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Optimization of Predictive Policing Technology for Prevention of Brawling Crimes at Bekasi City Metro Police Station

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Abstract: The phenomenon of brawl-related crime in the jurisdiction of the Bekasi City Metro Police, which has significantly increased since 2021, represents deviant behavior from social norms commonly referred to as juvenile delinquency. The objectives of this study are to analyze the effectiveness of the currently applied predictive policing technology in preventing brawl-related crime in the Bekasi City Metro Police jurisdiction, the challenges faced by the Bekasi City Metro Police in integrating predictive policing technology for preventing brawl-related crime, and optimal strategies for implementing predictive policing technology to improve the effectiveness of brawl prevention in the Bekasi City Metro Police jurisdiction. This study uses a qualitative research method. The theories used include predictive policing theory, evaluation theory, and SWOT theory. The results indicate that optimizing predictive policing technology at the Bekasi City Metro Police faces significant challenges related to ineffective data integration, limited technological infrastructure, and minimal training for police personnel. To improve its effectiveness, improvements are needed in data integration, adoption of advanced technologies such as big data and artificial intelligence, and intensive training for police personnel. Enhancing data quality, coordination between units, and active community involvement are also crucial to maximizing the technology's capability in preventing brawls.

Keyword: Optimization, Predictive Policing, Juvenile Brawls

INTRODUCTION

This research is motivated by the phenomenon of brawl-related crimes that frequently occur within the jurisdiction of the Metro Bekasi City Police. These brawl crimes are behaviors that do not align with the norms in society and are often referred to as juvenile delinquency. These crimes are actions considered deviant from the prevailing social norms within the community (Fitri, Lona, and Mariska, 2024). The number of brawl crime cases in the Metro Bekasi City Police jurisdiction has been observed starting in 2021, when a brawl case resulted in one death. In 2022, five brawl crime cases occurred, and in 2023, 14 brawl crime cases were

recorded. If this type of crime is not addressed promptly with appropriate solutions, it could become a part of the culture commonly found in the community (Muhamad, Faisal, and Luna, 2024).

Efforts have been made to prevent brawl crimes through predictive policing implemented by the Metro Bekasi City Police. This has been observed in several studies, such as the one conducted by Hapy et al. (2023), which explains that predictive policing in preventing brawls has been applied through intelligence analysis, dialogical patrols with the theme "zero brawls" to raise public awareness, especially among vulnerable groups, about the importance of avoiding brawls and maintaining public order. Fandi and Akhyar (2022) also explained that the strategy applied in preventing brawl crimes has not been effective in addressing conflicts as a serious social issue that requires more intensive handling. The police response remains reactive, there is a lack of intervention at the root causes of the conflicts, insufficient coordination among functions, and a lack of active involvement from citizens and strategic stakeholders in addressing the root causes of brawl-related conflicts. Adibya, Runturambi, and Arthur (2023) also noted in their study that the implementation of predictive policing so far has been limited to early detection and prevention of various criminal activities at the RW (neighborhood unit) level. Additionally, research by Mas Iqbal, Runturambi, and Arthur (2022) highlighted that the predictive policing model used to forecast anarchic crimes involves data collection, data analysis, police operations, and responses to potential threats from anarchic protests.

Based on the findings of the research, it can be observed that the implementation of predictive policing, which has been applied so far, still has several weaknesses. These weaknesses stem from a lack of recognition of conflicts as serious social issues that require a holistic approach, police responses that remain reactive, insufficient direct intervention into the root causes of conflicts, a lack of coordination among the involved functions, and limited active involvement from the community and strategic stakeholders in the conflict prevention process. Additionally, predictive policing tends to focus more on early detection rather than preventing anarchism, and sometimes reliance on data analysis may overlook more complex situations and dynamics of conflicts.

Furthermore, according to the results of preliminary research, the application of predictive policing at the Metro Bekasi City Police in preventing brawl crimes has encountered several issues. For example, the integration of data from crime offender prediction, crime victim prediction, crime location and time prediction, and predictions of potential criminal collaborations has not been effectively integrated. This issue indicates that the objective of implementing predictive policing, which is to provide in-depth predictive information regarding the potential of each data point on victims, offenders, crime locations and times, and the relationships between offenders with specific types of crime, has not been fully achieved.

The lack of data integration in predictive policing will hinder the strategy for preventing brawl crimes that is based on data analysis. This issue can also lead to inefficient resource allocation, where prevention efforts are not focused on areas or individuals most likely to be involved in brawls. Additionally, this problem affects the ability of the Metro Bekasi City Police to respond quickly and accurately to brawl cases, thereby increasing the risk of more serious brawl incidents with greater impacts on the community. Therefore, steps need to be taken to improve data integration and develop a more integrated and efficient predictive policing system.

The initial step to optimize predictive policing is to conduct a comprehensive evaluation of the existing system, including data accuracy, the effectiveness of forecasting models, data integration, and the system's ability to provide relevant information in a timely manner. The purpose of this evaluation is to assess the success of the predictive policing implementation (Suarga, 2019). According to Aktsa Sharikha Hasanudin (2022), the aim of the evaluation is to

provide useful information for the evaluators to better understand the program, assess the overall quality and value of the program to report performance, and make decisions about the future of the program. It also helps in developing the program by providing necessary information for improvement, determining the program's feasibility to decide whether it should be continued or discontinued, and assisting in policy decision-making, such as stopping, revising, continuing, or expanding the program based on the evaluation results. From the evaluation, improvements in information technology infrastructure, coordination between units, and the establishment of effective collaboration mechanisms can then be made.

The next step is to adopt a holistic approach through an optimization strategy for predictive policing, which involves the development of an integrated prevention strategy, officer training, and community participation. These actions are needed to improve the effectiveness of predictive policing in preventing brawl crimes and enhancing public safety in the Metro Bekasi City Police jurisdiction. According to Siti (2023), this optimization strategy focuses on the profitability of a program's implementation. The strategy for optimizing predictive policing to prevent brawl crimes within the Metro Bekasi City Police jurisdiction is a comprehensive effort focused on achieving beneficial results from the program's execution. Concrete steps that can be taken include improving the quality of data analysis for more accurate forecasting, utilizing advanced information technology to support predictive policing, and better integrating various data sources related to brawl crimes. Additionally, the strategy includes intensive training for law enforcement officers in effectively using technology and predictive data, as well as strengthening active community participation in identifying potential crimes and providing valuable information to the police. With this holistic approach and integrated strategy, it is hoped that predictive policing will become a more effective tool in preventing brawl crimes and enhancing public safety in the community.

In line with the explanation above, by understanding the phenomenon of brawl crimes that frequently occur within the jurisdiction of the Metro Bekasi City Police and the prevention efforts being made through predictive policing, which so far still faces a number of challenges, it is necessary to involve the community actively in prevention efforts. There is also a need for more proactive police responses and direct interventions into the root causes of conflicts, as well as improved data integration in predictive policing. Through research on the optimization of predictive policing to prevent brawl crimes within the Metro Bekasi City Police jurisdiction, it is hoped that this study will provide valuable insights into the challenges and gaps in the predictive policing-based crime prevention strategy in the region.

METHOD

SWOT analysis is essentially a method used to help formulate strategies. The purpose of this analysis is to identify an organization's strengths and weaknesses, as well as the opportunities and threats in its environment. SWOT analysis is an important tool that supports decision-making and is often used as a systematic analysis tool to assess the internal and external influences on an organization (Yuksel and Dagdeviren, 2007).

By using SWOT analysis, organizations can identify their strengths, weaknesses, opportunities, and threats. Based on this analysis, the organization can build strategies that leverage their strengths, address weaknesses, and capitalize on opportunities or confront potential threats. SWOT analysis summarizes the most important internal and external factors (strategic factors) that could affect the organization's future.

This SWOT analysis is comprehensive in identifying the internal and external factors faced by the organization. These factors can be incentives on one hand or represent potential limitations in terms of the organization's performance or the goals it aims to achieve (Yuksel and Dagdeviren, 2007). The information generated can be presented systematically in the form

of a matrix, where the combination of the four factors in the matrix can help determine relevant strategies for long-term progress.

Wall and Collins-Kreiner (2007) emphasize that SWOT analysis is simple and useful for organizing information, especially in initial research, but also as a basis for more applied and theoretical work. One advantage, but also a disadvantage, of SWOT analysis is that it is an assessment method. The emphasis on evaluation appears to be more applied than theoretical. SWOT has proven to be very useful in understanding the organizational environment and, as a result, in strategic planning for their growth and development.

However, when considering its drawbacks, SWOT analysis cannot measure the weight and impact of strategic factors on alternatives (Osuna et al., 2007). Although some studies have incorporated quantitative weighting, none have considered the relationships or dependencies between factors in SWOT analysis. This is important because it cannot be assumed that the factors in a SWOT analysis are independent and unrelated. In the use of SWOT, there is no possibility of a comprehensive evaluation of the strategic decision-making situation. Furthermore, SWOT does not provide tools for analytically determining the significance of the actors involved. Therefore, SWOT analysis is primarily based on qualitative analysis and the skills and expertise of individuals.

RESULTS AND DISCUSSION

Effectiveness of Predictive Policing Technology Currently Applied in Preventing Brawl Crimes in the Jurisdiction of the Metro Bekasi City Police

The predictive policing technology currently implemented by the Metro Bekasi City Police in efforts to prevent brawl crimes has significant potential, but still faces various challenges regarding its effectiveness. Conceptually, predictive policing aims to utilize historical crime data, statistical analysis, and intelligence to predict when and where crimes are likely to occur, including the potential involvement of specific individuals in these crimes. However, the effectiveness of this technology in preventing brawl crimes in the jurisdiction of the Metro Bekasi City Police has not yet been optimal due to several factors influencing its outcomes.

First, the data integration, which is the foundation of predictive policing systems, remains weak. Data on offenders, victims, locations, and times of brawl incidents are often not effectively connected. This results in inaccurate predictions and inadequate responses from law enforcement. For example, crime offender forecasting or predictions regarding the time and location of brawls often fail to provide enough in-depth information, making it difficult for police to formulate appropriate preventive actions. The reliance on poorly integrated systems also reduces effectiveness in detecting crime patterns and identifying high-risk areas that require more attention.

Second, the police response, implemented through predictive policing technology in Metro Bekasi City, is still predominantly reactive. A greater emphasis on early detection often overlooks more proactive interventions addressing the root causes of brawl crimes, such as social conflicts among youth groups or underlying economic and educational issues that contribute to juvenile delinquency. Predictive policing has mainly focused on general crime prevention at smaller neighborhood units (RW), such as dialogic patrols and increasing police presence, but has not reached deeper and more comprehensive handling of the social issues that trigger brawls.

Moreover, community involvement in supporting predictive policing is not yet fully effective. More active community participation in providing relevant information about potential brawls could strengthen the data used for predictive analysis. However, the lack of synergy between the police and the community results in less optimal use of information gathered from the field, which impacts the accuracy of predictions. Additionally, the

community is often less involved in direct preventive efforts, despite their crucial role in detecting potential conflicts within their neighborhoods.

The effectiveness of predictive policing technology is also hampered by limitations in using more advanced information technology. Although efforts have been made to use data and algorithms to estimate potential crime, the current systems are not supported by advanced analytical technologies capable of processing big data in real-time or using machine learning to enhance prediction accuracy. As a result, the analysis process remains static and less responsive to changes in the social dynamics on the ground.

Predictive policing, which relies on technology and data analysis to forecast and prevent crimes, holds significant potential to improve the effectiveness of handling brawl crimes in the jurisdiction of the Metro Bekasi City Police. Based on the theory of predictive policing, this technology assists the police by utilizing historical data and current information to detect crime patterns, map areas prone to brawls, and predict when and where brawls are most likely to occur. By using data analysis software and Geographic Information Systems (GIS), the police can develop more focused, proactive strategies for prevention (Sofia, 2023).

In the case of brawl crimes, predictive policing allows the Metro Bekasi City Police to take preventive actions in areas deemed high-risk. By mapping past locations and times of incidents, along with situational factors that trigger brawls, the police can place officers in high-risk locations and patrol more effectively. Technologies such as facial recognition and vehicle identification can also be used to identify individuals who have been involved in previous brawls, allowing for more targeted prevention efforts aimed at those with a high potential to reoffend.

However, the effectiveness of predictive policing technology in the jurisdiction of the Metro Bekasi City Police still faces several obstacles. One major issue is the lack of proper data integration and the suboptimal use of algorithms to predict brawl crimes. For example, data collected on offenders, victims, locations, and times of incidents are often not well connected, resulting in less accurate predictions. Additionally, predictive policing places more emphasis on early detection, yet police responses are often still reactive and fail to address the root causes of conflicts that lead to brawls.

Another aspect to consider is the risk of bias in data analysis. Predictive policing may lead to errors in mapping certain areas as high-risk, which could reinforce social stigma against specific groups or neighborhoods. This criticism is related to concerns about racial discrimination or social injustice, especially if the technology is not implemented with adequate caution (Poechhacker, 2022).

The predictive policing technology in the Metro Bekasi City Police jurisdiction is still not fully effective in preventing brawl crimes due to various weaknesses in data integration, a reactive approach, lack of community involvement, and limitations in analytical technology. To optimize its effectiveness, improvements are needed in data integration, further training for officers in using predictive technology, and enhanced cooperation with the community. A more holistic and comprehensive approach to addressing the social issues underlying brawls is also essential for predictive policing to become a more effective tool in preventing these crimes.

To improve the effectiveness of predictive policing in preventing brawl crimes, it is crucial for the Metro Bekasi City Police to pay more attention to data integration, enhance officer training in predictive analytics technology, and strengthen community involvement in prevention programs. By doing so, predictive policing can become a more efficient and effective tool in reducing the occurrence of brawls and maintaining public order.

Challenges Faced by the Metro Bekasi City Police in Integrating Predictive Policing Technology to Prevent Brawl Crimes

The Metro Bekasi City Police face a number of challenges in integrating predictive policing technology to prevent brawl crimes. First, there is a lack of integration of data from various sources used in the prediction process. Predictive policing requires comprehensive and structured data, including data on crime offenders (predicting offenders), potential victims (predicting victims), crime locations and times (predicting crime locations), and relationships between offenders (predicting criminal collaborations). However, this data is not well-integrated, which leads to inaccuracies in making predictions. As a result, the information provided to the police about potential brawl crimes is insufficient and does not offer a comprehensive picture of the situation that is likely to occur (Kim, 2022).

Second, there are limitations in the technology infrastructure supporting predictive policing. The information technology used to collect, analyze, and disseminate data is often still outdated or inadequate. This insufficient technology impacts the quality of data analysis, reducing the police's ability to conduct early detection and prevention of potential brawls. Additionally, the lack of advanced technology can also hinder access to real-time data, which is crucial for taking swift action when brawl incidents arise.

Third, there is a lack of training for law enforcement officers in effectively using predictive technology. Predictive policing requires expertise in data analysis, understanding crime patterns, and operating the existing technological systems. However, if police personnel are not adequately trained, they may struggle to fully utilize the technology. This results in a lack of timely and targeted responses to emerging brawl threats (Berkowitz, 2003).

Fourth, there is insufficient coordination among units within the Metro Bekasi City Police, as well as limited involvement of other stakeholders, such as the community and local government, in preventing brawls. Without strong synergy between the various units involved in predictive policing, the data generated may not be used optimally. Similarly, limited community involvement can lead to the failure to detect potential social conflicts early. Community participation is crucial in providing information about vulnerable groups or areas at high risk of brawl incidents.

Fifth, the reactive policing model remains a significant obstacle in leveraging predictive policing. Although predictive technology is designed to be proactive by detecting threats before they occur, current practices often show that police actions are reactive, responding only after a brawl has taken place. Slow responses that focus only on mitigation without addressing the root causes, such as social conflicts within the community, mean that predictive policing has not yet made a significant impact on preventing brawls (Dirgala, Basir, and Nita, 2023).

The implementation of predictive policing technology to prevent brawl crimes in the Metro Bekasi City Police jurisdiction can be analyzed through the lens of Evaluation Theory, particularly using the CIPP model (Context, Input, Process, Product) introduced by Stufflebeam. This model includes four main components: context evaluation, input evaluation, process evaluation, and product evaluation, all of which are relevant in identifying the barriers preventing the successful integration of predictive technology in policing.

Context Evaluation

The main challenge at this stage is related to the social, cultural, and political environment in which the Metro Bekasi City Police operate. External factors such as social norms, the level of public trust in the police, and the economic situation can affect the effectiveness of integrating predictive technology. The public in Bekasi may be resistant to the use of surveillance technologies that are perceived as a threat to privacy. Additionally, differences in perception between the police and the public regarding the urgency and need for such technology can be a challenge in gaining the necessary public support.

Input Evaluation

In the input evaluation, the challenges faced are related to the resources available for implementing predictive policing technology. One of the main challenges is the limited budget for acquiring the necessary technological infrastructure, such as analytical software, data storage servers, and advanced hardware. Additionally, the lack of personnel with information technology and data analysis skills is a significant barrier. Developing human resource capacity to effectively use this technology requires specialized training and mentorship, which may not yet be available within the organizational structure of the Metro Bekasi City Police.

Process Evaluation

At the implementation stage, challenges often arise in coordination among various units within the police force and between the police and related agencies. Technical challenges such as the lack of interoperability between systems or integration issues between predictive technology and the existing police information systems can also hinder the implementation of predictive policing. Additionally, internal resistance from police officers who are unfamiliar with or reluctant to use new technologies may also be a barrier. The process evaluation should focus on how this technology is applied in daily practice, as well as identifying operational and communication barriers that slow down its adoption.

Product Evaluation

Challenges in the product evaluation stage are related to measuring the impact of implementing predictive policing technology on preventing brawls. Challenges in measuring the effectiveness of this technology include the lack of accurate and reliable data for analysis and the difficulty of distinguishing between outcomes caused by the technology and outcomes resulting from other factors, such as an increase in patrol personnel or other preventive activities. Additionally, if the product evaluation shows that the technology has not led to significant reductions in brawl incidents, there is a risk that it may be deemed ineffective by police leadership or stakeholders.

The challenges faced by the Metro Bekasi City Police in integrating predictive policing technology involve external environmental factors, resource limitations, technical barriers in implementation, and difficulties in measuring the technology's impact. Evaluation Theory, particularly the CIPP model, can help identify these barriers and provide a foundation for recommending improvements and steps to enhance the effectiveness of the program in the future (Seldadyo, Sudarto, and Sonta, 2022).

To optimize predictive policing in preventing brawl crimes in the jurisdiction of the Metro Bekasi City Police, a comprehensive evaluation of the technology systems in use, more intensive training for officers, and improved coordination among units and public participation are required. Furthermore, prevention efforts should focus more on addressing the root social issues that trigger brawls, rather than just early detection or crime prevention.

Optimization Strategy for Predictive Policing Technology to Improve the Effectiveness of Brawl Crime Prevention in the Metro Bekasi City Police Jurisdiction

The strategy for optimizing predictive policing technology to improve the effectiveness of brawl crime prevention in the Metro Bekasi City Police jurisdiction must involve a comprehensive approach focused on improving data quality, system integration, and community participation. A SWOT (Strengths, Weaknesses, Opportunities, Threats) approach can be used to formulate strategies for optimizing technology in predictive policing to enhance the effectiveness of brawl crime prevention in the Metro Bekasi City Police jurisdiction. SWOT analysis helps identify both internal and external factors that affect the implementation of predictive policing technology.

In predictive policing technology, its primary strength lies in its ability to leverage big data and advanced analytics to detect potential crimes before they occur. In the Metro Bekasi City Police, the implementation of predictive technology can enhance the effectiveness of police patrols by directing resources to areas at high risk of brawls. Additionally, the ability to map locations based on intelligence data and track potential offenders can be a significant strength in reducing reactive responses to brawls and shifting toward a more proactive approach. The optimization of predictive technology can be achieved by strengthening the integration of data from various sources, such as historical crime data, social data, and geographic data. By improving the quality of data analysis and visualization, the police can more accurately anticipate high-risk locations and target preventive interventions on vulnerable groups frequently involved in brawls.

One of the main weaknesses in implementing predictive policing technology in the Metro Bekasi City Police jurisdiction is the lack of effective data integration, as mentioned in the background. Data from various sources (offenders, victims, locations, and crime times) have not been fully connected, which leads to less accurate predictive analysis, sometimes irrelevant to the dynamics of conflicts occurring in the field. Furthermore, the limited human resources in terms of technological skills pose a major challenge to fully leveraging the technology. To address this weakness, the optimization strategy must include enhancing officer training in the use of technology and data analysis. Additionally, a more robust data integration system needs to be developed, where information from various police functions and external stakeholders (such as educational institutions, community organizations) can be accessed and processed in real-time to provide more accurate predictive analysis.

Predictive policing technology holds great potential for growth as technology capabilities such as artificial intelligence (AI) and machine learning improve. In the Metro Bekasi City Police, the application of AI could enable smarter modeling of criminal behavior, identify brawl patterns based on historical data, and predict potential future incidents. Moreover, another opportunity comes from the growing public awareness of the importance of security and their desire to participate in crime prevention. Predictive policing can be optimized by actively involving the community in the process of gathering information and reporting suspicious situations. Community-based policing systems or online reporting apps can facilitate citizens to participate, providing valuable data for predictive analysis, while also enhancing their sense of ownership and involvement in maintaining community safety (Ishmael and Emeka, 2021).

However, there are several threats in implementing predictive policing technology. One of the main threats is over-reliance on technology, which may overlook the social and psychological factors that influence youth behavior in brawls. Additionally, cybersecurity threats, such as data breaches or misuse of sensitive information, also present risks that need to be addressed. To face these threats, the proposed strategy is to strengthen data security and build a robust privacy protection system. Moreover, it is important not only to rely on data and technology but also to involve criminologists, psychologists, and sociologists in designing more holistic interventions for brawl criminal behavior, including rehabilitation and prevention programs for youth (Sarwono, 2012).

Through SWOT analysis, the optimization strategy for predictive policing technology in preventing brawl crimes at the Metro Bekasi City Police should include enhancing data integration, training officers, developing more advanced systems, and ensuring active community participation. By leveraging the strengths of technology, addressing weaknesses in the current system, exploring new technological opportunities, and anticipating emerging threats, the effectiveness of brawl crime prevention can be significantly improved. Several steps that can be taken in this strategy include:

a. **Improving Data Quality and Forecasting Systems** Data quality is a key element in predictive policing. The first step in optimization is to ensure that the data used to predict potential brawl crimes—whether related to offenders, victims, locations, or crime times—are accurate and real-time. This requires integrating various sources of data, such as police reports, intelligence data, and information from the public and technologies like CCTV or social media. The use of big data technology and predictive analytics can help process this vast and complex data to generate more accurate predictions. Additionally, periodic evaluations of the forecasting models should be conducted to ensure that predictions remain relevant to the dynamic crime situations in the field (Tulumello and Iapaolo, 2021).

b. **More Effective Information System Integration** One of the main issues in implementing predictive policing in the Metro Bekasi City Police is the lack of integration between different types of data, such as data on offenders, victims, and crime locations. To address this, a system must be built that seamlessly integrates data from various sources. Implementing a centralized information system that connects police units can allow for quicker detection of crime patterns and make it easier for law enforcement to respond more effectively to potential brawls. Technologies like Geographic Information Systems (GIS) can also be used to visually map high-risk crime locations and assist in strategically deploying police personnel in the field.

c. **Use of Advanced Technology for Predictive Analysis** Advanced technologies such as machine learning and artificial intelligence can be applied in predictive policing systems to analyze offender behavior patterns and potential crime locations. Through this technology, the police can identify areas with high risks of brawls and recognize individuals or groups likely to be involved in these crimes. Sophisticated predictive algorithms can leverage historical data to identify trends and patterns that were previously undetectable. For example, machine learning technology can study data from past brawl incidents and predict when and where the next brawl may occur, as well as who might be involved (Abdulkareem, 2023).

d. **Improving Collaboration and Coordination Between Units** To enhance the effectiveness of predictive policing, better coordination is required between the various police units involved in preventing and handling brawl crimes. Units responsible for data collection, analysis, patrols, and interventions should collaborate synergistically to ensure that the information obtained from predictive systems can be swiftly implemented into appropriate preventive actions. With integrated supporting technology, information about potential brawl incidents can be directly distributed to field units responsible for security and enforcement actions.

e. **Training and Developing Personnel Capacity** Predictive technology will only be effective if police personnel have the necessary capacity to utilize the technology. Therefore, intensive training should be provided to law enforcement officers on how to optimally use predictive tools and systems. This training should include the ability to interpret predictive data, take appropriate preventive actions, and use technological tools such as mobile apps or data dashboards that allow police to respond quickly to potential crimes. Furthermore, officers should be trained in a humanistic.

CONCLUSION

Based on the explanation above, it can be concluded that:

The predictive policing technology implemented by the Metro Bekasi City Police has great potential in preventing brawl-related crimes; however, its effectiveness is still limited by several challenges. Weaknesses in data integration, a reactive approach, limited community involvement, and insufficient analytical technology are the main factors hindering optimal performance. Data that is not effectively connected often results in inaccurate predictions, while police responses are still not proactive enough to address the root causes of brawls. To improve its effectiveness, enhancements are needed in data integration, technology training for officers, and more active community participation in preventing brawls.

The Metro Bekasi City Police face several challenges in integrating predictive policing technology to prevent brawl-related crimes, particularly related to the lack of comprehensive data integration, limited technological infrastructure, and insufficient training for law enforcement officers in effectively using this technology. Additionally, weak coordination between police units and limited community involvement are also barriers. Although predictive policing aims to be proactive, its implementation on the ground is still more reactive, making it unable to fully address the social root causes that trigger brawls. These limitations affect the accuracy of predictions and the preventive response to potential brawls.

The strategy to optimize predictive policing technology in preventing brawl-related crimes at the Metro Bekasi City Police involves better data integration, the use of advanced technologies such as big data and artificial intelligence, and intensive training for personnel. This predictive system allows the police to identify high-risk areas and individuals, and to respond proactively before a brawl occurs. The SWOT analysis reveals the importance of improving data quality, collaboration among units, and community participation in providing local information. By leveraging the strengths of technology and strengthening system integration, the effectiveness of brawl prevention can be significantly improved.

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