

STRATEGIC ANALYSIS OF URBAN FIRE MANAGEMENT SYSTEMS

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ABSTRACT

A fire is a condition of a building, such as a house, factory, market, or building, burning uncontrollably, causing casualties. Fire is one of the disasters caused by non-natural factors. The purpose of this study is to analyze internal and external environmental factors in the prevention of fire management. As well as designing a strategy formulation for fire prevention. the method used in this study is a SWOT analysis using the QSPM (*Quantitative Strategy Planning Matrix*). The number of respondents in this study was three people. The results of this study are based on interviews with the fire service which resulted in factors influencing the occurrence of internal and External fires during the fire suppression strategy. The most influential internal factor in terms of strength is establishing an RW-level early handling officer providing counseling to the community. Already has a lot of fleet facilities. Lack of training in new firefighters. External factors in Fire prevention among them. Providing external training to fire officers in the agency/community while in terms of threats, namely weak cooperation with electricity, and water providers. Strategies that can improve at the time of fire prevention in the future. Increase the capacity of building fire prevention to the community and agencies and residents maximize early fire prevention can be done so that the fire is extinguished immediately.

Keywords: *Fire, Internal Factors, External factors, Strategies*

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INTRODUCTION

The fire was one of the unexpected tragedies. In addition to being unwanted by the public, fires are often out of control when large. Fires are very dangerous and affect people's lives and livelihoods. Fire is classified as a form of disaster. According to the National Disaster Management Agency (BNPB), a disaster is an event or series of events caused by natural, non-natural, or human factors that threaten or disrupt people's livelihoods and livelihoods and result in death or environmental damage (Abdullah & Tinov, n.d.)

In the event of a fire, extinguishing is usually carried out mutually by residents with makeshift equipment, before the fire unit arrives at the scene. The problem that often occurs so far is the delay in the fire unit arriving at the fire site which is caused by several internal factors including, (1) human resources, (2) facilities, and (3) management while on external factors 1. Socio-Cultural, 2. Climate and 3. environment in the aspect caused by the impact of the social aspect is influenced by age so the above factors are very influencing (Sriwijaya, 2018).

The existence of a fire station in an area is believed to have a significant impact on the fire disaster management process. The location from the fire station to the fire site does not take much time so firefighters can reach the location quickly (Argarini & Yusuf, 2020).

Sudin Penanggulangan Api is a representative of the DKI Jakarta Regional Government, overcoming the problem of legal fire management as the basis of government policy, having resources, developing resources, research facilities, and assistance related to fires. Reaching out to all communities in need - and disaster relief, especially in DKI Jakarta province which has recorded the number of fires in 2020, fires increased exponentially until

higher registered fires electric fires accounted for the highest fire potential. More than 221 other unexplained cases of fires were recorded that could have caused fires (Deni et al., 2019).

The third fire was caused by a gas cylinder that fired, causing a very large fire that recorded as many as 180 cases of fire. Meanwhile, the cause of the fire was caused by burning sambah with a total of 123 cases recorded. The fires caused by cigarettes recorded 36 cases of fires in Jakarta. Fires caused by candles are as many as 7 cases that cause fires. internal factors include, (1) human resources, (2) Facilities, and (3) management while external factors 1. Socio-Cultural, 2. Climate and 3. environment and learn about fire prevention strategies for urban fire management.

METHOD

By using a SWOT analysis, Grameds can find out what internal factors the company has, such as strengths and weaknesses, as well as external factors that are outside the company, such as opportunities and threats. *Strength Weakness Opportunity Threats* are a strategic planning method used to evaluate strengths, weaknesses, opportunities, and threats in a project or business speculation. In this analysis, SWOT is adapted to formulate potential problems that affect community capacity in efforts to reduce fire risk. Next, a SWOT matrix is formed which is then used to generate strategies.

To make a plan, you must evaluate external factors as well as internal factors. Analysis of factors must produce *strengths* owned by an organization, as well as know the *weaknesses* contained in that organization. Meanwhile, the analysis of external factors must be able to find out the *opportunities* that are open to the organization and can also find out the threats (*treath*) experienced by the organization concerned. As well as a SWOT strategy analysis is used to analyze and measure organizational strengths, organizational weaknesses, organizational opportunities, and organizational threats by calculating the value of the Internal Factors Analysis Summary (IFAS) and External *Factors Analysis Summary* (EFAS) matrix, then calculating the value of External Factor Evaluation (EFE) and *Internal Factor Evaluation* (IFE) to be able to determine the direction of the strategy in the future development of the organization then determine the TOWS or SWOT matrix that describes the alternative strategy of the organization (Hidayat et al., 2017).

RESULTS AND DISCUSSION

Result

Many fires in urban areas occur as a result of electrical short circuits, smoking and, many causes that can cause fires. The following data on fires that occurred in 2021 that hit urban areas were recorded in the Urban Fire Department.

The table was made to find that the fires that occurred in 2021 were the fires that occurred in Jakarta the most in housing which recorded as many as 55 cases in March, while in fires recorded for one year as many as 516 cases of fires in the scope of housing. In installations outside the building, there were 413 fires recorded this year, the highest recorded fire cases this year in December recorded at 59 fire cases. Meanwhile, in public buildings where there were fires, there were 274 recorded fire cases that occurred in October with 34 fire cases recorded.

Table. 1 Burning Building Data 2021

No	Moon	Janis Building on Fire					
		Residential Buildings	Public Markets	Buildings	and	Industrial buildings	Outside the building
1	Jan	42	14			2	21
2	Feb	49	15			0	29
3	March	55	12			1	39
4	April	30	27			1	49
5	May	44	24			3	45
6	June	37	20			1	25
7	July	44	34			1	35
8	Aug	53	15			5	29
9	Sept	44	24			0	36
10	Oct	46	34			0	36
11	Nov	40	22			2	28
12	Des	32	33			0	59

Source: Fire Service in 2021

Discussion

The fire suppression strategy is formulated using a soft analyzer as in the table below. The order of priorities of the strategy is arranged based on the frequency of occurrence of alternative strategies. Internal factors are influenced by the location of more and more fire stations and several points in urban areas to facilitate handling by firefighters and maximize firefighting in the area. And a handful of employees who have been trained so that the bias is more optimal in carrying out the firefighting given. And assisted by supportive efforts to extinguish fires in the city.

While in *weakness* there are several that cause weaknesses internally, including routine training to conduct fire simulations. So that the firefighting can run optimally. Socialization to the community to minimize the level of fires in densely populated environments. As well as a workforce that still receives little training so during outages it is very important.

External factors that cause fires in urban areas often occur so it must be at a minimalist level of these external factors such as *Opportunity* which causes fires and often arises including uninhabitable buildings or old building ages such as electrical installations, and materials in buildings so that they are prone to fire.

The next opportunity that can cause fires is the residents' understanding of fires, there are still many residents who ignore safety such as smoking, burning litter, and other causes that are not extinguished so there is the potential for fires. As for electrical installations that are not standard, they cause the potential for shorting or burning in electrical installations and are unknown, causing severe fires.

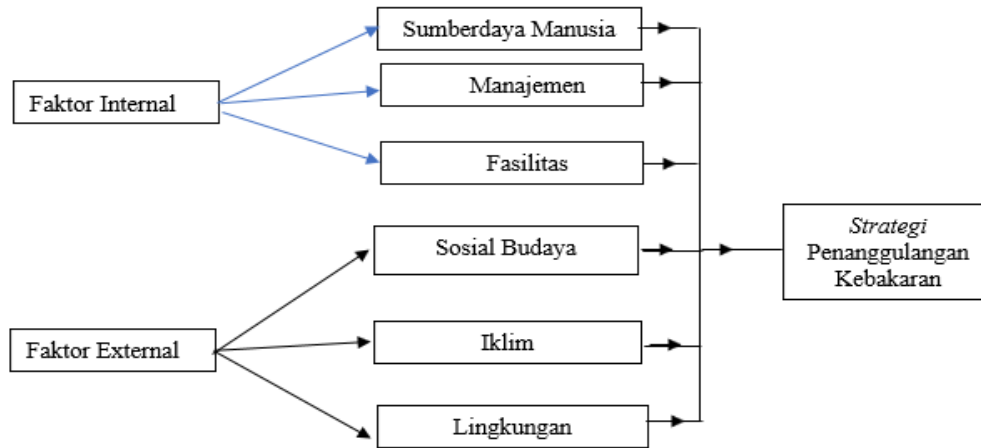


Figure 1. Internal and External Factors

The analysis using SWOT analysis obtained the results in this study using the matrix IFE (*Internal Factor Evaluation*) and EFE (*External Factor Evaluation*) to obtain data in accordance with the analysis of fire management in the damkar (fire service) Jakarta area including having several internal factors that are biased to cause the occurrence of fire extinguishing conditions that affect it summarized in the table Internal Factors and The External Factors table below includes the following:

Table 2 Internal Factors Table

	Variable	R 1	R 2	R 3	Jml	Weight	Reting	BxR
Strength	Providing hydrants	3	3	4	10	0,15	3,33	0,51
	Establishing an RW-level early handling officer	3	4	4	11	0,17	3,67	0,61
	Have a strategy outlined in the procedure	4	3	3	10	0,15	3,33	0,51
	Already has many fleet facilities	3	4	4	11	0,15	3,33	0,51
	Installation of a pot containing himbawan	4	3	4	11	0,17	3,67	0,61
Weaknes	The Number of Peugeot Age ahead of Retirement is higher	1	2	1	4	0,06	3,00	0,18
	Lack of training on new Firefighters	2	1	2	5	0,08	4,00	0,30
	Lack of Number of Officers in a team	2	2	1	5	0,08	5,00	0,38
Total of Internal Factors					66	1.00	3,38	

Source: Dinsa Urban Fire Department, 2022

Internal factors are influenced by the location of more and more outage posts and several points in the Jakarta area so that it will maximize firefighting in the area. And a handful of employees who have been trained so that the bias is more optimal in carrying out the firefighting given. And assisted by supportive efforts to extinguish fires in the city. While in *weakness* there are several that cause weaknesses internally, including routine training to conduct fire simulations. So that the fire fighting can run optimally. Socialization to the community to minimize the level of fires in densely populated environments. As well as a workforce that still receives little training so during outages it is very important.

Table 3. External Factors Table

	Variable	R 1	R 2	R 3	Jml	Weight	Reting	BxR
Opportunity (opportunity)	Providing extenal training to firefighters in the agency/ community	2	3	3	8	0,22	2,67	0,58
	Agencies or communities providing firefighting facilities by the community	3	2	4	7	0,19	2,33	0,44
	Support from the government	3	2	2	6	0,16	2	0,32
Threat	Weak cooperation with electricity, and water providers	1	2	2	5	0,17	1,67	0,23
	Dense Number of Houses	2	1	1	4	0,13	1,33	0,14
	Extrim weather during strong winds and drought	2	2	1	3	0,10	1	0J,08
	Condition of buildings that have been damaged	1	1	2	4	0,13	1,33	0,14
Total External Factor Evaluation					37	1.00		1,94

source: Fire Service, 2022

In the table above, some external factors that cause fires in urban areas often occur so that it must be minimalized at the level of these external factors, such as in *Opportunity* (Opportunity) which causes fires and often arises including uninhabitable buildings or old buildings ages such as electrical installations, and materials in buildings so that they are prone to fire. The next opportunity that can cause fires is the residents' understanding of fires, there are still many residents who ignore safety such as smoking, burning litter, and other causes that are not extinguished so there is the potential for a fire. Such as non-standard electrical

installations that cause the potential for shorting or burning of electrical installations and unknowns so as to cause severe fires.

In Threats (human) that arise on external factors include the first at a narrow outage location in a small alley so that fire trucks cannot enter and the number of residents who see is very large, making it difficult to extinguish. The obstacle that is caused when a fire occurs that occurs during an outage is the time of extinguishing that goes to the location of the fire which causes a fire that is increasingly at a jam so that access to extinguishing is very difficult to extinguish so that when the fire has spread. Climatic factors affect the rapidly growing fires where the hot climate and strong winds very quickly help the fire to clear so that the fire is very difficult to extinguish. As well as during firefighting when a fire occurs, there are many firefighters who participate in helping the fire from the community so as to create obstacles to firefighting.

The results of the Marix QSPM (*Quantitative Strategy Planning Matrix*) analysis are based on in-depth interviews with three key figures who are considered to understand fire prevention in urban firefighters.

Based on the QSPM analysis, get several strategies that can be made a top priority based on high ranking, according to research there are 7 strategies that management needs to do to improve when carrying out fire prevention which has the highest 3 values from the table above so that it can improve the strategy of the fire prevention system including the following

1. Increase the capacity of building fire prevention to the community and agencies to maximize early fire prevention can be done so that fires are extinguished immediately. By increasing public awareness and related agencies of building capacity such as: providing fire extinguishers, installing fire alarms, and training fire management teams that must be carried out regularly.
2. Optimizing and strategy of monthly coordination meetings, creating WhatsApp groups to control related to fire prevention by conducting similar counseling to building user agencies, and Support agencies (water, electricity, etc.) as well as the community. By conducting regular training during emergencies, conducting training, and providing information related to fire issues.

Increase public awareness to facilitate the work of firefighters to get to the fire site when firefighters are on the road both during office hours, office hours, and office hours so that officers immediately arrive at the fire scene quickly and can immediately extinguish the fire. By providing access roads, there is no crowding at the scene of the fire.

CONCLUSION

Conclusions Based on the results of the study, conclusions can be drawn below related to fire prevention in the city The most influential internal factors in terms of strength are forming RW-level early handling officers and Providing Counseling to the Community by Already having many Fleet facilities, Lack of training for new Firefighters.

In external factors that have the most influence in terms of opportunities in fire prevention include providing external training to fire officers in the agency / community while in terms of threats, namely weak cooperation with electricity, water providers. Strategies that can improve at the time of fire prevention are. Increase the capacity of building fire prevention to the community and agencies and maximize initial fire prevention can be done so that fires are

extinguished immediately. By increasing public awareness and institutions related to building capacity such as: providing fire extinguishers, installing fire trucks, and training fire management teams that must be carried out regularly. b. Optimizing and strategy of monthly coordination meetings, creating whatsApps groups to control related to fire prevention by conducting simulai and counseling to building user agencies, and Support agencies (water, electricity, etc.) as well as the community. By conducting regular training during emergencies, conducting training and providing information related to fire issues. c. Increase public awareness to facilitate the work of firefighters to get to the fire site when firefighters are on the road both during office hours, office hours and office hours so that officers immediately arrive at the fire scene quickly and can immediately extinguish the fire. By providing access roads, not crowding at the scene of a fire.

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