have never been done in the clinic and all health centers in the city of Samarinda does not have a special fund for disaster management. Educational programs, training, and drills for the entire leadership of the health centers in the city of Samarinda in support of flood disaster management is not in good order. Education, training, and drills that performed are still limited to individual capacity building at their own expense. Rapid response training organized by the Department of Health is limited only given to disaster response team that is in the *Puskesmas*.

The results of the questionnaire recapitulation competence variables also provide tendency assessment findings how samples showed that of the five dimensions of competence, skills and knowledge dimensions of cognition rated very high. Thus, to improve the competence of the entire leadership in the organization of health centers in the city of Samarinda in support of flood disaster management by improving the skills and knowledge through training of disaster management.

Skills show how to work effectively and experienced in working with each job function. While cognition demonstrates scientific aspects, work procedures, when to do its job, the stages of work to complete the task. Competence in the form of skills and knowledge is needed in disaster management especially in times of disasters that demands its mass must be rapid, permanent, effective and optimal in providing health services. This finding is consistent with the definition of competence itself is the ability to execute or perform a job or task that is based on the skills and knowledge as well as supported by work attitude demanded by the job [10].

Lack of well-planned training and lack of cooperation with other institutions (*Badan Penanggulangan Bencana Daerah*-BPBD) on disaster response training can affect the competences of the entire leadership of health centers in the city of Samarinda on flood disaster management. It has resulted in low preparedness of health centers in disaster risk reduction and impact on the knowledge and skills in providing health services to victims. Lack of knowledge and skills in providing services and health assistance can slow handling of disaster victims which cause suffering, disability, and even death. Training can provide specific methodology to increase other skills in the field of emergency and disaster preparedness [33]. Thus these findings correspond with the results of research that competence affects positively and significantly to the health center in support of preparedness flood disaster management in the city of Samarinda in East Kalimantan Province.

Influence of the Leadership and Competence to *Puskesmas* Preparedness

The results of regression analysis on the influence of leadership and competence to the *Puskesmas* preparedness shows that H_0 is rejected. Thus the results of the research show that there is positive and significant correlation between leadership and competence of the preparedness of health center in support of flood disaster management in the city of Samarinda in East Kalimantan Province.

The results of multiple regression equation on the influence of leadership and competence of the preparedness of health centers is $Y = 77.478 + 0{,}237X_1 + 0{,}814X_2 + 18.148$. The coefficient X_1 and X_2 is positive. A positive value signifies leadership and competence together positive effect (unidirectional) and significant impact on *Puskesmas* preparedness.

The research found that the level of preparedness of health centers in order to support the flood disaster management in the city of Samarinda in East Kalimantan Province was included in the low category of preparedness. This is evident from the results of determination coefficient (*R Square*) leadership and competence together positive and significant impact on the preparedness of health center for only 16%. The low preparedness clinics in the city of Samarinda in support of flood disaster management indicate that the health center is still lack in every dimension of preparedness assessed.

Planning and Administration

Dimensions of planning and administration are still not optimal in terms of communication, coordination, planning, and cooperation among institutions to anticipate floods. Almost all health centers in the city of Samarinda have no planning in determining the post, temporary shelter, evacuation, standard operational procedure in disaster management, and the role of *Incident Command System* when a flood is also unclear. Catastrophic conditions resulted from limited resources, so it takes planning, efficient and effective administration of health centers as the spearhead of health services in providing early response. Institutions must make plans to be able to respond to any disaster that may occur [34].

Additional Capacity

The low additional capacity showed that health centers in the city of Samarinda have no specialized care facilities and protocols in receipt of additional assistance in the critical situation. The number of beds in health centers Samarinda City is still limited, not all health centers have backup emergency power and alternative fuels. Facilities for flood victims is only a mat and carried in an ambulance. In the event of a flood disaster in Samarinda City health centers only provide medical personnel, medicines, and medical equipment but does not have a tent and no mobile health clinics that *standby* on the spot because of limitations of the vehicle.

Education, Training, and Drills

The low values for the dimension of education, training, and drills in this study for all health centers in the city of Samarinda is due to the lack of integrated disaster response training and educational programs, training and drills to deal with floods. Important resources in disaster preparedness and emergency management are human, therefore, it is necessary to provide education and training to increase the knowledge and skills.

Communication and Information

The dimension of communication and information is still relatively low. Each health center has had a communication tool, but almost all health centers in the city of Samarinda have no means of backup communications (*walkie-talkies*), do not have communications space, and has not been integrated with local information systems in disaster areas (to anticipate) if major communications systems disturbed by the flooding. Through communication, the organization can improve its ability to take effective action to deal with disasters.

Isolation Facilities and Decontamination

Almost all health centers in the city of Samarinda have no isolation facilities and decontamination facilities. Isolation facilities are useful for isolating the patient to avoid the spread of infectious diseases or prevent infection to vulnerable group [35].

Medicine, Laboratory, and other support

Dimensions medicine, laboratory, and other support are also still relatively low in anticipation of a disaster situation. Health Center in the city of Samarinda has not cooperated with the private pharmacies to anticipate when a mass disaster occurs, they only rely on the supply of warehouse health pharmacy and does not have its own blood bank. Important support is the presence of blood banks whose needs often increases in disaster situations [7].

The low level of *Puskesmas* preparedness clinics in the city of Samarinda in support of flood disaster management will cause harm to the health center itself and the community in the event of such disasters that cause severe injuries in large quantities. *Puskesmas* who do not have the preparedness for disasters will chaos during the disaster because they do not have fixed rules that facilitate critical decision-making in critical situations such as in the event of flooding. Medical intervention at the beginning of disastrous events is critical and essential to saving the victim's life and health impacts caused by disasters [8].

Realizing *Puskesmas* preparedness in the city of Samarinda to provide optimal health care is a disaster management activities that are largely determined by factors of leadership and management competency. Thus these findings correspond with the results of research that leadership and competence together affect positively and significantly to the health center in support of preparedness flood disaster management in the city of Samarinda in East Kalimantan Province.

V. CONCLUSION

The results showed that leadership influence positively and significantly to the health center in support of preparedness of flood disaster management in the city of Samarinda in East Kalimantan Province. Thus, if the leadership increases, will improve the preparedness of health centers and vice versa.

The competence affects positively and significantly to the health center in support of preparedness of flood disaster management in the city of Samarinda in East Kalimantan Province. Thus, if the competence increases, will improve the preparedness of health centers and vice versa.

The leadership and competence together affect positively and significantly to the health center in support of preparedness of flood disaster management in the city of Samarinda in East Kalimantan Province. Thus, if the leadership and competence increases, will improve the preparedness of health centers.

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