



## A Pragmatic Approach in Analyzing Information and Communication Technology-Based Policing and Community Involvement in Crime Prevention and Solution

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### Abstract

A police organization's success is tied to evaluating its efficacy in crime prevention and solving those already committed. This called for the integration of police force's innovative efforts to reduce crime and social disorder. A pragmatic approach was employed in the study to investigate the effectiveness of the Information and Communication Technology (ICT)-Based Policing and community involvement in crime prevention and solution. Validation of the findings was through index crime data, index crime clearance efficiency and index crime solution efficiency. The results revealed high levels of effectiveness in crime prevention ( $M = 4.03$ ,  $SD = 0.57$ ) and crime solution ( $M = 3.91$ ,  $SD = 0.61$ ). The primary drivers of these are the creation of Information Communication Technology (ICT)-compliant Police Offices or Stations, Geographic Information System-Based Crime Analysis (GIS-BCA) and Web-Based Geographic Information System (WebGIS); maintenance of programs on e-projects such as the CIRAS, e-Rouge and e-warrant and the implementation of the Web-Based Online Community Engagement Survey (WeBOCES) which is utilized as an internet/web-based community assessment of police performance satisfaction, respect, trust and safety indices. The number of Television, Radio, Internet, Messaging and Print (TRIMP) Media activities participated in by the police made the stakeholders become more aware of the programs, activities, and initiatives of the organization. This eventually led to greater community involvement in crime prevention and solution and public safety, as well as increased satisfaction on the performance of and trust on the police.

**Keywords:** Crime prevention and solution, Level of effectiveness, ICT-based policing, community involvement

### Introduction

Crime is common in rural and urban areas due to population growth and rapid urbanization. Government agencies and other authorities are trying to overcome the problem by investing resources in prevention measures (Marzbali, Abdullah, Razak, & Tilaki, 2011). The turn to preventive approaches called for the integration of innovative efforts from the police to reduce crime and social disorder (Barthe, 2006). Researches were conducted for the past 20 years serving as important components of strategies to

reduce crime and form bases for policy formulation and initiatives. But questions remained about how the major initiatives can help foster the creation and use of a research-informed knowledge base for crime prevention and community safety (Tilley & Laycock, 2018). As pointed out by Welsh & Farrington, (2009), there is a need for rigorous and systematic methods in synthesizing the research evidence and examining policy implications. Researches around the world consistently demonstrate that a continual lack of access to adequate crime prevention knowledge and

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technical skills reduces the effectiveness of many crime prevention initiatives, such as in addressing the internationalization of crime (Homel, 2009). The internationalization of crime can be addressed by increasing the efficiency of knowledge transfer, skills development, project and program management, and performance measurement and evaluation (Homel, 2009).

The number of crime prevention strategies is limited but continues to increase. In 2010, 24 countries had such a strategy, and 21 countries have instituted a national coordinating or developmental body for these specific strategies (International Centre for the Prevention of Crime, 2010). While information is limited, important differences can be observed from one region of the world to another. Analysis of the policies in ten African countries indicates an emphasis on the protection and education of children and youth and poverty eradication. Similar approaches are identified in 15 Latin American and Caribbean countries, where entrenching a culture of peace and respect for human rights seems to be a priority after experiencing authoritarian regimes. Restoring trust between citizens and institutions, particularly the police, is frequently included in prevention plans. Data from seven Asian countries show that policies appear more sectoral (e.g. providing youth support) and focused on human and drug trafficking. In Europe, Australia, Canada, the United States, and New Zealand where information is more readily accessible, the priorities are youth crime, school-based violence, the eradication of racism and discrimination, and, to a lesser degree, corruption (International Centre for the Prevention of Crime, 2010).

Evidence from several countries indicate that implementing and sustaining effective and efficient crime prevention initiatives can contribute significantly to the achievement of safe and secure societies. For example, recent figures from the Australian Bureau of Statistics (ABS) show a drop of around 10 percent in most categories of

crime from 2006 to 2007 (ABS, 2008). In Canada, the figures for reported crime indicate that the 2007 national crime rate is at its lowest in 30 years, marking a seven percent decline from the previous year and the third consecutive annual decrease. Similar patterns exist in the United Kingdom, where figures show that crime in England and Wales has fallen by 42 percent, such that the risk of being a victim of crime is now only 24 percent compared with 40 percent in 1995 (Homel, 2009).

Despite several studies conducted on crime prevention strategies, Vollaard (2006) pointed out that government agencies and policymakers still tend to have very limited information on how to fight crime and maintain public order. Among the different government agencies in the Philippines, the Philippine National Police (PNP) plays a vital role in addressing the prevailing needs of the community in terms of peace and order and public safety. As one of the PNP's police regional offices in the country, Police Regional Office-Cordillera (PRO-COR) has to adopt and align with the transformation program of the PNP to be highly capable, effective and credible institution in achieving a peaceful and secure community. The implementation of the PNP Performance Governance System (PGS) as part of the transformation agenda known as the PNP P.A.T.R.O.L. 2030 Plan provided an impetus to advance the institution's strategic crime prevention and solution initiatives.

Pragmatism posits that "true ideas are those that we can assimilate, validate, corroborate and verify" (James, 1907 as cited in Kardasz, 2008). Pragmatism as a holistic school of thought assures that theories are tested in context; focuses on making positive connection with the actual and concrete world of finite human lives; and uses measurable and scientific facts (James, 1907 as cited in Shield, 1995). Finding the truth helps in sorting hypothesis from experience, helps mediate between experiences, and welds theory and fact (Flower and Murphy, 1977 as cited in



Shield, 1995). Using a pragmatic approach, the current study analyzed the effectiveness of Information and Communication Technology (ICT)-Based Policing and community involvement in crime prevention and solution through the experiences of the stakeholders. Validation of the findings was through measured data in terms of index crime data, index crime clearance efficiency and index crime solution efficiency.

### Methodology

Quantitative research design using a researcher-made questionnaire, structured interview, and document analysis was employed in this study to determine the effectiveness of Information and Communication Technology (ICT)-Based Policing and community involvement in crime prevention and solution.

The study was conducted in the Cordillera Administrative Region (CAR) in the

Philippines composed of one (1) chartered city, seventy-five (75) municipalities, and one component city with 1,177 barangays in the Philippines. The respondents of the study were members of the Provincial and City Peace and Order Councils (P/C POC) and the Provincial and City Advisory Councils (P/C AC). The PPOC and the CPOC is composed of the governors and different government line agencies which are created through the Local Government Codes. The PPOC is a forum wherein issues/concerns about peace and order, public safety, the environment, and good governance are discussed and threshed out holistically. The P/C AC on the other hand, consist of stakeholders from different sectors of society, including the local government units, non-government agency, media, religious/ church, business, academe, civil society, senior citizen, youth, and other relevant sectors of society.

Mean values were computed to determine the level of effectiveness of the crime prevention and crime solution activities. The mean values were interpreted as follows:

NUMERICAL VALUE	Scale	INTERPRETATION
5	4.21 - 5.00	Very Highly Effective (VHE)
4	3.41 - 4.20	Highly Effective (HE)
3	2.61 - 3.40	Moderately Effective (ME)
2	1.81 - 2.60	Less Effective (LE)
1	1.00 - 1.80	Ineffective (IE)

### Results and Discussion

Crime prevention is a concept that has been applied in different ways to the issue of crime. It has been used to refer to both activities (e.g. crime prevention programs and/or strategies) and outcomes (e.g. lower levels of crime in communities and/or lower levels of offending/re-offending by individuals) (Byrne and Marx, 2011).

One strategy which showed the impact of the involvement of the community in crime prevention was the recruitment and training of Barangay Peacekeeping Action Teams (BPATs). This

indicator got a mean of 3.94 ( $SD = 0.82$ ), which is interpreted as highly effective. The Barangay Peacekeeping Action Teams (BPATs) is composed of a group of individual volunteers from the barangays who provide assistance to the authorities or police on matters pertaining to peace and order, crime prevention and control, and public safety in the locality. Singh (n.d.) emphasized that the development of a proactive approach to crime prevention is accompanied by community policing. The most strenuous efforts by the police alone will not produce the desired



results if the community stands by passively in the erroneous belief that crime is purely a police responsibility. The community must accept that the task of crime prevention is as much a community responsibility as it is a police responsibility must join hands with the police to make crime prevention effective. Singh's statement is aligned with the theory of reciprocal responsibility contained in the PNP's Police Community Relations Manual of 2003 which states that the police on their own cannot effectively prevent and control crime. Crime is everybody's business. Sir Robert Peel's 7<sup>th</sup> principle of law enforcement likewise emphasizes that "the police at all times should maintain a relationship with the public that gives reality to the historic tradition that the police are the public and the public are the police; the police are the only members of the public who are paid to give full-time attention to duties which are incumbent on every citizen in the intent of the community welfare" (Law Enforcement Action Partnership, n.d.).

Researchers have examined the influence and role of formal and informal social control mechanisms. The former refers to the deterrent effects of the police, courts, and corrections, while the latter works through mechanisms of attachment, commitment, and involvement with one's family, peers, school, work, community. Informal control mechanisms accounts the role of shame and belief systems or religion in relation to crime prevention (Byrne and Marx, 2011). As emphasized by Homel (2009), crime prevention must be a responsibility which concerns all of society. Effective crime prevention policies need to establish channels of communication and platforms of exchange aimed at actively involving individual citizens, non-government organizations, private relief organizations, professional and religious associations, and the private sector in determining how to make society collectively safer through civic commitment and courage, as well as democratic participation. As underscored by Interviewee A, "Crime prevention and solution including the

overall public safety cannot be done alone by the police. Teamwork and community cooperation are still important. There is a need for the sharing and distribution of responsibility between the police and civilians, and a big percentage of the community, more often than not, can contribute in the prevention and solution of crimes as long as the police maintains good relations with the community at large or with the ordinary or common people" (personal interview, January 12, 2019).

The engagement of the members of the community in the investigation of crimes was proven to be highly effective (M=3.8870), as well. An evidence of the involvement of the community is seen through the recruitment and training of Barangay Information Network (BIN) members, conduct of trainings for informants and utilization and maintenance of BINs. BIN members are volunteers from different barangays who provide information to the authorities/ police about illegal activities/ presence of criminal elements and/ or matters concerning crime prevention and control, peace and order, internal security, and public safety in the locality. The active participation of BIN in information collection effort provided PRO-COR a good grasp of crime environment at the grass root level. The strategic initiatives were implemented with the objective of improving community safety awareness through community-oriented and human rights-based policing. In addition, the involvement of the elders in crime solution activities in some provinces in CAR is highly evident which further enhanced the effectiveness of PROCOR's crime solution initiatives. The aforementioned emphasized that community policing is a proactive policing philosophy that when implemented involves community partnerships, organizational transformation, and problem solving to address issues of crime, social disorder, and fear of crime (Cordner, 2014). Community partnerships entail having shared responsibility over community problems that do not focus strictly on a law enforcement response (Rohe, Adams, & Arcury, 2001).



The “establishment/creation of Information Communication Technology (ICT)-compliant Police Offices/Stations” was also proven to be highly effective ( $M = 3.84$ ,  $SD = 0.85$ ). The result of the survey serves as a measure of the PNP’s objective to develop a responsive police organization through the use of ICT, which is included in the PNP Scorecard. For a police station to be ICT compliant, there should be a telephone, radio communications equipment, cellphone or facsimile machine, and internet connectivity with standard computer equipment that can run systems applications manned by competent PNP personnel.

The need for the establishment/creation of Information Communication Technology (ICT)-compliant Police Offices/ Stations on crime prevention was stressed by Interviewee A (personal interview, January 12, 2019). “Through [the] competency training of the police with the latest technology, wherein they can generate crime data immediately, they could easily deploy their patrols where crime incidents are prevalent. Because of this, they can also focus more on a more problematic area or barangay. With the information that they can generate, such as the place/location of the crime, time of commission, crime hotspots, modes of crime committed, then, all the more that they prevent and solve crimes.” Interviewee A further highlighted the impact of ICT based initiatives on crime prevention. They shared that even in crime reporting & monitoring systems, there is already a great improvement. Interviewee A shared that even in crime reporting & monitoring systems, there is already a great improvement. Crimes are now immediately and accurately reported. His statement corroborates the study of Welsh and Farrington (2007) which emphasized that technological advances over the years have had a profound influence on the way people think about crime and the efforts that are taken to prevent it. An area where information technology has been used to prevent crime is in the use of newly developed computer softwares and the creation of devices to monitor individual

transactions and communications, on the cell phone, over the internet, and on various web-based social media sites (Soghoian, 2011). A review of the efforts to prevent crime underscores the point that technology – or more precisely, technological innovation – has been the driving force leading to reform of crime prevention and crime control strategies, both by individual citizens and concerned groups, and by formal police agencies (Reichert, 2001; Chan, 2001; Harris, 2007).

A review of the historical development of efforts to prevent crime underscores the point that technological innovation has been the driving force of reforms in crime prevention and crime control strategies. The drivers of those reforms are individual citizens, concerned groups, and formal police agencies (Reichert, 2001; Chan, 2001; Harris, 2007). As revealed in this study, the use of soft technology like the internet was effective in solving crimes, according to the member-respondents from the PPOC and RAC, whose answers were validated using PRO-COR’s scorecards.

In relation to IT solutions, PRO-COR’s “use of internet/web-based investigative methods in the investigation of crimes/cases” ( $M = 3.69$ ,  $SD = 0.82$ ) and “use of internet/ web-based investigative methods in the filing of criminal cases against identified/ arrested suspects” ( $M = 3.71$ ,  $SD = 0.78$ ) was also highly effective. These methods refer to PNP’s e-Projects using internet/web-based programs to store, monitor/ evaluate and report crime statistics/data in real-time through the Next Generation Investigation Solution or NGIS. One of the Police’ office biggest innovations is the Geographic Information System-Based Crime Analysis (GIS-BCA). This is a tool used to analyze crime incidence and provide a logical basis for efficient and effective police interventions. The GIS-BCA allows officers to identify crime hotspots using trends, patterns, and relationships, as well as areas where the police have already intervened. The Institute for Solidarity in Asia and the Center for International Private Enterprise observed that crime tends to shift in areas that experience



police intervention (Institute for Solidarity in Asia & Center for International Private Enterprise, 2015). Another project initiated was the Web-based Geographic Information System (WebGIS), a crime-mapping program accessible to civilians. It allows tourists and residents to view crime-prevalent areas for their safety and security (PRO-COR, 2018). Another strategy by the PRO-COR is the maintenance of e-projects such as the CIRAS, e-Rouge and e-warrant. These innovations and initiatives resulted in a faster and easier generation of crime-related data which contributed to the improved Index Crime Clearance Efficiency and Index Crime Solution Efficiency of the organization.

The PNP's Public Information efforts provide the internal and external audience with accurate information about the agency's programs and projects and, in some instances, clarify issues relevant to the PNP. It also addresses the need of information among the community and the police (Philippine National Police Community Police Relations Manual [Revised], 2012). The number of TRIMP (Television, Radio, Internet, Messaging and Print) Media activities participated in by PRO-COR such as the regular PNP Patrol Program "Pulis at ur Serbis" as platform of Information Operation, close coordination with GMA, TV Patrol Northern Luzon, PTV4, DZWT, Z-Radio, Bombo Radyo and other print media made the stakeholders become more aware of the programs, activities, and initiatives of PRO-COR. This eventually led to greater community involvement in crime prevention and solution and public safety, as well as increased satisfaction on the performance of and trust on the police.

Trust can impact the way the public engages with public organizations. For example, lower trust appears to cause people to lose confidence in services, reduce contact with them, and make them less likely to engage positively in helping and planning services. In particular those who distrust the police are much less likely to give evidence or help the police in their inquiries

(Rogers & Houston, 2004). Further, Otter (2017) underscored that for officers to behave in a way that fosters legitimacy and cooperation by the public, they too need to believe that they are being treated with fairness and respect internally within their police force. The research of Myhill and Quinton (2011) found that a policing approach that motivates the public to cooperate with the police and not to break the law could have significant benefits for crime prevention. The research further revealed that the most important factor motivating people to cooperate and not break the law was the legitimacy of the police. Trust and shared values were found to be key aspects of legitimacy. These attitudes were largely fostered by the perception of police fairness and not by the perception of police effectiveness (in terms of responding to emergencies, preventing and detecting crime, and keeping order). In other words, the legitimacy of the police in the eyes of the public was primarily based on people thinking officers would treat them with respect, make fair decisions and take time to explain them, and be friendly and approachable. This kind of mutual trust and respect has been achieved between the PRO-COR and the community for the past years, as evidenced by the consistently high Regional Safety Indices, Police Performance Satisfaction Indices, Trust Indices and Respect Indices as reported in the PRO-COR's scorecards. From 2015 to 2018, the Regional Safety Indices ranged from 95% to 98.22%; Police Performance Satisfaction Indices from 95% to 98.14%, Trust Indices from 94% to 97.78%; and Respect Indices from 93% to 97.58%. The reported values were measured through the "survey of people's/ community's respect, trust, performance satisfaction and feeling of safety amidst police presence" ( $M = 3.88, SD = 0.77$ ), which was highly effective according to the respondents. The Community Engagement Survey gauges the perception of the community on how the PRO-COR personnel are delivering the peace, order and security services to them. In the 2015



Community Engagement Survey, a majority (62.88%) trust the police, 61.39% of the community have good perception towards the police, 69.57% respect the police, and 62.74% feel satisfied with the police.

With the results of the survey, the effectiveness of the crime prevention initiatives can be evinced by a continuous decreasing trend in the crime index every year from 2013 to 2018 in the region. There is a recorded 34.5% decrease in crime index from 2013 (11,939 index crimes) to 2015 (7,819). This trend continued in 2016, when a total of 3,990 was recorded or a 48.97% decrease from the 2015 data. In 2017, the record reached 1,674 or a 58.05% decrease from the 2016 data. Finally, the year 2018 only had 1,159 records, translating to a 30.76% decrease from the 2017 crime index data.

On the other hand, the high level of effectiveness of the crime solution activities conducted and initiated by the PRO-COR are evidenced by the increases in the Index Crime Clearance Efficiency and the Index Crime Solution Efficiency in the Cordillera Administrative Region, which are reflected in the PRO-COR's Scorecards. Data show that in terms of the Index Crime Clearance Efficiency, an actual accomplishment of 59.51% was reported in 2015 which means an increase of 34.15% from the 25.36% baseline data of 2012. In addition, an actual accomplishment of 81.23% was reported in 2018 which means an increase of 21.72% from the 2015 baseline data. In terms of the Index Crime Solution Efficiency (ICSE), there was a notable accomplishment of 52.67% in 2015 that equates to an increase of 30.55% from the baseline of 22.12% in 2012. This efficiency rate enabled the PRO-COR to exceed the 5% commitment reported in the PRO-COR's (2018) Governance Performance Report Proficiency Stage. In 2016, the ICSE was reported to be 31.30% which means a decrease of 21.37% from the 2015 data. In 2017 and 2018, ICSE rose to 51.31% and

73.61%, respectively. The 2018 data showed a notable increase of 20.94% in the ICSE from the 2015 baseline data.

### Conclusion and Recommendations

The results of the study proved that technological innovations and community involvement are primary drivers in the effectiveness of crime prevention and solution initiatives. Thus, to maintain public volunteerism and community involvement there needs to be a continuous coordination of police community related-activities, regular conduct of meetings and dialogues to increase community awareness and participation in crime prevention and public safety. The adoption of ICT-based policing must be fully embraced by the stakeholders and funded by the government for it be fully effective. Evaluation of ICT effectiveness and community related activities can be done on a regular basis so as to see rooms for improvement in the implementation amidst the growing ecology of the PNP-Cordillera.

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