Characteristics of effective SIOs: a content analysis for management in police investigations

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Abstract: The Senior Investigating Officer (SIO) is in charge of a criminal investigation in law enforcement. As the leader of a crime solving project, it has been argued that the SIO need investigative ability, crime knowledge as well as management skills. An empirical study in Norway was conducted, indicating that management skills are more important than crime knowledge and investigative ability. Furthermore, among management roles, the motivating role of personnel leader was found to be most important for effective SIOs.

Keywords: SIO; senior investigating officer; law enforcement; crime; leadership; roles; skills; management; enterprise development.

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1 Introduction

Knowledge organisation has emerged as the dominant structure of both public and private organisations in the transition from an industrial to a knowledge society (Lassen et al., 2006). The knowledge organisation is very different from the bureaucratic organisation. It is often argued that transformational and charismatic leadership is needed in such organisations (e.g. Kark and Dijk, 2007). High level of individual and organisational performance is associated with effective management. In this paper, the knowledge organisation of police investigations is our case to study characteristics of effective managers. This paper applies enterprise management concepts to the police field.

The Senior Investigating Officer (SIO) is in charge of criminal investigation in law enforcement. An investigation is an effective search for material to bring an offender to justice. Knowledge and skills are required to conduct an effective investigation. Investigative knowledge enables investigators to determine if a given set of circumstances amounts to a criminal offence, to identify the types of material that may have been generated during the commission of an offence and where this material may be found. It also ensures that investigations are carried out in a manner, which complies with the rules of evidence, thereby increasing the likelihood that the material gathered will be admitted as evidence.

Police investigation is an information-rich (Fahsing, 2002; Puonti, 2004) and knowledge-intensive practice (Chen et al., 2002). Its success depends on turning information into evidence (Dean, 2000; Dean et al., 2006), as information and intelligence are raw material for evidence. However, the process of turning information into evidence is neither simple nor straightforward. The raw information that is gathered through the investigative process is often required to be transformed into usable knowledge before its value as potential evidence can be realised (Hughes and Jackson, 2004). Hence, in an investigative context, knowledge acts as an intervening variable in this transformative process of converting information via knowledge into evidence.

The SIO plays a pivotal role within all serious crime investigations. Concerns have been expressed, however, that there is a shortage of investigators with the appropriate qualities to perform this role effectively.

The performance of police investigation units and SIOs is subject to considerable variability in terms of successes and failures (Waddington, 2004). One potential explanation for such variation is the extent to which SIOs in the unit have characteristics associated with effective management of police investigations (Jackson and Wade, 2005; Kelley, 2005). Hence, this paper is concerned with the following research question: *What characteristics do police investigators associate with effective SIOs?*

This research question is important, as police investigators are knowledge workers who use their skills, knowledge and creativity to solve crimes. Based on open-ended

questions to detectives in Norway, this paper attempts to identify and classify important characteristics of SIOs.

2   Police investigations

Investigation is the police activity concerned with

1   the apprehension of criminals by gathering of evidence leading to their arrest

2   the collection and presentation of evidence and testimony for the purpose of obtaining convictions (Thibault et al., 1998).

According to Smith and Flanagan (2000), the process begins with an initial crime scene assessment where sources of potential evidence are identified. The information derived from the process then has to be evaluated in order to gauge its relevance to the investigation. During the next stage, the information is interpreted to develop inferences and initial hypotheses. The SIO can then manage the development of this material into appropriate and feasible lines of enquiry. The SIO will have to prioritise actions, and to identify any additional information that may be required to test that scenario. As more information is collected, this is then fed back into the process until the objectives of the investigation are achieved. Providing a suspect is identified and charged, the investigation then enters the post-charge stage, where case papers are compiled for the prosecution. Subsequently, the court process will begin.

Knowledge assists police investigators to make effective and accountable decisions during an investigation. It enables them to locate, gather and use the maximum amount of material generated by the commission of an offence to identify and bring offenders to justice. Cetrex (2005) has outlined the knowledge that investigators need to conduct competent criminal investigation. According to the outline, there are four areas of investigative knowledge required to conduct an effective investigation: the legal framework, characteristics of crime, national and local force policies and investigative skills.

Police investigation units represent a knowledge-intensive and time-critical environment (Chen et al., 2002; Hughes and Jackson, 2004). Successful police investigations are dependent on efficient and effective knowledge sharing. Furthermore, Lahneman (2004) argues that successful knowledge management in law enforcement depends on developing an organisational culture that facilitates and rewards knowledge sharing.

The performance of the police in the area of investigation is continually under scrutiny by the government, the criminal justice system and the media. There is widespread recognition within the police service that there is a need to improve the professionalism of the investigative response. In the UK, the professionalising investigation program was introduced in 2005. The purpose is to significantly improve the personal, functional and organisational ability of the service to investigate crime of any category. In performance terms the aim of the program is to deliver (Home Office, 2005b):

•   improved rates of crime detection

•   improvement in the quality of case files

•   a reduction in the number of failed trails

- improved levels of judicial disposal

- increased public confidence in the police service.

The long-term outcomes of the program shall deliver the professional development of staff against robust national occupational standards by developing police staff that is better qualified and thereby better skilled in investigation, more focused training for investigation and minimal accreditation bureaucracy.

3   Senior investigating officer

In all complex or serious cases, on which a team of investigators is deployed, the SIO sets out what the main lines of enquiry are, and record his or her decisions on those lines of enquiry as the investigation progresses. For example, the SIO directs which policy decisions are recorded in the HOLMES system in the UK. HOLMES is an information system for criminal investigations in British Police. The 'major incident policy' document is maintained whenever a 'major incident room' using HOLMES system is in operation (Home Office, 2005a). While SIO is a term typically used to define a senior officer in the UK, we use the term internationally to define a senior officer with management responsibilities in police investigations.

The consequences of a shortage of investigators with the appropriate qualities to perform the SIO effectively could be severe. Not only might it threaten the effective workings of the judicial process, it can also waste resources, undermine integrity and reduce public confidence in the police service. The principal aim of the research conducted by Smith and Flanagan (2000) was to establish what skills, abilities and personal characteristics an SIO ought to possess to be effective in the investigation of low-volume serious crimes (stranger rape, murder and abduction). Interviews were conducted with 40 officers from 10 forces in the UK. These were selected to reflect a range of roles and experience with Criminal Investigation Departments (CID). A total of 10 of these officers were nominated by their peers as examples of particularly effective SIOs.

Although the debate around SIO competencies has often polarised into arguments for and against specialist or generalist skills, the research highlighted the fact that the role of an SIO is extremely complex and the skills required wide-ranging. By applying a variety of analytical techniques, a total of 22 core skills were identified for an SIO to perform effectively in the role. The 22 skills were organised into three clusters:

- *Investigative ability*: this includes the skills associated with the assimilation and assessment of incoming information into an enquiry and the process by which lines of enquiry are generated and prioritised.

- *Knowledge levels*: this relates to the different types of underpinning knowledge an SIO should possess.

- *Management skills*: these encompass a broad range of skill types that were further subdivided between people management, general management and investigative management.

The research revealed that the effective SIO is dependent upon a combination of management skill, investigative ability and relevant knowledge across the entire investigative process, from initial crime scene assessment through to post-charge case management.

Ideally, an SIO should possess a high level of competency across each of the three clusters. In reality this is not always possible and, when this happens, there is an increased risk that the investigation will be inefficient or, in the worst case, will fail.

For example, an SIO from a predominantly non-CID background will have little experience within an investigative context. Hence there is an increased risk that an investigation will fail due to suboptimal investigative decisions being made. Similarly, an SIO from a predominantly CID background may have less general management experience. Hence there may be an increased risk of failure from suboptimal management decisions.

The research suggested that some – but not all – deficiencies in an SIO's skill portfolio can be compensated for by drawing on the skills and abilities of more junior officers within his/her investigative team. However, it was recognised that this was still a high-risk and short-term strategy.

4   Management roles

In police investigations the manager of an investigative unit is generally referred to as a SIO. This is a middle management type position in the command and control hierarchy of a police organisation. Such a middle ranking position carries much responsibility for making sure an investigation stays on track, within budget and produces good results in terms of evidence and prosecution. Such responsibility places strong leadership demands on an SIO. Hence, Mintzberg's (1994) research on management roles is relevant and provides a strong basis on which to appreciate and understand the interrelated activities of a manager.

A manager's job consists of several parallel roles. At a certain point in time, the manager may perceive one role as more important than the others. Mintzberg (1994) found that it is a peculiarity of the management literature that its best-known writers all seem to emphasise one particular part of the manager's job to the exclusion of the others. Together they cover all the parts, but even that may not describe the whole task of managing.

Mintzberg's role typology is frequently used in studies of managerial work. When such role terminology is applied to a police investigation context, some modification is required as an SIO will not necessarily be responsible for all aspects of each role. Furthermore, business management terminology does not fit so well in a policing and law enforcement domain. Hence, some of the role labels have been changed to provide a more accurate fit with police terminology.

These six police manager roles, adapted from Gottschalk (2007), are briefly described below along with the police-specific role label noted in brackets.

- *Personnel leader (motivating role)*: as a leader, the manager is responsible for supervising, hiring, training, organising, coordinating and motivating a cadre of personnel to achieve the goals of the organisation. This role is mainly internal to the police investigation unit. As stated previously, an SIO would not generally be responsible for hiring a particular individual in a business sense, but would have a say in which particular police investigator might join his/her team for a particular investigation. However, the main thrust of this role for an SIO is that of motivating his/her staff and keeping such motivation up especially in a difficult and protracted investigation.

- *Resource allocator (resourcing role)*: the manager must decide how to allocate human, financial and information resources to the different tasks of the investigation. This role emphasises planning, organising, coordinating and controlling tasks and is mainly internal to the police investigation unit. Often, an SIO has to be an advocate in this regard to get the necessary resources for his/her team to be able to conduct the investigation efficiently and effectively.

- *Spokesperson (networking role)*: as a spokesperson, the manager extends organisational contacts to areas outside his or her own jurisdiction. This role emphasises promoting acceptance of the unit and the unit's work within the organisation of which they are part. For the manager it means contact with the rest of the organisation. Frequently, he or she must move across traditional departmental boundaries and become involved in personnel, organisational and financial matters. Hence, with regard to an SIO this key role is one of networking within the police organisation.

- *Entrepreneur (problem-solving role)*: the manager identifies the police needs and develops solutions that change situations. A major responsibility of the manager is to ensure that rapidly evolving investigation methods are understood, planned, implemented and strategically exploited in the organisation. Such a role is more akin to being a problem-solver than an entrepreneur in a police setting.

- *Liaison (liaising role)*: in this role, the manager communicates with the external environment, and it includes exchanging information with government agencies, private businesses and the media. This is an active, external role. This is a very similar role description for an SIO who has to liaise with a wide range of people throughout an investigation who are external to the police service like the public prosecutors office but which are part of the overall criminal justice system.

- *Monitor (gatekeeping role)*: this role emphasises scanning of the external environment to keep up with relevant changes, such as politics and economics. The manager identifies new ideas from sources outside his or her organisation. To accomplish this task, the manager uses many resources, including vendor contacts, professional relationships and a network of personal contacts. While an SIO clearly monitors the progress or otherwise of an investigation, the role description here is more like a gatekeeping role. In that it is not so much external politics or economics, which an SIO has to contend with but rather making sure the media and other outside forces do not disrupt the progress on an investigation. Hence, in that sense this is a gatekeeping role to protect the investigative team and undue external pressure.

These six police manager roles are illustrated in Figure 1. As can be seen the motivating and resourcing roles are internal to the investigation team for the SIO. The networking and problem-solving roles are directed towards the police organisation, and the liaising and gatekeeping roles are linked to the external environment for the SIO.

We would expect that these roles are not equally important for a SIO in relation to creating investigative success. Moreover, some roles may be more influential in terms of stimulating knowledge sharing (El-Korany, 2007). For example, adopting a motivating role may be more important for an SIO to engage in within the investigative team, but

not as important in relation to the wider police organisation. There is some research that suggests that the networking role (or spokesperson) is the most important for dealing with the larger organisation when knowledge is communicated to stakeholders (Lahneman, 2004).

Figure 1 Police manager roles in investigation
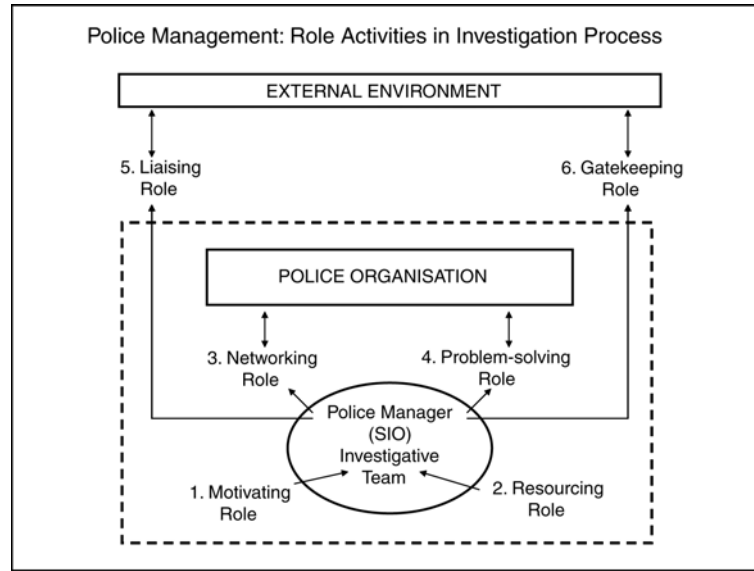
Source: Adapted by Dean et al. (2006) from Karisen and Gottschalk (2002).

5 Research methodology

A survey instrument was applied in this research, where respondents filled in a space. While the survey instrument had many questions, we concentrate in this paper on one single open-ended question. In the open electronic space, respondents could write five characteristics in their own wording. To classify these responses, content analysis was needed. According to Riffe and Freitag (1997), seven features of content analysis distinguish poor studies from excellent studies. Firstly, an explicit theoretical framework is needed. In this research, the theoretical framework of management roles as developed by Mintzberg (1994) is applied. Secondly, hypotheses or research questions are needed. In this research, the research question 'what' is concerned with descriptions of characteristics. Thirdly, other research methods should also be applied. In this research, a survey is supplemented with content analysis. Fourthly, extra-media data should be incorporated. In this research, results from another investigation survey were incorporated (Glomseth et al., 2007). Fifthly, intercoder reliability should be reported. In this research, the characteristics content construct was coded by two researchers independently. Sixthly, reliability based on random sample of coded content was not relevant in this research, as there is a complete set of responses. Finally, presentations of only descriptive statistics should be avoided. In this research, two independent researchers coded characteristics by respondents and interpretations are presented in this paper.

Table 1 Characteristics of effective SIOs according to respondents (5 characteristics by 71 respondents)

Objectivity	Cooperative skills	Authority when needed	Keeping overview	Organisational skills
Creative	Investigative knowledge	Cooperative skills	Organisational skills	Motivational skills
Creative	Motivational skills	Listening skills	Participating in work	Managing the case
Curious	Detailed	Knowledge of law	Not giving up	Human knowledge
Motivational skills	Inspirational	Professional	Patient	
Open mind	Communicative skills	Empowering skills	Exploring personnel	Analytic skills
Communicative skills	Feedback skills	Identifying connections	Investigative knowledge	Resisting pressure
Experience	Broad competence	Action oriented	Understanding the case	
Communicator	Good listener	Ability to motivate	Avoiding details	Creating ideas
Investigative insights	Integrity	Ability to listen	Judgement	Decision maker
Analytic skills	Creative	Systematic	Showing empathy	Good leader
Objective	Sensitive	Analytic	Structured	Creative
Listening to others	Experienced in the field	Motivational	Good mood	Make decisions
Ability to lead	Find good solutions	Value employees	Cooperation	Good mood every day
Clever at organising	Clear speech	Cooperative	Creative	Lots of experience
Good organised	Speed	Knowledgeable	Good memory	Divide work
Good overview	Delegation skills	Analytic ability	Team leadership	Motivational skills
Stimulate officers	Delegate	Humour	Structured	
Ability to communicate	Positive attitude	Flexibility	Investigative knowledge	Involvement
Structure	Goal oriented	Self-confidence	Engaged	Creative
Motivational	Motivator	Analytic	Professional skills	Systematic
Seeing the whole picture	Knowledge of the cases	Good at delegating	Good feedback	Does care
Ability to supervise	Organised	Ability to delegate	Investigative knowledge	Open minded
Openness	Thorough	Motivating	Results oriented	Fair
Systematic		Honest	Calm	Empathetic

Table 1   Characteristics of effective SIOs according to respondents (5 characteristics by 71 respondents) (continued)

Objectivity	Good at listening	Good mood	Ability to prioritise	Having good overview
Motivational	Systematic	Good communication	Human	Balanced
Concrete	Caring	Thorough	Open to proposals	Experience
Patient	Seeking options	Listening	Motivational	Giving feedback
Results oriented	Not afraid	Communicative skills	Stimulate employees	Action oriented
Leadership skills	Offensive	Active	Curious	Fair
Cooperative skills	Structured	Creative	Listening	Engaged
Investigative insights	Ability to receive	Ability to systematise	Ability to delegate	Ability to motivate
Structured	Investigative knowledge	Fair	Positive attitude	Ability to have oversight
Understanding people	Honesty	Offensive	High moral	Objective
Creative	Encouraging	Open	Knowledgeable	Overview
Cooperative skills	Sees person potential	Ability to listen	Tactical	Open to new ideas
Knowledgeable of law	Delegating	Being creative	Make decisions	Motivate officers
Ability to see all	Ability to inspire	Ability to listen	Ability to implement	Ability to correct
Professional	Decision oriented	Engaged	Motivational	Team leader
Human	Professional	Openness	Honesty	Energy
Investigative insights	Motivational	Includational	Ability to delegate	Goal oriented
Broad experience	Ability to cooperate	Listen to others' opinions	Being explicit	Ability to delegate
Open mind	Good at communicating	Decision minded	Investigative knowledge	Present
Distribute tasks	Thinking creatively	Good monitoring	Good consulting	Thinking new
Having good overview	Give credit and criticism	Good at encouraging	Suggesting solutions	Ability to cut the crap
Mature soul	Investigative level	Good organiser	Communicative skills	Contribute to openness
Communication	Humility	Authority	Self insight	Humour and good mood

Table 1 Characteristics of effective SIOs according to respondents (5 characteristics by 71 respondents) (continued)

Open to proposals	Let others lead	Give feedback	Push progress	Make decisions
Systematic	Analytic	Creative	Determined	Knowledgeable
Good team leader	Stimulating creativity	Having overview	Open minded	Patient
Motivator	Keeping calm	Decision power	Creative	Listening
Objectivity	Listen	Leading	Think new	Cooperation
Professional skills	Thorough	Create team feeling	Ability to motivate	Analytic ability
Motivational	Ability to stimulate	Communicative skills	Including personnel	Systematic
Leadership skills	Investigative skills	Organisational skills	Creative	Supervising skills
Stimulating team	Full of initiatives	Knowledgeable	Involving officers	Clear messages
Listening	Relevant attitude	Objective	Humble	Person oriented
Open	Creative	Innovative	Inspirational	Integrity
Knowing how to motivate	Able to cooperate	Thinking creatively	Being structured	Being effective
Creative	Motivational	Listening	Social	Investigative competent
Integrity	Objective	Cooperative skills	Reliable	Experience
Objective	Motivational	Structured	Competent	Thinking systematically
Investigative strengths	Ability to lead	Having good overview	Being creative	Good to communicate
Knowledge	Experience	Attitude	Patience	Overview
Ability to motivate	Ability to listen	Investigative competence	Identifying limitations	Creativity
Good to communicate	Ability to delegate	Ability to prioritise	Decision power	Ability to cooperate
Ability to motivate	Ability to be critical	Decision making ability	Ability to delegate	Ability to evaluate
Ability to motivate	Having patience	Relevant experience	Being team oriented	Listen to others
Motivator	Listening	Supervising	Create good environment	Let all in the team act
Focus	Cooperative skills	Knowledge	Creativity	Humility

The questionnaire was sent to 325 detectives by e-mail. This sample was considered representative of the countries detectives. With 110 responses returned, this gave a response rate of 34%. However, only 71 detectives filled in the open space for characteristics of effective detectives, thereby reducing the response rate to 22%. Since each detective wrote 5 characteristics each, a total of 355 characteristics were collected, as listed in Table 1.

Two raters were involved in the classification of responses. There was no need to develop key words in this research (Gottschalk, 2001), as respondents provided responses in terms of key words. Acceptable Inter-rater Judgment Reliability (IJR) of 0.94 was achieved. Reliability is an assessment of the degree of consistency between multiple raters of a variable (Hair et al., 1998).

6   Research results

As can be seen in Table 1, most respondents provided five characteristics of effective SIOs as requested. Only three respondents provided four characteristics. A total of 352 characteristics represent our data in this research. Respondents were not asked to prioritise their five characteristics. Therefore, all 352 characteristics are treated as equally important in this research.

Our first analysis was simply to look for words, which were mentioned by several respondents. We find words such as 'creativity', 'communication' and 'cooperation', indicating that the manager of the investigation should contribute with new ideas (creativity), should talk to people (communication) and should work with people (cooperation).

Our second analysis was concerned with person focus versus task focus. It was assumed that SIOs tend to be task focused, while investigators would like them to be more person focused. When classifying all responses in Table 1 along these two categories, we found that 54% of the statements are person focused, while 46% are task focused.

Our third analysis was classification of items in the table according to management areas. We make distinctions between four management areas:

- *Task management*: managing the tasks of the investigation.

- *Person management*: managing the officers involved in the investigation.

- *Administration management*: managing the systems supporting the investigation.

- *Strategy management*: managing the direction of the investigation.

When independent raters applied this classification scheme to the 352 items in Table 1, the following distribution emerged:

- 40% of the characteristics were assigned to *person management*

- 30% of the characteristics were assigned to *task management*

- 18% of the characteristics were assigned to *strategic management*

- 12% of the characteristics were assigned to *administrative management*.

The fourth analysis was concerned with our adoption of Mintzberg's (1994) management roles into motivating role, resourcing role, networking role, problem-solving role, liaising role and gatekeeping role. Although not explicitly asked for, characteristics of effective detectives can be interpreted in terms of their importance to the management roles. Each characteristic might be assigned to one of the roles according to importance of the characteristic in that specific role. This was done in the research, which resulted in the following distribution:

- 38% of the characteristics were assigned to the motivating role of *personnel leader*

- 23% of the characteristics were assigned to the resourcing role of *resource allocator*

- 11% of the characteristics were assigned to the networking role of *spokesperson*

- 19% of the characteristics were assigned to the problem-solving role of *entrepreneur*

- 5% of the characteristics were assigned to the liaising role of *liaison*

- 4% of the characteristics were assigned to the gatekeeping role of *monitor*.

The fifth and final analysis was concerned with the distinction between investigative ability, knowledge levels and management skills, as suggested by Smith and Flanagan (2000). When these three categories were applied to Table 1, we found 38% investigative ability, 9% knowledge and 53% management skills as characteristics of effective SIOs as defined by investigators.

7 Discussion

Survey results indicate that the most important leadership role for SIOs is the motivating role of the personnel leader. In this role, the SIO is responsible for the supervising, hiring, training, organising, coordinating and motivating a cadre of personnel to achieve the goals of the organisation. This role is mainly internal to the police investigation unit. As stated previously, an SIO would not generally be responsible for hiring a particular individual in a business sense, but would have a say in which particular police investigator might join his team for a particular investigation. However, the main thrust of this role for an SIO is that of motivating his/her staff and keeping such motivation up especially in a difficult and protracted investigation.

In different study, Glomseth et al. (2007) asked SIOs how they would rate the importance of each leadership role. Their results are listed in Table 2. SIOs themselves find the problem-solving role most important (5.0), followed by the resourcing role (4.8).

When compared to the current responses from detectives, we find some interesting results. While the SIOs do not find the motivating role particularly important, detectives that are supervised by SIOs find this role most important. Opposite, while SIOs find the problem-solving role most important, detectives do not find this role particularly important.

When combining the results from all five analyses, we find than an effective SIO is characterised by being person focused in person management as a personnel leader with management skills. He or she is focused on available resources (Chakraborty and Sharma, 2007).

Table 2   Measurement of management roles

Management roles in police investigations (independent variables)	Mean
Motivating role: responsible for guiding and follow-up personnel who participate in the investigation	4.7
Resourcing role: making decisions about allocation of resources in the investigation	4.8
Networking role: informing other involved units in the Police about the investigation	4.4
Problem-solving role: identifying opportunities and initiatives in the investigation	5.0
Liaising role: managing information and knowledge about external matters that might be relevant for the investigation	4.6
Gatekeeping role: communicating with the external environment about the progress in the investigation	4.4

Note: Scale: 1 = not important to 7 = very important.
Source: Glomseth et al. (2007).

Two important limitations in the current study have to be addressed. Firstly, the response rate of 22% is low. As there were no follow-ups in the survey administration, and responding to each open-ended question was voluntary, the response rate as such is as expected. However, a bias in responses is not unlikely, limiting the possibility of generalised findings. For example, only detectives with strong opinions about leadership and management may have articulated their views in the survey. Future research designs should strive for higher response rates and include contacting some random non-respondents.

Secondly, the construct 'effective' SIOs is problematic. Implicitly, we argue that there is a significant, positive relationship between detectives' opinions and actual effectiveness, since we only measured what detectives consider to be effective. Also, since effectiveness was not defined in the questionnaire, responding detectives might have emphasised very different interpretations of this construct. Future questionnaire designs should strive to solve such research design problems.

Furthermore, there might be concerns over the question 'What characteristics do police investigators associate with effective SIOs?' because it appears the results have yielded a mixture of skills and characteristics. In future research, this question should be defined and clarified in the questionnaire.

8   Conclusion

This paper makes a contribution to our understandings of effective practice in detective work management. Effective SIOs as evaluated by their subordinates are characterised by being person oriented rather than case oriented. Important skills are motivational skills, communicative skills, listening skills and organisational skills. According to this study, the least important for SIOs is investigation knowledge, when compared to investigative ability and management skills.

The point we have raised regarding SIO (in)competency might appear to be an organisation failure. There is an opportunity for critical debate here after suggesting that it is both critical and difficult to create highly competent SIOs. One could argue that the lack of professional education and training has led to this lack of competency.

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