

PROBLEMS EXPERIENCED BY DETECTIVES IN THE PROCESSING AND UTILISATION OF CRIME INFORMATION AT THE RUSTENBURG DETECTIVE UNIT, NORTH WEST PROVINCE, SOUTH AFRICADoraval Govender¹**ABSTRACT**

To achieve reduction in crime rates and an increase in detection rates, there should be an alternative to the traditional 'reactive' model of investigating crime. The use of information to investigate crime is not unique to modern times. Investigating crime includes not only the collection of crime information, but the processing and the utilisation of crime information, aspects usually neglected by investigators. This article provides an insight into the problems experienced by detectives in the processing and utilisation of crime information in the investigation of crime. These problems give rise to decrease in detection rates. Processing and utilisation of crime information has proven to be the most important components in the investigation of crime. The type of processes used, is largely determined by the assignment received by the Crime Information Analysis Centre (CIAC), which fulfills the crime information needs of the South African Police Service (SAPS). From time to time crime analysts are expected to perform some of the tasks associated with each of the crime analysis processes. The detailed, analytical processing of crime information can provide timely and relevant information for detectives to accurately determine the nature of criminal activities, predict crime occurrences and identify perpetrators responsible for crimes. The success of crime information processing is centered on its timely utilisation to investigate crime effectively. The purpose of the study was to determine the strengths and weaknesses in the processing and utilisation of crime information at the Rustenburg Detective Unit in the North West Province of South Africa.

INTRODUCTION

Once the crime information is collected, the next concern is to process it; this means creating databases capable of automated searches and comparison (Reuland, 1997:11-12), Fundamentally, processing in policing is not simply analysing information about crime, but rather, the term 'processing' is used more generically to refer to the process of researching, sorting, reviewing, presenting and interpreting information about a range of policing problems (Cope, as quoted by Alison, 2005:90). Processing crime information products on crime patterns and offences is reliant upon good information being available. If information is incomplete or inaccurate, then any subsequent analysis will be unreliable (Ainsworth, 2001:59).

Criminal investigations revolve around the utilisation of crime information, whether subjective or objective, by means of which the whole truth of a crime situation can be revealed (Du Preez, 1990:376). Investigation of crime makes heavy demands on detectives. It makes sense therefore, to successfully investigate crime; a detective must have in-depth knowledge and skills of crime information processing and utilisation. According to Altbeker (1998:28), most detectives work in a routine and repetitive fashion. Deductive and inductive arguments and rational reconstruction of crime information is not applied to solve cases. An examination of what detectives do with the crime information they collect, raises a fundamental issue that surrounds crime information processing and utilisation. The utilisation of crime information products is important to identify conditions that facilitate crime, so that policy makers may make informed decisions about proactive and reactive approaches

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(Lyman, 1988:147). With regard to the ever changing circumstances of our modern era and the current high crime rate, we face the critical challenge of calling upon human and technological resources to investigate crime more successfully. Investigation analysts need to live up to new expectations as more intelligent ways of combating crime are discovered. The correct and successful processing and utilisation of crime information can ensure the success or failure of a crime under investigation.

CONCEPTUALISATION

Investigation of crime: Du Preez (1996:1) defines investigation of crime as “a systematized search for the truth, with the primary purpose of finding a positive solution to the crime with the help of objective and subjective clues”.

Crime information processing: “Crime information processing is the systematic gathering, evaluation and analysis of information on individuals and/or activities suspected of being, or known to be, criminal in nature”(Gottlieb, Arenberg & Singh, 1994:3).

Criminal intelligence: “Criminal intelligence can be said to be the end product of a process often complex, sometimes physical, and always intellectual, derived from information that has been collated, analysed and evaluated in order to prevent crime or secure the apprehension of offenders” (ACPO 1975: para.32).

Dissemination for utilisation: “Dissemination is the release of information or a crime analysis product to a client under certain conditions and protocols for the purpose of utilisation in the investigation of crime” (Peterson, 1994:269).

Feedback on utilisation: Feedback on the utilisation, is the informing of the crime analyst of the outcome of the information or crime analysis product (Reuland, 1997:36).

BACKGROUND INFORMATION ON THE RESEARCH PROJECT

Research questions

The researcher identified the following specific research questions:

1. What is the understanding of the concept “processing and utilisation of crime information for the investigation of crime?”
2. What problems do detectives at the Rustenburg Detective Unit experience in the processing and utilisation of crime information?
3. What measures should be implemented, to address the problems experienced by detectives in the processing and utilisation of crime information?

Research design and approach

The empirical research design worked well in this study, as the researcher collected data in the form of written and spoken language, and analysed the data by identifying and categorising themes. This also allowed the researcher to study selected issues in depth, openness and detail, as he identified and attempted to understand the categories of information that emerged from the data.

The qualitative approach involves the study, use and collection of a variety of empirical material through case study analysis, personal experience, and interviews: all of which in

practice describe the problem and meaning associated with it. The qualitative approach is that approach in which the procedures are not so strictly formalised; the scope is more likely to be undefined, and a more philosophical mode of operation is adopted (Mouton and Marais, 1996:155-156). The Rustenburg Detective Unit was contextualised for purposes of this research, and the qualitative approach, involving a multi-method research process combining case study, literature, interviews and experience, was utilised.

Population and sampling procedures

The population sample of this study was all the detectives from the Marico Area in the North West Province of South Africa. This encompassed 36 police stations of the South African Police Service. Ideally, the researcher would have liked to study the entire population of detectives in the North West Province or nationally, to add more weight to the finding. However, due to financial, resource and time constraints, the researcher decided to choose the detectives at the Rustenburg Detective Unit as the study population for this research, because it was the largest detective unit in the Marico Area in the North West Province, and a unit where the detection rates needed improvement. In addition, it had the greatest number of detectives in the area, totaling 73 detectives (Govender, 2008:6).

The study population is the aggregate of elements from which the target population is actually selected. A target population is a subset or portion of the study population (Maxfield and Babbie (1995:82). It was decided to limit the study population for interviews to a sample of 30 detectives. Written permission to interview the detectives was obtained from the SAPS Head Office in Pretoria. The researcher considered this target population to be representative of the total population, because all detectives had been appointed in terms of the same policy requirements, underwent the same training, followed the same career paths and promotion systems, and functioned according to the national policy and standards.

The simple random sampling technique as described by Bouma & Atkinson, (1995:144) was used to select 30 detectives from the 73 detectives at the Rustenburg Detective Unit. This technique was used so that each of the 73 detectives was given an equal chance of being selected. There was no distinction between performing and non-performing detectives. The names of all 73 detectives were individually written on a piece of blank paper, folded up and placed in a non-transparent black bag. Each name picked out from the bag was recorded as one of the 30 detectives selected to be in the target population. The aim of the researcher was to study a representative number of people, to generalise the findings to the area of Marico in the North West Province, and not to generalise the findings to the SAPS nationally or provincially. According to Steyn (2002:71) results of a research study can be generalised to groups that participated in the research. The results need not be generalised to the SAPS in general. National/provincial generalisation was not of concern in this research, because there was clearly scientific value to gain from investigating a single category of individuals or group. However, according to Berg (2009:330) whenever research is undertaken, the findings should not only be generalised to fit the specific individual; group or event studied but also to generally provide an understanding about similar individuals, groups, and events. Since only 30 detectives from a total national/provincial population of detectives as at 31 March 2008 were sampled for interviews, it was decided not to generalise the findings nationally or provincially. This does not mean that poor performance of detectives nationally/provincially is because of the findings made in this particular research. It does, however, suggest an explanation for the reason why some detectives are likely to be performing poorly. The sample group of 30 was valid, representative and selected without any bias (Govender, 2008:7).

DATA COLLECTION

Researchers may use multiple forms of data collection methods in any single study (Leedy and Omrod 2001:158). Due to the possible influence of bias and values, three different kinds of data collection methods were used in this study, namely a case study, literature study and interviews.

Case study

The study was done on case dockets at the Rustenburg Detective Unit, which had been investigated by the target group. A sample of 100 case dockets was selected from a population of general crime case dockets that were closed between July 2005 and December 2005 (six months). A systematic sampling technique was used by choosing every tenth case docket for the case study. In this way, every case docket closed during the period in question had an equal chance of being selected. The purpose was to explore how information relating to a specific criminal case was processed and utilised for investigation purposes, and to determine the nature and extent of problems related thereto. Time was spent interacting on site with people investigating case dockets. Extensive data was collected in this case study. The researcher looked at the convergence of the data, as many separate pieces of information should point to the same conclusion. All the data was analysed during the data collection process.

Literature study

The researcher studied literature to determine current practices both nationally and internationally.

Interviews

Since interviews are regarded as one of the most commonly recognised forms of qualitative research (Mason, 2002:62), the researcher used interviews as one of the data collecting methods. Face-to-face interviews were held with interviewees, according to an interview schedule. All 30 detectives were individually interviewed. The purpose of the interviews was to determine how information was processed and utilised for investigation purposes and the nature and extent of problems that were experienced during this process. Due to the length of the interviews and the official capacity of the researcher as Area Commissioner, four interviewers with information management and crime analysis experience were selected to carry out the interviews. In addition, the researcher was concerned that the respondents would not communicate freely because of his rank and the fact that he was the Area Commissioner, therefore a decision was made to use field workers. The researcher provided the appointed interviewers with specific guidelines and training on how to conduct the interviews.

Purposive interviewing

The researcher used his own judgment and chose to personally interview certain senior officers in the SAPS because of their policing experience. The purpose of the interviews was to determine how information relating to the investigation of crime was processed and utilised and the nature and extent of problems relating thereto.

Experience

The researcher's policing experience of 36 years had exposed him to participant observation, literature and documentary studies relating to the processing and utilisation of crime information, both nationally and internationally. His acquired knowledge, skills and experience were used in this research.

DATA ANALYSIS

The researcher used the Data Analysis Spiral method to organise and analyse the collected data. The data was analysed using the following steps (Leedy & Omrod, 2001:161):

- The research questions served as units for use in the analysis process. The researcher started by breaking down the data into units for analysis by coding and categorising the units.
- The entire data set, coding and categories were perused several times to gain a sense of what it contained as a whole. Notes and comments made in the margins of transcripts and texts were reflected upon. This process assisted with possible re-categorisation and interpretation. Reflections aided to enrich the data with new thinking, as the analysis progressed.
- The researcher looked for recurring themes and interconnections between the units and categories that were emerging. General explanations and themes emerged, which were classified accordingly. The researcher managed to obtain a general sense of the nature and extent of the problems in the field.
- The researcher explored all emerging explanations and themes through purposive interviewing.
- After reflecting on the data and investigating the themes and explanations, the researcher integrated and summarised the data and developed a set of generalisations to explain the themes and relationships, which in turn gave rise to the findings.
- The new generalisations were used to make recommendations to improve the collection of crime information for use by detectives.

Validity and reliability

To warrant validity, the researcher ensured that the methods used to collect the data were administered in a consistent fashion and that the methods were accurate, honest and on target. Criterion validity was used in this regard to test whether the results of the interviews and case study correlated with the literature study, presumably as a related measure (the latter measure served as the criterion). The researcher pursued every possible measure to enhance the reliability of the measuring methods, in order to ensure that the same methods used by other researchers and/or at different times, would produce the same results. To achieve reliability, the researcher took care that the methods were administered in a consistent manner, in that the method was standardised from one situation or person to the next. Opinions of experienced and skilled detectives were obtained whenever subjective judgments were made regarding the data.

Ethical considerations

Participants were not exposed to undue physical or psychological harm. They were informed of the nature of the study to be conducted, and given the choice of either participating or not participating. Participants had the right to withdraw from the study at any time.

PROCESSING OF CRIME INFORMATION

Processing of crime information for the investigation of crime, entails identifying the exact nature of the problem and the characteristics of the incidents. Important factors to consider include where the incidents are occurring, at what times, who is involved, how and why the problem is occurring, and what solutions have been tried in the past. By determining the underlying causes of the problem through the gathering of detailed information, more effective investigative strategies can be developed. Such information can come from the police, outside agencies, experts, and from the community itself, and even from those offenders involved in the problem (Block, Dabdoub, & Fregly, 1995:3). One of the most important purposes of crime information processing in the investigation of crime, is to identify and generate crime information products needed to assist in the investigation of crime (Goldsmith, Mcguire, Mollenkopf and Ross, 2000:4). Reactive processing refers to the analysis that supports police activity after an incident has occurred. This includes analysing of data through to profiling, which is developed to support the investigation of crime (Cope, as quoted by Alison, 2005:91). The quality of the processed crime information products depends largely on how well the SAPS can store and access crime information. Crime information products are the charts, graphs, tables, summaries and other analytical compilations, which are produced in the course of an analytical review of materials (Peterson, 1994:6).

Role of analysts in processing

Personnel responsible for processing crime information products are known as crime analysts. Police managers recognise that competent crime analysts provide important crime information products (Goldsmith et al, 2000:4). A crime analyst's role depends on the organisational structure. There are two basic approaches to processing: centralised and decentralised. In areas with decentralised units, the analyst conducts analysis based on his/her areas of responsibility (station precinct or cluster). This makes the identification of a perpetrator whose activities cross boundary delineations difficult, since the analyst is often accessing information about his/her area only, and not the entire jurisdiction. In centralised situations, the analyst conducts analysis based on a global overview of the jurisdiction, with the ability to focus on smaller areas of concern as the need is identified. In the centralised approach, the analyst can bring a broad-based perspective to the table, backed by knowledge not only from a single area or another analyst's report, but also from personal knowledge, experience, and recall of previous reports and analyses (Reuland, 1997:28).

The timely and actionable crime information product is enriched into court-directed evidence by the investigator, who adds value to the crime information product (Jordaan, 2003b:59). Du Preez (1996:16-17) states that "the continued possession of information, from the time it is first collected until it is presented in court as evidence, must be assured - as well as its control, coordination and cumulative use". It is important to ensure the integrity of information collected, in order to avoid legal restrictions that may prevent the introduction of such information as evidence at a trial, or the development of a solid case for prosecution (Gardner, 2005:vii).

Processing

Processing can be done manually or with computer systems, though many agencies prefer the automated approach. Reuland (1997:12), however, argues that "Expensive computer applications are not the answer, as they are not a substitute for analytical creativity". Usually the analyst's skill, experience and creativity determine what to look for - computers only expedite the process.

Manual processing of crime information products can be traced back to the early 1900s, when August Vollmer introduced the English technique of systematic classification of known offender modus operandi (MO). Manual processing entails the systematic manual analysis of daily reports of serious crimes, in order to determine the location, time, special characteristics, similarities to other criminal events, and various significant facts that may help to identify either a criminal or the existence of a pattern of criminal activity (Block et al. 1995:221-222). Crime mapping and geographical profiling, (which is manually done on a map, by using a selection of different-coloured pins, each of which represents a crime or incident that has taken place) are useful in showing crime hot spots and allowing police observers to see at a glance where crime is concentrated. Such information assists police managers to allocate their resources more effectively and to focus their policing on those areas, which appear to have the highest rates of crime (Ainsworth, 2001:82).

There are often so many pieces of information, that it is impossible for the human mind to assimilate them, sort them out and use them for strategic and tactical crime analysis decisions. This has precipitated a technological revolution, such as computer mapping, which has generated a need for analytical methods and techniques to make spatial decisions, and a foundation for answering practical and policy questions in the policing environment (Block et al. 1995: 15).

Block et al. (1995:15) argues that the change from manual processing to automated processing is important, because not only does it supplement the expertise of an experienced police officer, but also because the knowledge and techniques accumulated over the years do not retire with a veteran detective. They are there for others to build on.

The COMPSTAT (Computerised Statistics) crime reduction strategy in New York City, started by using electronic pin-mapping software and the mainframe computer network. Managing the growth and improvement of the COMPSTAT process is challenging, especially with regard to technology and software changes. An ongoing assessment of changing technology and its impact has become a routine part of managing the COMPSTAT process (Goldsmith et al.2012:12-13). Interest in new technologies, such as DNA analysis, forensic science analysis and investigative analysis software, to name but a few, has grown dramatically over the past few years (Paulsen, 2004:234).

Crime Information Analysis Centre (CIAC)

According to Louw (2001:4), the Crime Information Analysis Centre (CIAC) in the SAPS are centralised at police stations, under the administrative control of the Station Commissioner. This was confirmed in an interview between the researcher and the Station Commissioner at SAPS Rustenburg.

To the question *“Do you have a CIAC at the Rustenburg Detective Unit?”* the sample responded as follows:

Seventy percent of the responses were “no”, while thirty percent of the responses were “yes”. The “yes” responses by the sample probably refer to the CIAC under the administrative control of the Station Commissioner at Rustenburg. The “no” responses refer to the detective unit. This confusion is due to the present situation of the CIAC. However, the majority of the respondents who stated “no” have cleared this. The researcher who has knowledge of the Rustenburg Detective Unit, concurs with the “no” respondents.

According to Director Pretorius (2006), it was revealed that the CIAC at the police station is responsible for the processing of all geographic crime information products, while the Forensic Science Laboratory (FSL) and the Criminal Record Centre (CRC) process all scientific crime information products for the detectives at Rustenburg. The role of the CIAC, the FSL and the CRC is to assist the detectives in solving the cases under investigation. The detective unit has a Crime Information Manager (CIM) who coordinates the requests of detectives for the CIAC and the scientific analysis institutions. It is expected of the detectives to record the utilisation of all crime information products received for investigation purposes, in the investigation diary of the relevant case docket.

The case study done by the researcher shows that in sixty percent of the case dockets, fingerprints were processed by fingerprint experts to assist detectives in the investigation of their cases. There are records of these reports in the case dockets.

To the question “*Who processes your crime information products for the investigation of crime?*” the sample responded as follows:

- investigating officer or LCRC (30% of the respondents);
- CIAC, CIG, Organised Crime Unit (OCU), Criminal Record Centre (CRC) (20% of the respondents);
- experts (20% of the respondents);
- FSL (17% of the respondents);
- CIM (7% of the respondents);
- exhibits are secured at crime scene for evidence (3% of the respondents); and
- do not understand (3% of the respondents).

The majority of the respondents indicated that they are assisted by other specialised components. It is clear from the responses that they do not have a crime information analysis capacity at the detective unit in Rustenburg.

To the question “*What is your understanding of the concept ‘processing of crime information products for the investigation of crime?’*” the sample responded as follows:

- CIAC, CAS, etc. is used to process investigation analysis products (27% of the respondents);
- this is when you send blood samples for forensics (17% of the respondents);
- compiling and dispatching of evidential material to relevant institutions for examination (13% of the respondents);
- analysing and comparing evidence with those of samples taken from suspect (13% of the respondents);
- fingerprints lifted from scene and suspect can be identified (7% of the respondents);
- no response (7% of the respondents);
- LCRC collects all the material (3% of the respondents);
- making sure there is no breakdown of evidence (3% of the respondents);
- guide to assist in the arrest and linking of suspect (3% of the respondents);
- it is different resources used in the investigation of crime (3% of the respondents); and
- do not understand (3% of the respondents).

It is clear from the responses that specialised components process crime information products for use by detectives, e.g. CIAC, FSL, CRC etc. The responses also indicate lack of knowledge on processing. According to the responses in the interviews, 24 of the 30 respondents interviewed underwent training in the processing and utilisation of crime information. It is important that the trained investigators become practically involved in processing at their local detective environments, to improve their knowledge and skills in information management and crime analysis.

PROBLEMS EXPERIENCED BY DETECTIVES IN THE PROCESSING OF CRIME INFORMATION

Absence of an “information culture” in the police underlies the problems affecting crime analysis, particularly how crime information is processed at station level. The research also revealed that sources of human error included insufficient training and inadequate resources and computer support at station level (Louw, 2001:4).

To the question “*What problems do you experience when using manual techniques in the processing of crime information products?*” the sample responded as follows:

- information is not always available (20% of the respondents);
- no problems experienced (17% of the respondents);
- long planning without reacting (10% of the respondents);
- do not know how to use techniques (10% of the respondents);
- don't use it (7% of the respondents);
- information and manpower not sufficient to do follow-up (7% of the respondents);
- no response (7% of the respondents);
- shortage of resources (3% of the respondents);
- time-consuming (3% of the respondents);
- problems in CIAC (3% of the respondents);
- don't know people committing crime (3% of the respondents);
- units not working hand in hand with each other (3% of the respondents);
- difficult to compare when using manual techniques (3% of the respondents); and
- lack of knowledge (3% of the respondents).

The responses indicate that there is inadequate information available, insufficient training, inadequate resources and no support for detectives to do manual processing of crime information.

To the question “*What problems do you experience when using computer analysis techniques in the processing of crime information products?*” The sample responded as follows:

- lack of training in the processing of computer products (27% of the respondents);
- information not captured correctly on the system (17% of the respondents);
- no access to computers due to shortage of computers (17% of the respondents);
- no response (13% of the respondents);
- too many different systems - no access to all the systems (10% of the respondents);
- computers off-line receive information late (10% of the respondents);
- people are not always available at CIAC to assist investigators (3% of the respondents); and
- no problems experienced (3% of the respondents).

The responses indicate that there are data integrity problems, insufficient training, inadequate resources and computer support for detectives to do computerised processing.

UTILISATION OF CRIME INFORMATION

Once the processing of the crime information has been completed, and a comprehensive report has been prepared, it is time to disseminate the information for utilisation by all who need it. The utilisation of crime information products for the investigation of crime will require one to first survey the scenario and then determine a course of action (Vellani & Nahoun, 2001:3).

According to Block et al. (1995:4), with a thorough understanding of the crime problem, analysts, together with investigators, can develop specific crime information products to help resolve it. Such tailored responses often involve creative policing approaches that incorporate community members, outside agencies and private businesses. For effective strategies to be identified and implemented, it is necessary for the police agency to have an organisational command and reward structure that enables problem-oriented policing efforts at line functionary level.

Crime Information products

Geographically coded information from police records can be used to detect crime trends and patterns, confirm the presence of people within geographic areas and identify areas for patrol unit concentration (Block et al., 1995:69).

Goldsmith et al. (2000:5) state that crime information products can be used for strategic and tactical purposes. Strategic crime information products usually involve the collection and study of information covering a period of several years. They are generally more research-oriented, involving inferential and multivariate statistics; they include crime trend forecasts, resource allocation and situational analysis. Tactical crime information products involve pattern detection, linkage analysis for suspect-crime correlations, target profiling and offender movement patterns. The main difference is the timeliness of the crime information data.

When suspects become targets of investigation, it is imperative for the tactical crime analyst to consider all possible information on the suspect. Any additional information collected can only increase the accuracy of the calculations. Tactical crime analysts will try to anticipate where the suspect will travel, and when he or she is likely to strike again (Reuland, 1997:30).

According to Block et al. (1995:86-88), while the specific approaches are best determined by the police investigators familiar with the case in question, some examples of utilisation tactics used in the past include:

- **Suspect prioritisation:** where a lengthy list of suspects is developed, a geographic profile in conjunction with the criminal offender profile can help prioritise individuals for follow-up investigation work;
- **Patrol saturation:** areas that have been determined to be most probably associated with the offender can be used as a basis for directed or saturation police patrolling efforts;
- **Police information systems:** additional investigative leads may be obtained from the information contained in various computerised police record systems;

- **Outside agency database:** data banks are often geographically based - the information from parole and probation officers, mental institutions, social services and similar agencies located in the most probable areas, can also prove to be of value; and
- **Postal code prioritisation:** if suspect offender description of vehicle information exists, prioritised postal codes can be used to conduct effective off-line computer searches of registered vehicle or driver's licence files contained in provincial or state motor vehicle department records.

According to Peterson (1994:29-59), Goldsmith et al. (2000:6), Hirschfield and Bowers, (2001:4-6) and Cope, as quoted by Alison (2005:94-95), detectives investigating crime commonly use the following crime information products:

- **Case docket analysis:** is the overall study of investigation dockets to provide recommendations for its successful completion.
- **Activity flow charts:** are used to explain the paper trail in complex investigations, such as money laundering, commercial fraud, etc.
- **Tables:** all data is placed in tabular format to ascertain any commonalities or patterns. In a series of armed robberies, for example, the factors may include: time of day, location, type of establishment robbed, number of perpetrators, use of weapons, language spoken, manner of dress of perpetrators, and the type of financial instruments taken.
- **Matrices:** are used in analysis to organise data in such a manner that it can be compared to similar data. The triangular matrix is commonly used as an association analysis matrix - for example, with names of crimes on one side and the names of places where the crimes occur on the top side, thus connecting at a triangular point, indicating a connection or commonality.
- **Collection plan:** is a preliminary step towards completing a strategic assessment, which shows what needs to be collected, how it is going to be collected, and by what date.
- **Criminal profile:** is the product of criminal investigation analysis in which indicators of behaviour and activity are used to create models. A profile is created by gathering all possible information on a type of behaviour or occurrence and then analysing and comparing that behaviour to cases or incidents on hand.
- **Assessments:** are a product of the strategic analysis process. They are written reports, which can include the results of surveys, independent research, information gathered from independent case dockets, and data received from other law enforcement sources.
- **Analytical briefings:** are oral presentations of findings or products based on the data analysed.
- **Pin maps:** depict the location of offences, victims and, occasionally, offenders. They can provide information concerning the location of crime hot spots or high levels of reported crimes.

- **Crime analysis:** traditional crime analysis includes both the breaking down of criminal incidents into their composite parts (factors) to determine patterns and similarities, which may lead to the apprehension of the perpetrator(s) and also the statistical analysis of crimes to forecast future crimes. Information on a series of crimes, which have been committed, is used to complete a crime analysis. This information may include victim data, suspect data, dates, times and location of crimes, physical evidence, weapons used and the benefits of the crimes.
- **Linkage analysis:** correlates a suspect to one or more incidents. It can narrow search areas by identifying known criminals or other suspects who reside within a certain distance from incident locations. The objective of linkage analysis is the apprehension of suspects and case clearance.
- **Association analysis:** depicts the relationships among people, groups, businesses or other entities in a way that provides the investigator with information on the nature of the group and the manner in which the group interacts.
- **Criminal investigative analysis:** entails the use of components of a crime and/or the physical and psychological attributes of a criminal, to ascertain the identity of the criminal. The FBI uses this technique in the investigation of homicide and sexually motivated crimes. Some analysts refer to it as profiling. In fact, a profile of a criminal is a product developed because of the criminal analysis process.
- **Statistical analysis:** is a review of numerical data to summarise it and to draw conclusions about its meaning.
- **Pie charts:** are used to give a graphic depiction of the parts of a whole; the pie equals the whole of something and the slices equal smaller parts. They are applied by law enforcement to show the occurrences of particular crimes in relation to the overall crime rate or the relative amounts/percentages of income from illegal sources. A bar chart is a graphic depiction of a certain activity in relation to or in comparison with another factor such as time, cost or another occurrence - both of which can generally be measured in numbers. It can be used in conjunction with a number of other analytical techniques.
- **Composite tables:** all data is placed in tabular format to ascertain any commonalities or patterns. In a series of armed robberies, for example, factors may include: time of day, location, type of establishment robbed, number of perpetrators, use of weapons, language spoken, manner of dress of perpetrators, and the type of financial instruments taken. The information known about each of the armed robberies committed could then be put in tabular form. The table would then be reviewed for possible patterns, commonalities and differences. Conclusions about the persons responsible for the robberies might then be drawn.
- **Automated mapping:** automated pin- mapping, hot spot analysis and radial analysis are some of the most extensively used crime information products. They can be used to identify the locations of high concentration of crimes, known as hot spots. An investigator may use intelligence and modus operandi data to identify that the same offender is likely to be responsible for a series of incidents.

- **Geographic flow mapping:** is a simple graphic depiction of a specific region, used to show some activity or occurrence related to criminal activity. Information gleaned from a map can relate to territories covered by a crime group, or to sources and routes of goods or services being transported by crime groups.
- **Target profiling:** identifies locations that may have an unusually high likelihood of victimisation within an active pattern area. Within a large geographic area, offenders tend to target certain types of locations rather than others, especially for crimes influenced by the location of commercial or service-oriented activity, such as convenience stores or banks.
- **Offender movement pattern analysis:** ties at least two or more points to one or more criminal incidents. One example is the theft location and recovery site of a stolen motor vehicle. Connecting the two locations - theft and recovery - may help identify the roads used by an offender after stealing an automobile. Similarly, relating an offender's last known residence to an arrest location, such as an open air drug market, can identify roads used by dealers to transport drugs.
- **Forecasting:** is a process which predicts the future on the basis of past trends, current trends, and/or future speculations. Within the field of analysis, both numeric and descriptive forecasting are done. Numeric forecasting is numerically used, and generally rests on past and current numbers of occurrences. Descriptive forecasting takes both quantitative and descriptive trend data to predict the future. Forecasting is used both in crime analysis and strategic analysis.

The researcher's experience and his interview with the Station Commissioner at SAPS Rustenburg, has shown that the South African Police Service has the capability to produce the above products at national and provincial level – and, to a limited extent, at station level. The latter is due to a shortage of investigation analysts at station level and the lack of knowledge of such products by investigators, who do not task crime analysts to provide them with specific products to support them in the investigation of their cases.

Dissemination of crime information products

Dissemination relates to the release of a crime information product to a client, under certain conditions and protocols, usually based on the security classification of the information and the security clearance of the client (Peterson, 1994: 271). Jordaan (2003a: 59) refers to dissemination as vital and describes it as encompassing information that was gathered and processed, which must be packaged and delivered to the clients who can use it. Dissemination of the crime information product is the first step in the utilisation stage. Dissemination can be carried out in several different ways, namely, by attending briefings and strategy sessions, presenting verbal reports, providing written reports, having face-to-face contact with detectives whenever the need arises, and public information systems - written and electronic media (Reuland, 1997: 35).

The primary role of the crime analyst in dissemination is to support in the investigation of crime. It is the duty of the analyst to monitor reported cases and to inform investigators of all linkages. In a similar way, the investigator may request analysts for listings of possible incidents where an arrestee may be involved. Analysts can also assist investigators with suspect and victim profiles (Reuland, 1997: 28-29).

Feedback on the crime information products

The last phase of the utilisation stage is feedback. Analysts should not go blindly forward from day to day, without knowing which output products and formats (written reports, charts, graphs, overheads, computer-generated presentations and maps) work and which do not. Analysts spend a great deal of time preparing crime information products for the investigation of crime and must know how the end users plan to use the final product and how useful it is for them. Additionally, if the end users view the analysts' output as non-responsive to a request, they may not make additional requests. Either scenario wastes effort and compromises efficiency. To obtain feedback, analysts should routinely include a survey form with the prepared analysis report (Reuland, 1997:36-37).

To the question **“Do you give feedback to the analyst on the utilisation of the crime information product?”** the sample responded as follows:

- Yes (60% of the respondents); and
- No (40% of the respondents).

None of the case dockets gave any visible indication that feedback was given to analysts on the utilisation of crime information products.

To the question **“How is feedback given to analysts?”**, the sample responded as follows:

- completing feedback forms to Forensics and the CRC (27% of the respondents);
- letters and meetings (27% of the respondents);
- verbally (20% of the respondents);
- writing (12% of the respondents);
- through commanders (7% of the respondents); and
- CIAC, phone or send a progress report (7% of the respondents).

None of the case dockets gave any visible indication that feedback was given to analysts on the utilisation of crime information products.

PROBLEMS EXPERIENCED BY DETECTIVES IN THE UTILISATION OF CRIME INFORMATION PRODUCTS

There have been a few visible problems with the misuse of crime information. Allegations that certain agencies had improperly disseminated information on non-crime-related persons and organisations, led to strong public and media criticism. In hindsight, it is apparent that most of these problems were the result of poor information management and could have been avoided altogether had the units received closer supervision and adhered to appropriate guidelines (Police Chief, 1997:46).

Paulsen (2004:242) declares that the current means of crime information dissemination - that of reading out local crime problems at meetings - is inadequate, and raises the hope of providing officers with crime maps, together with reports, so that they can strategise to monitor their own performance to improve the crime situation.

Task team operations - those that have been formed to investigate a specific series of major crimes - usually collect and process crime information in some form of computer system. Often, these operations suffer from information overload and can benefit from the prioritisation of the information for utilisation by other investigators (Block et al., 1995:88).

To the question “**What problems do you experience in the utilisation of crime information products in the investigation of your cases?**” the sample responded as follows:

- CIAC produces old, outdated crime information products which cannot be used (30% of the respondents);
- none (23% of the respondents);
- crime information products are not easily available (13% of the respondents);
- detectives carry too many dockets to focus on crime information follow-ups (7% of the respondents);
- no response (7% of the respondents);
- do not use them (3% of the respondents);
- no access to seniors to address problems (3% of the respondents);
- forensic analysts take a long time to give feedback in rape and murder cases (3% of the respondents);
- no sharing of ideas on crime (3% of the respondents);
- incorrect information products are provided to investigators, e.g. wanted suspects are still shown as wanted on the list, when they have already been arrested and sent to prison (3% of the respondents); and
- not sure (3% of the respondents).

The responses indicate that there is a need for training, on a continuous basis of all personnel, inclusive of support and functional personnel involved in the investigation and crime analysis environment. According to the respondents, the detective service and the CIAC seem to have certain shortcomings, which also need to be addressed.

FINDINGS AND RECOMMENDATIONS

Primary findings

The following **primary findings** are based on the research questions:

- Processing is an act of analysing raw crime information into timely and actionable crime investigation products.
- Whenever computers are off-line, crime information is received late for processing.
- The Crime Information Analysis Centre at the police station produces old, outdated crime information products which cannot be used by detectives in the investigation of crime. In most cases the products are not reliable, relevant or timely.
- The detectives do not have their own Crime Information Analysis capability at the Rustenburg Detective Unit.
- Informers do not always provide correct information to investigators.
- Collected information is not captured correctly on the computer system to do computer analysis.
- Officials are careless in taking down reports, and the slow turnaround time between data collection and data entry into systems, creates data integrity problems.

- Reliable, valid and timely crime information is not always available for analysis.
- Since many other agencies are legally mandated to collect crime information in the South African context, this information is not integrated into the SAPS computer system for use by investigation analysts
- None of the detectives utilise crime information products to assist them in the investigation of their cases;
- Disseminated crime information products are not recorded at CIAC or in the investigation diaries of the case docket.
- Crime information products are not easily available for utilisation by investigators.
- Not all detectives know how to utilise crime information that is processed to assist in the investigation of crime.
- Investigators do not properly task and discuss crime information products with analysts, as they are not aware of the hardware and software available for analysis.
- There is a lack of knowledge on the different types of crime information products, dissemination and feedback on the utilisation of crime information products.

Secondary findings

The researcher discovered the following serendipitous trends during the research process:

Training: Although 80% of the respondents indicated that they attended training in the processing and utilisation of crime information, the majority of the respondents mentioned that training was not according to their specific needs. In other words, the training was of very little value in relation to an adequate understanding of processing and utilisation of crime information products.

Fear of criminals: According to the majority of the respondents:

- Witnesses are reluctant to assist the police with crime information or to make statements in criminal cases, because of fear of criminals; and
- Detectives find it difficult to obtain crime information on criminals and syndicates, because of intimidation and fear.

Resource constraints: According to the majority of the respondents:

- There is a shortage of data typists and administration officials for information capturing on the computer systems.
- There are resource constraints when processing classified crime information, as they are costly, require high levels of commitment and skill, and, most importantly, require visionary and innovative managers.
- Detectives do not all have access to software and computers to do computer analysis, due to a shortage of computers at the detective unit.

RECOMMENDATIONS

Based on the primary and secondary research findings, the following recommendations are made:

- Source reports used to collect crime information should be reviewed by supervisors and analysts to ensure that the information is relevant, reliable, accurate, and timely.
- Agreements should be reached to ensure that specific information is provided regularly in a useable format by other departments.
- From the responses of the research participants, it is evident that an environment has to be created for members to be trained according to their competency gaps.
- Detective line managers should transfer skills and provide guidance for the processing and utilisation of crime information during inspection of case dockets in order to enhance detective performance.
- Psychological Services should become involved in team building and life skills survival training to address the fear for criminals.
- Investigators should work with the Community Police Forums (CPF's) to address community reluctance to assist the police with quality information.
- A resource audit should be carried out to determine personnel and physical resource needs for the purpose of effective and efficient processing of crime information.

CONCLUSION

Processing the information needed by investigating officers can also pose problems, especially in terms of the investigating officers' needs, the level of training of the analyst and the technical support (in terms of the operating systems, hardware and software). The final impact of the analysis lies in the monitoring and evaluation of the crime information product. Fundamentally, the South African Police Service needs to create the right environment at station level, for analysis to flourish, where information management and crime analysis processes are valued and understood and to create a desire to use business intelligence, rather than intuitive or experiential information in decision-making. The police must be ready to respond to the outcomes of analysis, and recognise that this may require a different approach to the allocation of police resources and management of planning and strategic development. The presence of an information culture, enhanced training levels of personnel and the improved quality of the hardware/software technology used by data typists and analysts, would provide integrity to the processing and utilisation of crime information as a way to improve the detection rates of detectives.

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