

Analysis of the Influence of Real Time Monitoring Technology, Procedural Training, and Threat Perception on the Reliability of Dalmas Human Resources Response When Facing Massive Protests

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Abstract

This study aims to analyze the influence of real-time monitoring technology, procedural exercises, and threat perception on the reliability of Dalmas' Human Resources (HR) response in the face of massive protests. The approach of this study is quantitative with an explanatory method, involving 65 respondents from the Makassar Police Dalmas Unit who were selected through purposive sampling techniques. Data analysis was carried out using SPSS through descriptive tests, classical assumption tests, and multiple linear regression. The results showed that real-time monitoring technology, procedural training, and threat perception had a positive and significant effect on the reliability of Dalmas HR response, both partially and simultaneously, with a determination coefficient value (R^2) of 0.650. This means that 65% of the variation in response reliability can be explained by these three independent variables. These findings confirm that the effectiveness of crowd control requires synergy between the application of surveillance technology, continuous procedural training, and the ability of the authorities to accurately assess threats. This research is expected to be the basis for the development of an integrated, technology-based, and responsive Dalmas human resource capacity building strategy in the field.

Keywords: Real-Time_Monitoring_Technology; Procedural_Training; Threat_Perception; Response_Reliability; Dalmas_HR

1. Introduction

Massive protests are a form of expression of public aspirations that often occur in social and political dynamics in Indonesia [1]. However, the escalation of protests can potentially disrupt public order and social activities of the community, often even triggering security disturbances [2]. The reliability of Dalmas Human Resources' response in the face of massive protests is crucial, where this is greatly influenced by the readiness of monitoring technology, structured procedural exercises, and accurate threat perception of the field situation [3]. Therefore, effective security management strategies, including real-time surveillance and adequate procedural training for Dalmas personnel, are needed to anticipate and deal with potential anarchism [4].

In the context of crowd control, the use of real-time monitoring technology is one of the important instruments [5], [6] in optimizing the efficiency of work processes and accelerating strategic decision-making by security forces [7]. This technology allows for continuous visual monitoring and data collection, providing a comprehensive picture of mass dynamics and potential escalation of the situation [8]. The implementation of mobile CCTV systems with stable data transmission capabilities is vital to provide optimal real-time visibility of the control room, facilitating more precise decision-making and proactive risk management when facing large crowds [9]. However, the integration of these technologies is often constrained by the lack of technical competence of the human resources that operate them as well as the limitations of the strategic placement of surveillance cameras, which can hinder adequate surveillance coverage [10].

This study uses a quantitative approach on the reliability of human resource response that has been conducted by several previous studies that examined the effect of mass control training on the competence of Dalmas Sabhara members in maintaining police professionalism [1], [11]. The same study also analyzed the effectiveness of training and human resource development within the Jember Resort Police, showing that although CCTV technology offers advantages in surveillance, implementation in the field still faces significant operational challenges [12], [13]. The research is reinforced by research highlighting the need for clear and structured follow-up mechanisms when CCTV footage successfully detects criminal activity, suggesting that without systematic response procedures, the potential of visual data cannot be maximized for effective prevention or enforcement [14][11]. Comprehensively, these studies indicate that personnel performance and responsibility, particularly in the context of security and crowd handling, are strongly influenced by factors such as training, work infrastructure, and technology implementation capabilities [15].

Based on the background of this study, focusing on the interaction between real-time monitoring technology, procedural training, and threat perception will provide a deeper understanding of the factors that determine the reliability of Dalmas response. This study will explore how the combination of the three elements contributes to the increased effectiveness of Dalmas' HR response, especially in the context of massive protests that require coordination and rapid action. This research specifically aims to identify and empirically analyze the direct and indirect impact of these variables on the response performance of Dalmas personnel, integrating technological and humanities perspectives to produce a comprehensive framework. In addition, this study will present evidence-based policy recommendations that can be used by police institutions to improve the preparedness and responsibility of Dalmas personnel in dealing with various scenarios of massive protests in the future [15].

2. Methodology

This study uses a quantitative approach with an explanatory method. The research population was all Dalmas HR members in the Dalmas Unit of the Makassar Police who were involved in handling massive protests, while the sample was determined by purposive sampling techniques based on certain criteria so that 65 respondents were collected. Data analysis was carried out with the help of SPSS which included descriptive statistics, classical assumption tests (normality, multicollinearity, and heteroscedasticity), multiple linear regression tests, F tests to test models simultaneously, t tests to test the partial influence of each variable, and determination coefficients (R^2) to determine the contribution of independent variables to dependent variables.

3. Result and Discussion

The results of each of these tests are summarized in a single summary table for easy reading and interpretation. The following table briefly presents the results of the SPSS test which includes descriptive statistics, normality test, multicollinearity, heteroscedasticity, regression test, t-test, F test, and determination coefficient value (R^2) :

Table 1. Summary of Research Results

Tests / Variables	Key Results	Sig.	Decision	/
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			Interpretation
Statistics Descriptive	TRTM = 4.21; LP = 4.18; PA = 4.10; KR = 4.25 (Skala 1–5)	–	All variables are in the high category
Normality Test (K-S, S-W)	K-S = 0.742 (Sig. 0.642); S-W = 0.982 (Sig. 0.476)	> 0.05	Normally-distributed residual data
Multicollinearity Test	TRTM (VIF = 1.402); LP (VIF = 1.460); PA (VIF = 1.424)	< 10	No multicollinearity
Heteroscedasticity Test (Glejser)	Sig. TRTM = 0.403; LP = 0.270; PA = 0.361	> 0.05	No heteroscedasticity
F Test (Simultaneous)	F = 39.52	0.00	Significant regression models
T test (Partial) – TRTM	$\beta = 0.372$; t = 4.12	0.00	H1 accepted (significant positive)
T test (Partial) – LP	$\beta = 0.331$; t = 3.29	0.02	H2 accepted (significantly positive)
T test (Partial) – PA	$\beta = 0.287$; t = 3.24	0.02	H3 accepted (significantly positive)
Coefficient of Determination (R ²)	R ² = 0.650	–	65% of KR variations are explained by TRTM, LP, PA

3.1. Result (Font 12, Times New Roman, 1.15 Spacing)

Table 1. suggests that some of the study's key findings can be explained as follows:

Statistics Descriptive

The results of the descriptive analysis showed that the average score for all research variables was in the high category (scale 1–5). Real-time monitoring technology (Mean = 4.21), procedural training (Mean = 4.18), threat perception (Mean = 4.10), and Dalmas HR response reliability (Mean = 4.25) were in the "good–very good" range. This shows that respondents consider the performance of Dalmas human resources to be very good in terms of technology, training, and threat awareness.

Classic Assumption Test

1. Normality: The Kolmogorov-Smirnov (Sig. = 0.642) and Shapiro-Wilk (Sig. = 0.476) assays > 0.05, so that the residual data are normally distributed.
2. Multicollinearity: VIF value of all independent variables (TRTM = 1.402; LP = 1.460; PA = 1.424) < 10 and tolerance > 0.1, indicating that there is no excessive correlation between independent variables.
3. Heteroscedasticity: The Glejser test showed that all variables had a significance value of > 0.05, so that the model was free of heteroscedasticity symptoms.

Thus, all classical assumptions are fulfilled so that multiple linear regression is worth using.

F Test (Simultaneous)

The results of the F test obtained a value of F = 39.52 with Sig. = 0.000 < 0.05, which means that the regression model is simultaneously significant. This means that real-time

monitoring technology, procedural training, and threat perception together have a significant effect on the reliability of Dalmas' human resources response in the face of massive protests.

T test (Partial)

1. Real-time monitoring (TRTM) technology: β value = 0.372; $t = 4.12$; Sig. = $0.000 < 0.05$. This shows that the better the use of monitoring technology, the more reliable the response of Dalmas human resources.
2. Procedural exercise (LP): Value $\beta = 0.331$; $t = 3.29$; Sig. = $0.002 < 0.05$. This means that regular and structured training has a significant effect on improving the reliability of the response.
3. Threat perception (PA): Value $\beta = 0.287$; $t = 3.24$; Sig. = $0.002 < 0.05$. This shows that awareness of potential threats affects the readiness of Dalmas human resources in responding to the massive protest situation.

Thus, all three research hypotheses (H1, H2, and H3) are accepted.

Coefficient of Determination (R^2)

The value $R^2 = 0.650$ indicates that the 65% variation in the reliability of Dalmas HR responses can be explained by the TRTM, LP, and PA variables. Meanwhile, the remaining 35% are influenced by factors other than the model, such as individual experience, leadership, coordination between units, and situational factors in the field.

3.2. Discussion

The results of this study show that the three independent variables, namely Real Time Monitoring Technology (TRTM), Procedural Training (LP), and Threat Perception (PA), are proven to have a significant effect on the Reliability of Response (KR) of Dalmas HR in facing massive protests. A determination coefficient value (R^2) of 0.650 indicates that 65% of the variation in response reliability can be explained by these three factors, while the remaining 35% is influenced by other variables that were not studied.

First, the results of the t-test showed that Real Time Monitoring Technology had a significant positive effect on the reliability of the response ($\beta = 0.372$; sig. 0.000). This corroborates the argument of Pothireddy, Sláma & Hrinko that real-time monitoring technologies, such as mobile CCTV with stable data transmission, are able to increase surveillance effectiveness and accelerate strategic decision-making [5], [9]. These results are consistent with the panjaitan which states that although operational challenges still exist, the use of monitoring technology can increase the readiness of the apparatus if supported by the technical competence of human resources [16]. Thus, the better the technology integration, the higher the reliability of Dalmas' response.

Second, Procedural Training also had a significant effect on the reliability of the response ($\beta = 0.331$; sig. 0.002). These results are in line with the research of Setyabudi et al. which emphasized that crowd control training improves the professionalism and preparedness of the apparatus [17]. Regular exercises strengthen team coordination and minimize procedural errors when dealing with crowd dynamics. The research of Sani et al. also emphasizes that human resource development through training has a real effect on the effectiveness of police

work [18]. In other words, structured procedural training is an important foundation for Dalmas to maintain consistency of performance in critical situations.

Third, Threat Perception was shown to have a significant positive effect on response reliability ($\beta = 0.287$; sig. 0.002). This shows that the more accurate the apparatus is in assessing potential threats, the more appropriate the response strategy chosen. These results support the findings of Pebriani et al. that proper threat perception prevents misestimation that has the potential to worsen the situation[3]. Research by Lisdiana et al. also confirms that misperception can elicit a disproportionate response, both excessive and careless [19]. Therefore, the cognitive ability of the apparatus in identifying threats needs to be continuously honed through psychological training and field experience.

Simultaneously, the F test showed that all three independent variables had a significant effect on the reliability of the Dalmas response ($F = 39.52$; sig. 0.000). These results confirm that the reliability of the response is not only determined by technology or practice, but is the result of a synergy between technical readiness, procedural habituation, and the accuracy of threat perception. This is in line with the view of Wibisono et al. that the existence of technology must be supported by clear operational procedures and the ability of the apparatus to respond adaptively [19].

Thus, this study proves that the H1, H2, and H3 hypotheses are acceptable. Real-time monitoring technology, procedural training, and threat perception each play a significant role in improving the reliability of Dalmas' HR response. These results enrich the literature that effective crowd control cannot rely on just one single aspect, but rather requires an integrative approach that combines technology, procedural skills, and the psychological readiness of the apparatus.

4. Conclusion

This study concludes that real-time monitoring technology, procedural training, and threat perception have a positive and significant effect on the reliability of the response of Dalmas Makassar Police human resources in the face of massive protests. The use of real-time monitoring technology has been proven to increase the effectiveness of supervision and accelerate strategic decision-making in the field, while structured procedural training is able to strengthen professionalism, team coordination, and the accuracy of the actions of the apparatus. In addition, accurate threat perception encourages the authorities to take the right response strategy so that they can minimize misestimation in the field. However, this study emphasizes the importance of synergy between the use of technology, capacity building through training, and strengthening psychological aspects to build the reliability of Dalmas HR responses optimally.

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6. Reference

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