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Factors influencing cross-border knowledge sharing by police

organisations:

An integration of ten European case studies.

Kamal Birdi^{a1}, Kerry Griffiths^m, Christine Turgoose^a, Victòria Alsina^h, Daniela Andrei^k,
Adriana Băban^k, P. Saskia Bayerl^g, Fabio Bisogni^e, Sofia Chirică^k, Pietro Costanzo^e,
Charlotte Fernández^h, Joël Ficet^c, Mila Gascó^h, Mario Gruschinske^d, Kate Horton^g, Gabriele
Jacobs^g, Theo Jochoms^f, Katerina Krstevska^j, Stojanka Mirceva^j, Christian Mouhanna^c, Ad
van den Oord^b, Cătălina Oțoiu^k, Rade Rajkovcevski^j, Lucia Rațiu^k, Zdenko Reguljiⁱ, Claudia
Rus^k, Susanne Stein-Müller^d, Trpe Stojanovski^j, Nathalie Vallet^b, Mihai Varga^k, Michal Vítⁱ,
Gabriel Vonaș^k

^a*University of Sheffield, Sheffield, United Kingdom*

^b*University of Antwerp, Antwerp, Belgium*

^c*Centre National de la Recherche Scientifique (CNRS), Paris, France*

^d*Fachhochschule der Polizei des Landes Brandenburg (FHPolBB), Oranienburg, Germany*

^e*Fondazione per la Ricerca sulla Migrazione e sulla Integrazione delle Tecnologie (FORMIT), Rome, Italy*

^f*Police Academy of the Netherlands, Apeldoorn, The Netherlands*

^g*Erasmus University Rotterdam, Rotterdam, The Netherlands*

^h*Fundacion ESADE, Barcelona, Spain*

ⁱ*Masaryk University, Brno, Czech Republic*

^j*University St Kliment Ohridski, Bitola, Republic of Macedonia*

^k*Babeș-Bolyai University, Cluj-Napoca, Romania*

^mSheffield Hallam University, Sheffield, United Kingdom

Corresponding and First Author Details

¹ Kamal Birdi

Sheffield University Management School

Sheffield S10 1FL, UK

Tel: +44 (0)114 222 3288

Email: k.birdi@sheffield.ac.uk

Biographical details of corresponding author:

Kamal Birdi is a Senior Lecturer in Occupational Psychology at Sheffield University Management School, UK.

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Factors influencing cross-border knowledge sharing by police organisations: An integration of ten European case studies.

Abstract

The globalisation of crime means there is an increasingly vital need for effective sharing of knowledge by police organisations across international borders. However, identifying the complexities and challenges of this aspect of international collaboration has been relatively neglected in previous research. The research reported in this paper therefore set out to identify the major barriers and facilitators of international knowledge sharing. Research teams in ten European countries produced ten case studies of knowledge sharing across borders, either involving direct cooperation between police forces in different countries or through international agencies such as CEPOL or INTERPOL. The integrative findings showed that the major influences on knowledge sharing could be theoretically categorised in terms of organisational factors (e.g. technological and staff capabilities), inter-organisational factors (e.g. quality of relationships, shared visions and systems), inter-country factors (e.g. bilateral conventions, legislation) and knowledge characteristics (e.g. clarity, legal sensitivity). Practical implications include standardising technology systems across countries, improving inter-organisational trust through exchanges and physical co-working, developing police members' knowledge and skills with regards to collaborative working and creating joint agreements and visions. Research implications highlighted the need to test the findings in non-European contexts and to comparatively focus on specific types of collaboration.

Keywords: knowledge sharing, collaboration, police, international

Introduction

The increasing globalisation of crime has made it imperative for police forces to become more effective at co-operating across international borders (Lemieux, 2010; Yakhlef, Basic & Akerstrom, 2017). This is particularly salient in the context of the European Union (EU). Improved transportation, better information and communication technology systems, easing of travel restrictions across borders, greater world trade and the increasing size of vulnerable populations have led to greater opportunities for committing cross-border crimes such as drug smuggling, people trafficking, terrorism, money laundering and cyberfraud (Balzer, 1996; (European Monitoring Centre for Drugs and Drug Addiction and Europol, 2019; Europol, 2018, 2019; Klosek, 1999; van den Born et al., 2013; van der Laan, 2017). For example, Europol's Serious and Organised Crime Threat Assessment 2017 stated that seven out of ten organised crime groups (OCGs) are typically active in more than three countries and 10% in more than seven countries. There has therefore been an increasing movement towards transnational policing where police organizations in different countries directly work with each other or where international bodies (e.g. Europol, Interpol) co-ordinate operations across borders to build an integrated understanding of security issues such as terrorism, human trafficking or OCGs (Haberfeld, McDonald & Hassell, 2008; Reid, 2013). The Schengen Convention of 1990 and the 1991 Maastricht Treaty are examples of agreements which formally introduced the principles of greater co-operation between police forces and Europol (2017) highlighted a number of multi-nation operations where police organisations have worked together to dismantle international drug smuggling rings and criminal infrastructure platforms. The need for better international co-operation is echoed by the UK's National Crime Agency (2017, p. 10) in their strategic assessment of organised crime: "collaboration with international partners to influence and build capability in priority countries is essential".

A key component of successful co-operation rests in terms of effective knowledge sharing between policing organisations, which can be defined as the exchange between two or more parties of potentially valuable information (Davenport, 1997; Ipe, 2003; Tyagi & Dhar, 2017). Typically, this can be seen in a policing context as criminal intelligence but may also include knowledge of other aspects such as legislation, procedures, or best practice in different countries. However, research in general has shown that sharing knowledge between organisations is more complex than within an organisation and that knowledge flows slower across geographical boundaries compared to within national parameters (Adams, Clough & Fitzgerald, 2018; Tallman and Phene, 2007; van Wijk, Jansen and Lyles, 2008). McEvoy, Ragab and Arisha (2019) also stress the need to research how knowledge management is approached within particular public sector domains since the needs of those domains vary. So what are the specific challenges faced by police organisations in sharing important information across national boundaries and how can they be best overcome?

Literature review and rationale for research questions.

The authors of this paper previously conducted a systematic literature review of the extant literature on knowledge sharing in policing contexts (see Griffiths et al., 2016). We refer readers to that paper for a more exhaustive examination of research in the area but we will pull out and add to several salient issues that arose from the work and drove the new empirical research reported here. The Griffiths et al., (2016) review found relatively little good empirical research had been conducted on the topic and where it had, the predominant focus was on intra-organisational sharing of knowledge regarding criminal intelligence (Griffiths et al., 2016). This has traditionally left a distinct research gap in terms of investigating knowledge sharing between police forces in different countries but research is starting to uncover the complexities of such endeavours. Sheptycki (2007) critically deliberates on how expanding international policing networks face issues of information silos within organizations while also pointing out

the negative implications of the threats to civil liberties resulting from cross-border knowledge sharing of data on individual citizens. Cotter (2017) discusses the desire of police members to share different types of information through personal information networks as opposed to formal digital ones being driven by cultures of secrecy around intelligence and lack of trust. An investigation of cross-border policing collaboration around the Baltic Sea again highlighted how lack of interpersonal trust, language capabilities and a shared vision could hinder collaboration (Yakhlef, Basic & Akerstrom, 2017). Studies such as these are limited in the literature and also in their scope and hence there have consistently been calls for more inter-organisational research (Adams, Clough & Fitzgerald, 2018; Seba, Rowley & Lambert, 2012; Whelan, 2017); indeed, the Griffiths et al., (2016) review of police knowledge sharing concluded 'our understanding of inter-organizational information exchange is still limited and requires further exploration' (p.283). The following sections will provide the justification for the particular research questions addressed in this research study by reviewing the research on the different types of knowledge that can be shared, the ways in which in knowledge is shared and potential barriers and facilitators.

The popular view when discussing knowledge sharing in a police context is to focus on distribution of criminal intelligence, defined as information compiled, analysed, and/or disseminated in an effort to anticipate, prevent, or monitor criminal activity (International Association of Chiefs of Police (IACP), 2002). However, organisational functioning can also be enhanced by other potentially important types of information including aspects such as informing employees of new policies, procedures and strategies which convey how police forces should operate. In the international context, understanding how these may vary between different countries can help officers' deal better with the expectations and norms of personnel from other forces (Abrahamson & Goodman-Delahunty, 2013). Outside the forces, awareness of criminal legislation within and across nations could also provide an important influence

(Stenzel, 2010). Finally, we can also point out that the cross-border sharing of learning itself regarding technology use, professional development and best practices should prove of value in improving performance (Adang, 2009). The Griffiths et al., (2016) review of the police knowledge sharing literature showed there was relatively little empirical examination beyond criminal intelligence of the types of knowledge shared and hence this research study provides an opportunity to uncover what other sorts of information are perceived as important in an international partnership aspect.

RQ1. What types of knowledge are shared across geographical borders by police organisations?

The Griffiths et al., (2016) review showed the literature on police knowledge sharing focused mainly on technological methods such as online databases, mobile data terminals, intranet systems, email and mobile phones. Each of these showed the potential for rapidly and effectively sharing information but showed issues in terms of accessibility and compatibility of systems across forces. Other non-technological methods of knowledge sharing explored in the literature included both verbal and written briefings, meetings and face-to-face informal meetings and communication. As mentioned previously, there has been a particular deficit in investigating cross-border knowledge sharing mechanisms and so the research reported here sought to incorporate a diverse range of examples by ensuring coverage of two major mechanisms by which international policing cooperation is enabled. First, there can be direct collaboration between members of police forces in different countries. For example, Joint Investigation Teams (JITs) deal with specific transnational criminal cases where two or more countries join together to collect evidence and capture suspects or criminals (Europol, 2019; Yue, 2014). Cross-border patrols work on a more day-by-day basis. Beyond specific operations, physical centres can be set up on country borders which house different police forces with the aim of addressing crimes such as customs violations (e.g. the Police-Customs

Cooperation Centre of Tournai coordinates the exchange of information between French and Belgian Police institutions). The second approach is through the actions of international security bodies such as Interpol and CEPOL. For example, in 2018 Interpol ran training courses for members from 61 countries aiming to deliver the skills and knowledge necessary to effectively confront national and transnational cybercrime (Interpol, 2018). This research study set out to identify the challenges faced by these two vehicles for sharing knowledge across international boundaries and assess to what extent they were similar.

The theoretical framework for the study draws on the organisational learning literature as the police studies literature has done relatively little on the topic with regards to international dimensions (Griffiths et al., 2016). Organisational learning theorists such as Easterby-Smith, Lyles and Tsang (2008) and van Wijk et al., (2008) suggest three categories of factors that can influence inter-organisational knowledge sharing. The first category relates to *organisational characteristics* such as size, decentralisation, capacity to absorb new knowledge, and the motivation of members to learn or teach. The second category concerns *inter-organizational factors* such as power relations, trust, shared visions and systems, mechanisms and social ties. Finally, the third aspect concerns *the characteristics of the knowledge* itself; for example, knowledge that is more tacit, ambiguous and complex would be proposed to be more difficult to transfer across contexts. Wang and Noe's (2010) review provided a more detailed perspective on individual knowledge sharing, pulling out how organisational, interpersonal and cultural characteristics could influence motivation to share knowledge and hence actual knowledge sharing behaviour. Although these theoretical frameworks are potentially useful, they have not been applied in the specific international police knowledge sharing context. Indeed, Seba, Rowley and Lambert (2012) conducted a study in the Dubai Police Force and found that despite much theorising about motivation, it played no significant role in predicting knowledge sharing in this context. As Seba et al., (2012, p.179) state in their recommendations:

“Further inductive studies in other contexts would be a useful platform for establishing the most appropriate theoretical approach to understanding and measuring the impact of antecedents to knowledge sharing”.

RQ2. What are seen as the main facilitators of police knowledge sharing across borders?

RQ3. What are seen as the main barriers to police knowledge sharing across borders?

With organisations such as Europol (2019) and Interpol (2018) highlighting the increasingly global trends in crimes such as drug smuggling, human trafficking, money laundering and cyberfraud, we finally take a prospective view in exploring how knowledge sharing approaches may need to adapt in the future. Research has suggested this generally may be through increasing sophistication and compatibility of technology systems, harmonisation of processes and legislation and more training (e.g. Griffiths et al., 2016; Gottschalk, 2010; Stenzel, 2010). However, in our study, we sought to explicitly focus on the international context and explore the views of police officers involved directly in cross-border initiatives requiring knowledge sharing.

RQ4. What capabilities will be required in the future by police organisations to improve their international knowledge sharing?

By seeking to answer these research questions, we should make a significant contribution to the scant literature on understanding the challenges of international police knowledge exchange and thereby help security organisations and policy-makers to develop more productive knowledge sharing approaches across national borders.

Method

The research study was undertaken as part of the European Union-funded Comparative Police Studies In The EU (COMPOSITE) research programme. Researchers from ten countries (Belgium, Czech Republic, France, Germany, Italy, Republic of Macedonia, the Netherlands, Romania, Spain and UK) formed the project consortium. One of the major aims of COMPOSITE was to investigate the effectiveness of international knowledge sharing by police organisations in the EU. Given the diverse nature of international cooperation, it was decided to use a case study method for each country team in order to identify the factors influencing knowledge sharing across international boundaries. Since this type of knowledge sharing is a complex phenomenon, the case study method allows an appropriately in-depth investigation of a particular example (Haslam and McGarty, 2014). An obvious criticism of a single case study is that the conclusions may be too idiosyncratic to relate to other situations. Hence this research produced ten case studies in order to inductively identify what type of conceptual similarities and differences there were in the phenomenon by comparing across different examples and using the aforementioned organisational learning theory framework. It is also important to note that the project consortium contained researchers from the East European countries of Romania, Czech Republic and the Republic of Macedonia, countries which have been typically neglected in past policing research (Smith, 2014).

All ten COMPOSITE country research teams (co-authors on this paper) were briefed on the aims of the project in meetings and then initially asked to submit a one-page case study proposal to the first author (the co-ordinator of this research) for suitability approval before undertaking their data collection. The approval process was designed to check that the proposed case study focused on one of the two types of international knowledge sharing contexts, defined as follows:

- A cross-border collaboration between police forces in two or three countries. This could have been on a specific project, scheme of work, event, or particular criminal investigation that required cross-border knowledge sharing. Six case studies were completed with a focus on this area of knowledge sharing (Case Studies 1 to 6 in Table 1).
- An international agency with a co-ordinating role across several countries and the role it plays in facilitating knowledge sharing across country borders. Four case studies were completed with a focus on this area of knowledge sharing (Case Studies 7 to 10 in Table 1).

[INSERT TABLE 1 HERE]

Each detailed case study report (around 2000 words) was required to provide an understanding of the collaborative work of the organisations, and to address the four research questions:

- What types of knowledge are most commonly shared across borders (*RQ1*)
- Identifying the major facilitators and barriers to knowledge sharing across borders (*RQ2 and 3*)
- Identifying the capabilities that need to be developed in the future in order to promote better international knowledge sharing (*RQ4*)

Guidelines were presented to the teams for conducting the case study, including: the key research questions; how to structure the report; timing; and the types of interview questions that could be used.

Table 1 describes the topics of the case studies and the country in which the team of researchers conducting the research were located and the types of interviewees providing data for the case study. Three months were allocated for undertaking and writing up the research. All ten country teams produced their case study based upon a combination of desk-based research such as reviews of websites of the target organisations and relevant reports or articles about said organisations and their collaborations. Furthermore, up to five interviews with police officers involved in cross-border collaborations, members of cross-border agencies or occasionally experts with knowledge of the topic were undertaken. Precise research methods differed slightly from country to country, depending upon the topic being studied and the ease of access to organisations in order to conduct the research. With the complexity of ten countries conducting case studies in a relatively short time-frame, teams were given some flexibility in how they carried out the research to address the common questions of interest. For example, in Case Study 1 (CS1) on cross-border knowledge sharing activities between Belgian and French counterparts in the West Coast region, the data-collection consisted of four interviews with senior and operational Belgian police agents directly involved in the Euregion Eurometropool/West Coast police patrols and an expert on Belgian Euregions within the federal Belgian police. Additionally, several regional and national reports and articles on cross-border patrols active in the region were consulted. CS10 investigated the role of CEPOL, the European Police College and conducted four interviews with CEPOL secretariat staff and one with the UK CEPOL National Contact Point plus reviewed information from the CEPOL website and associated reports.

Secondary analysis of the ten case studies

The ten 2000-word case studies provided a wealth of information on knowledge sharing across EU borders. They provided insights into the context of the target organisations and then integrated interview and documentary evidence to provide an analysis for each of the posited

research questions. Therefore, the first section of each case study provided the background context to the target organisations, the second discussed the different types of knowledge shared, the third and fourth outlined knowledge sharing barriers and facilitators with major themes and illustrative quotes and examples and the fifth provided a discussion on future perspectives. The case study authors were asked in their report write-up to categorise and highlight (e.g. by labelling in bold text) significant topics generated through the questions (e.g. important barriers and facilitators of knowledge sharing). This then made it clearer which themes would be summarised in the secondary analyses. Given the richness and complexity of the data and the need for brevity in this paper, the relevant sections of each case study report were then compared using content analysis in order to identify the general themes arising across the examples and the frequency by which they occurred (see Tables 2 to 4). Content analysis is a well-established method for systematically pulling out from qualitative data the presence of certain words, themes or concepts (Haslam and McGarty, 2014). The method was used to generate the summary tables in this paper in two stages. First, each of the ten case study reports produced by the country teams (which were written in English) was read by the first and second authors of this paper. For each Research Question (RQ) 1 to 4, they created a separate table which copied across the substantive text from the case study report which provided the answer to that particular RQ. For example, a table was created for barriers to knowledge sharing, where each of the ten rows listed the case study title in column one and the key text from the case study report which explained the different barriers in column two. At this stage, key terms or concepts in the text were highlighted in bold (e.g. language, lack of financial resources). In stage two, a simpler summary table for each of the RQs was produced which created a short title phrase for each of the topics that had been highlighted in bold in the stage one RQ table and indicated which of the case studies had mentioned this factor (these are the Tables 2-3 in this paper; Table 4 contains more explanatory text summarising the views on future

developments). A factor was highlighted as relevant for the summary tables if there was evidence in the case study that it represented: a type of knowledge that is shared (RQ1); a facilitator of, or barrier to, knowledge sharing (RQ2 and 3); or an area for future development with regards to knowledge sharing (RQ4). Many of these factors were already anticipated from our initial reviews of the literature (see Griffiths et al., 2016) and labels that were meaningful across our different cultural contexts were used (e.g. motivation to share knowledge, standardised processes and documentation). A further example concerns the roles of managers. We used the factor term ‘effective leadership’ as a facilitator (Table 2) as CS1 indicated that active support from senior leaders was important in encouraging knowledge sharing at lower levels. However, we used the term ‘leadership issues’ when discussing barriers (Table 3) as these related more to situations where leaders were rotated out of position quite frequently or were in charge of differently structured forces across borders rather than referring to their style of leadership. The first two authors of this paper discussed and agreed the evidential support for the factor labels and the draft summaries were then circulated to the country teams for any additional comments or clarifications.

Of course, by conducting multiple case studies across the different countries, there can be questions raised regarding the reliability and validity of the research but we attempted to address this in several ways (Yin, 2009). To reiterate, reliability of the research was managed by: standardising the selection of the initial case studies (initial proposal and approval by lead author); sharing with each of the country teams the types of questions to be asked during the case studies; setting the same time limit of three months for all teams; and standardising the length and structure of the case study report by each country team. The findings to be reported in the paper involved secondary analyses of the ten case studies and its reliability was enhanced by having the first two authors of the paper read, discuss and content analyse the main findings. The validity of case studies was addressed through the use of multiple sources of evidence such

as interviews with multiple individuals combined with desk research and checking our summary interpretations with the case study authors (Yin, 2009).

Results

The following section therefore summarises the key themes emerging from the case studies with regards to the four main research questions.

RQ1. What types of knowledge are shared across geographical borders by police organisations?

Nearly all the case studies showed that intelligence and operational information are the main types of knowledge shared via cross-border collaborations, including data on wanted individuals or groups of interest, vehicles, border security issues, profiles of crimes and details of specific operations, activities, criminal cases or records. However, beyond this, those case studies relating to international organisations such as CEPOL illustrated that police officers also need and rely on other types of information, the sharing of which is facilitated by international organisations, for example information on legal procedures, training information, research and information on systems and practices. For example, MARRI (Case Study (CS) 8) hosted an electronic database of existing and ongoing research on the topic of migration and policing which allowed effective dissemination to police forces and other partners. Best practice is frequently shared internationally, via both cross-border collaborations and international agencies, and includes experience and advice on effectively tackling crime, organisational structures, processes, working methods and performance on key activities. CS4 showed how the civilian crisis management training and advisory activities conducted by the

Arma dei Carabinieri encouraged participating countries to present and compare their operating procedures in this area.

The case studies also showed that although more formal methods of knowledge sharing (including meetings, workshops, seminars, lectures, printed materials, databases and emails) were popular for sharing these different types of information, there was an equally important role for more informal approaches where conversations developed through visits and joint operational activities. CS1 highlighted how during cross-border patrols officers often exchanged information regarding specific phenomena and incidents in an informal setting. One example given was where during such a patrol, a Belgian officer told one of his French colleagues that they were currently experiencing a wave of car burglaries, and explained the particular modus operandi that was used to commit these crimes. His French colleague replied that they were experiencing the same phenomenon, which led them to believe that the crime waves at both sides of the border were related to one another, and most likely committed by the same perpetrator. Fortunately, the French police had an eye witness who was able to remember part of the number plate of the vehicle that was involved in these crimes. West Coast police used this partial number plate to conduct a query of their ANPR system to see whether this partial number plate was somehow connected to the incidents at the Belgian side of the border. They found that a specific vehicle that matched the partial number plate entered the West Coast police zone each time just a couple of minutes before the incidents happened. West Coast police then communicated the number plate of this vehicle back to their French colleagues. After inquiring their records, the French colleagues found that this specific vehicle belonged to someone they knew from similar crimes, and were thus able to apprehend the suspect. CS9 explored the FRONTEX agency where interview participants reported that the knowledge sharing was based mainly on agreements, conventions and cooperation treaties between the member states. Those kind of documents guided the professional relations between

police officers from different EU countries working together to organize joint operations. However, besides those formal relations, it was suggested that professional relationships developed into friendship relationships and could therefore facilitate more informal communication between police officers and consequently knowledge exchange. Trust was also deemed important by all the participants, since high levels of trust facilitated cooperation and the knowledge exchange not only between police officers of the same unit in FRONTEX, but also between those from different member states.

RQ2. What are seen as the main facilitators of police knowledge sharing across borders?

In accordance with organisational learning theoretical frameworks (e.g. Easterby-Smith, Lyles and Tsang, 2008; van Wijk et al., 2008), the themes generated by asking about facilitators of knowledge sharing were grouped into the three domains of organisational, inter-organisational and knowledge factors (see Table 2). It was also clear from the evidence that an additional dimension of inter-country factors needed to be included.

[INSERT TABLE 2 HERE]

Within the *organisational factors*, appropriate **technology** was reported as the most common facilitator for knowledge sharing, with four of the case studies clearly featuring it. For example, the CEPOL online system for learning and training hosts a variety of information, making it quickly and easily accessible to police officers across Europe (Case Study (CS) 10). Four employee characteristics were generated, with sufficient **staff experience** (CS4) and good **motivation for knowledge sharing** (CS6) being highlighted in two studies. The French-Belgian cross-border patrols case study (CS1) mentioned **adequate language skills** and **effective leadership** as aspects that promoted successful knowledge sharing for them. Interestingly, only CS1 mentioned having **sufficient financial resources**.

For *inter-organisational factors*, **good working relationships across borders** were seen as the most common key facilitator of effective knowledge exchange, with six of the ten case studies mentioning it. Examples given included having social events, a good working atmosphere and trust, a history of good contacts with other organisations and / or forces, conducive culture, networks with other public authorities, building networks and National Contact Points for international agencies. The case study on FRONTEX (CS10) showed that informal relations are also important for facilitating communication between police officers and consequently the sharing of knowledge. Similarly, important facilitators of knowledge sharing in the German-Polish Police and Customs Cooperation Centre in Świecko, Poland (CS5), were reported to be the good working relationships between officers at the centre, and the networks and contacts which had been built up over time by senior police officers. The international agency CEPOL (CS10) was described as facilitating knowledge sharing via the creation of networks between police officers across borders. This is via educational training courses and an exchange programme, where people would meet to exchange experiences, best practices, procedural regulations, laws and information about policing in their country, and make contacts in other countries. Indeed, National Contact Points, individuals who act as a point of contact and a source of information between parties who need to share knowledge, were important for both CEPOL (CS10) and MARRI (CS8). Having **clear written agreements** on cooperation between police organisations were also seen as helpful in three of the case studies (CS6,7 and 9). The last three inter-organisational factors describe ways in which organisations can actually work together more effectively: **standardising processes and documentation** (CS3 and 7), allowing **flexibility in working methods** (CS2, 5 and 6) and also **flexibility of location** (CS2 and 4).

At the *inter-country factors* level, three of the case studies mentioned the value of **European and bilateral conventions** between the Governments of different countries which

legislated for easing co-operation across borders. For example, CS2 described how such conventions simplified cross-border JIT collaborations for criminal investigation and detection.

Finally, *knowledge characteristics* were rarely mentioned. CS6 described knowledge sharing as most effective when **information was clear and reliable**, while CS3 mentioned the importance of **realistic and detailed scenarios when using training exercises**.

Comparing across the two main modes of collaboration, the international agencies (CS7-10) were much more focused on easing the inter-organisational dynamics through developing good relationships and setting up written agreements. The cross-border collaborations were concerned with all four types of factors.

RQ3. What are seen as the main barriers to police knowledge sharing across borders?

Table 3 again groups the factors generated by this question into organisational, inter-organisational, inter-country and knowledge characteristic domains. Many of the facilitator themes emerged as barriers when considered in the opposite sense but there were some interesting differences compared to the previous section.

[INSERT TABLE 3 HERE]

Within the *organisational factors*, by far the biggest barrier to knowledge sharing highlighted in the case studies is that of **language problems**, with nine out the ten case studies mentioning it. Language skills clearly play a highly important role in the sharing of knowledge across countries which speak different languages. Without the ability to communicate in a common language, effective knowledge sharing becomes virtually impossible. Also, if information needs to be translated or is misinterpreted, this causes time delays. English appears to be the most commonly used language in communicating across countries, however different levels of proficiency in English were mentioned as causing difficulties in sharing knowledge.

Inadequate technology was again raised as a significant barrier to knowledge sharing internationally in five of the case studies. In particular this was due to different countries using differing technological systems which could not communicate with one another or transfer information easily. The people factors of **lack of staff motivation** to share knowledge (CS9,10), **inadequate experience or skills** (CS1,9) and problematic **leadership issues** (e.g. rotation of managers too frequently) (CS1,3) again came up as important topics.

For *inter-organisational factors*, **organisational differences** across countries were the most common aspect, with five of the case studies highlighting this as a barrier. Differing priorities, structures of forces, and differing methods and procedures for knowledge sharing, can be classed as organisational differences. Lack of specific written agreements was likely to hinder information sharing across borders. Only two case studies (CS8,9) this time mentioned **lack of good relationships** as a barrier and only two (CS6,8) also raised **lack of integration and standardisation of systems**. Three additional factors were raised here that were not mentioned in the facilitators section. First, the role of **politics** was highlighted in CS1 in terms of the lack of a mandate for top police officers to co-ordinate certain regional forces. Second, specific to two of the Police and Customs Cooperation Centres (CS4,5) was a perceived **lack of visibility** of the Centres among police forces. Third, CS2 raised the issue that the way that JITs are organised and run vary from country to country depending on the priority given to the teams and their investigations, hence sometimes leading to delays.

There was a richer range of issues identified under the *inter-country factors* section when barriers were addressed. Three case studies described how the **lack of a legal framework for collaborations** hindered their knowledge sharing efforts (CS1, 5 and 7). CS5 also identified how **national differences in the law** could prove an obstacle, by highlighting the issue that traffic offences in Poland are an infraction when they occur without personal injury but in Germany they are always classed as a criminal offence. It is clear that joint operations /

collaborative centres can only handle cases which are criminal offences in both countries. The final two issues raised involved **Government decisions to organise their police forces** in different ways and to place **different strategic emphases** on types of crimes and collaborations.

One interesting issue was discussed that seemed most appropriate to class under the *knowledge characteristics* heading. This regarded the extent to which the knowledge itself was **legally constrained** in its ability to be shared across boundaries. CS1 showed that there was sometimes uncertainty among Belgian and French police officers in what they were actually allowed to share with their counterparts. .

Again, comparing the two modes of collaboration, there was more concern from the international agencies on inter-organisational dynamics, although language issues were very common throughout.

RQ4. What knowledge sharing will be required in the future by police organisations and what capabilities will be needed to facilitate this?

Table 4 summarises from each case study the future perspectives from interviewees on what areas will need to be developed in the future for them in order to improve international knowledge sharing.

[INSERT TABLE 4 HERE]

Harmonisation of approaches across countries was described as important in a number of situations. The streamlining of organisational processes and procedures would make knowledge sharing in the case of cross-border collaborations much quicker and easier, and this could be facilitated via the sharing of best practices across countries. The case studies on Arma dei Carabinieri training programmes in Italy (CS3), and the European Training College CEPOL

(CS10), suggest that advancing towards harmonised approaches in the delivery of training across the EU would improve cross-border understanding and the ease of working together. The case study on CEPOL raises the importance of developing minimum standards for training across the EU and for officers to be at the same minimum level across all EU countries. The JIT case study from the Netherlands (CS2) stressed the need to put in place formalised agreements in advance on shared procedures and powers.

In the previous sections, we highlighted how technology was mentioned as both a barrier and a facilitator of knowledge sharing. Unsurprisingly, therefore, **better future use and integration of technology systems** was indicated as being of high importance (CS4,6,7,10) and the streamlining of technological systems across countries would clearly have a positive impact upon knowledge sharing. For example, the interviewees from the Police-Customs Cooperation Centre of Tournai, Belgium (CS4) described how networking the resources of all PCCCs at the EU level would help the collaboration and scope of operations.

Continuing the work of **building relationships and contacts across borders** was seen as crucial for the future. Effective knowledge sharing clearly relies on good working relationships between the participants. A complex system of communication exists across the EU with police forces clearly working with a number of other forces and with international organisations. The relationships built up are very important for the effectiveness of police work in the future. These relationships need to be encouraged, and processes for communication need to be quick and smooth, in order to facilitate effective sharing of information (direct and in real time). Joint training courses, workshops and inter-country officer secondments were identified as other routes to establishing trust and good working relationships.

Two of the international agencies (MARRI and CEPOL) raised the issue for them of **securing long-term investment** for the future. Their funding was dependent on the EU

member states and the current adverse financial climate meant they may not be able to engage in sufficient knowledge sharing activities.

Discussion

This paper set out to provide evidence on the challenges of sharing knowledge between police organisations across geographical boundaries and makes a number of substantial contributions to a scarce literature. First, it was wider in scope than past studies since it integrated data from multiple case studies conducted in ten European countries. Second, the research covered two different types of collaboration: initiatives between police forces in specific countries (e.g. Joint Investigation Teams) and international agencies (e.g. Europol). Third, it used organisational learning theory drawn from the management literature (Easterby-Smith, Lyles and Tsang, 2008; van Wijk et al., 2008) to conceptually organise and interpret the findings from the policing context. The theoretical, research and practical implications of the research question findings will now be discussed.

The importance of international knowledge sharing was highlighted by all of the case studies, where all organisations were required at some point to work with and share knowledge with other police forces or agencies in order to meet their goals. For example, the case study on the international agency MARRI showed that it has partnerships with a wide number of other organisations. The case studies focusing on cross-border collaborations clearly demonstrated the need for police forces to work together and the reliance on other forces in cross-border operations. The case study on the French and Belgian officers on cross-border patrols (CS1) demonstrated the ways in which the two police organisations needed to work together in order to apprehend criminals committing a number of vehicle crimes across their border. Indeed, one of the top officers in the Belgian local Police of the West Coast declared

in that case study that the police are currently in a complex tangle with respect to knowledge sharing, due to the number of organisations present in the police landscape, including the local police, federal police, Europol and Interpol. This suggests that a complex map of communication channels exists across the EU, made up of a network of organisations which need to work together.

The first research question examined the types of knowledge shared across geographical boundaries. As expected, it was most commonly seen as imperative for intelligence and operational information to be shared quickly and efficiently between countries in situations of cross border operations, where the police need to be able to work as quickly as the criminals. This supports the view of the increasing importance of intelligence-led policing in the 21st Century (Cotter, 2017). However, the case studies also showed the importance of sharing other types of information such as legislation, procedural guidelines and safety advice. International organisations, such as CEPOL, in particular are described as having a key role in facilitating the sharing of best practice through workshops and training. Future research would therefore do well to examine more closely how other types of knowledge are shared in policing contexts since they can also contribute to organisational performance (Tyagi and Dhar, 2016). It was also clear from the research that beyond formal methods of knowledge exchange such as meetings, courses and database use, informal sharing of information occurred during shared cross-border patrols or where officers from different forces were co-located in the same building. This case studies indicated that situations where officers could spend extended periods of time working with each other face-to-face allowed trust to build up and this then made them more willing to exchange useful information. Future research could therefore test the hypothesis that increased trust between members of different country forces leads to improved knowledge exchange on a wide range of topics using informal methods.

Antecedents of cross-border police knowledge sharing

It was clear from the case studies that the sharing of knowledge is not without its challenges. These were investigated by asking participants about both barriers and facilitators, in order to identify if the same issues emerged. By and large, that was the case. In terms of organisational factors both technology and people capabilities came up as the main influences. Email, videoconferencing, the internet, mobile phones and shared databases all eased the transfer of information across borders. These were not only used for sharing criminal intelligence but other types of information, too. For example, the case study on CEPOL (CS10) describes that their online system for learning and training hosts a variety of courses on topics such as cybercrime, gender-based violence and the Schengen Agreement, making it quickly and easily accessible to police officers across Europe. However, technology became an obstacle when systems were not integrated across organisations or the right technology was not available or too costly. For example, the Police and Customs Cooperation Centre in Le-Pertus (CS6) reported technical barriers due to problems with connectivity (the centre is in the middle of the Pyrenees) and cost (phone calls to forces in other countries were classed as international since the centre is in France). The findings of this study echo the concern of Gottschalk and Dean (2010) who highlighted the problem of incompatible systems between law enforcement and cooperating agencies.

It was quite obvious that the capabilities of staff played a strong role in facilitating cooperation, particularly with regards to language skills, with all but one case study citing it as a barrier. This was both in terms of not being able to directly communicate with staff in other countries but also the indirect delays and possibilities of misinterpretation caused by translation activities. The findings regarding language concurred with the conclusions of Yakhlef et al.,'s (2017) study which examined international collaboration between six countries around the Baltic Sea (none of whom were included in our study). Other employee characteristics raised

concerned employees' motivation and experience / skills in sharing knowledge. These are both areas that could be improved by appropriate learning, appraisal and reward interventions. Surprisingly, leadership was not mentioned that frequently as an influence. CS1 made an interesting point that in France management of police forces changes every three or four years, proving an impediment to long-term plans for knowledge sharing. Other studies in the policing context (e.g. Seba et al., 2012) have shown leadership as a significant influence on the attitudes of staff to share knowledge so it would be worth exploring in more detail how leadership structures, styles and influence differ across countries in future research. It was curious that financial resources were mentioned in only three of the case studies and this may highlight a point that is it not just about having the resources but, more importantly, how they are used.

With inter-organisational factors, the most common influence was with regards to developing good working relationships between organisations. Trust and understanding of cultural and organisational differences between parties seemed to be an underpinning issue for defining a good relationship. Indeed, the meta-analysis of the general organisational knowledge transfer literature conducted by van Wijk et al., (2008) strongly corroborated the view that trustworthy and strong relationships between institutions are strong enablers. In the case studies, such relationships were cultivated by having social events, officer exchanges and visits. The international agencies such as CEPOL had a particular role in brokering relationships through their abilities to coordinate and deliver training programmes and conferences for multiple police organisations. Shared ways of working were also seen as key drivers. These were reported as being in the form of written agreements on how shared operations would work and standardised processes and documentation. Interestingly, three case studies mentioned being allowed to work flexibly with partners helped their collaborations. The same cross-organisational teams being able to work in the same locations in different countries or sharing

the same building space were also given as good methods of promoting face-to-face knowledge sharing.

It was clear from the evidence that a distinct set of inter-country factors also influenced knowledge sharing efforts. In particular, the actions of Governments and the EU in setting up legal frameworks and conventions between countries eased cooperation for some and their absence proved a barrier in other case studies. Of course, national differences in the law proved an obstacle when acts were inconsistently classed as crimes in various regions. This supports Dolowitz and Marsh's (2000) view on how lack of knowledge regarding policy content and the political, economic and ideological contexts in which they originate can influence the success of policy transfer from one domain to another. A related concern was the extent to which police officers actually knew what information they could legally share. It was reassuring to see that similar issues regarding written agreements or legislation differences (as well as trust and relationships) were also seen in Stenzel's (2010) and Yakhlef et al.,'s (2017) study of inter-country co-operation. This hypothesis that countries with written agreements or legislation on police information sharing would be more likely to exchange knowledge compared to those without agreements could be formally tested in a quantitative study with a much bigger sample of forces. The role of Governments in deciding how to structure forces and prioritise criminal activities was felt to have an additional bearing in our study.

Although organisational learning theorists (Easterby-Smith et al., 2008; van Wijk et al., 2008) put knowledge characteristics as their third type of influence, it was rarely mentioned in the case studies. One case study mentioned the importance of clear and reliable information while another described the importance of realistic and detailed scenarios in training exercises. An interesting addition from this research involved highlighting the legal sensitivity of the information itself under this category. One could also infer from the data that the language in which the information is communicated is influential.

Future knowledge sharing developments

The areas for development identified by the participants built on the factors above to identify the greater harmonisation of approaches across countries as a priority. This would be in terms of processes, procedure, legislation and working agreements and also training standards. Allied to this, there was a desire for better future use of technology and integration of systems so that they could ‘talk’ to each other more easily. On a more complex level, recent activities reported by Europol (2019) aim to build on the General Data Protection Regulations (GDPR) requirements to consider how to balance privacy and security concerns with regards to data management in the policing of transnational crime. A third key aspect was the need to continue building stronger cross-border relationships through joint events. It was felt by participants that face-to-face initial contact was a very good means of building up the cultural and organisational understanding and trust required to underpin good relationships. Finally, two of the international agencies specifically identified the need for securing long-term funding to enable their collaborative work to grow.

Comparing the different modes of collaboration, international agencies tended to focus more on discussing inter-organisational factors while police forces reported both intra- and inter-organisational factors as important. Particular issues raised by agencies such as CEPOL and FRONTEX were around the importance of understanding organisational differences and establishing good relationships with policing organisations. Although not counted as a current barrier to knowledge sharing, both MARRI and CEPOL professed some concern in the future regarding continued funding for their co-operative efforts. Since such agencies do not belong to any one country, it is beholden to international bodies such as the EU to ensure that their cooperative networks and activities are supported well enough. It was clear from the research

that the multinational security institutions played a distinct role in coordinating operational, best practice and training knowledge sharing efforts that country police forces could not do on their own.

General research implications and limitations

The research also provided some useful theoretical implications. Examination of the police research literature on knowledge sharing showed no theoretical model of international knowledge sharing. The models that are present tend to focus on intra-organisational knowledge sharing through technology (e.g. Gottschalk, 2010). Theoretical approaches from the general organisational learning literature (Easterby-Smith et al., 2008, van Wijk et al., 2008) on the other hand did provide a useful framework in which to fit the factors generated by the case studies into organisational, inter-organisational and knowledge characteristic domains. However, the case studies clearly showed a need to add an extra level of inter-country factors to incorporate cross-national political and legal influences. Police organisations, as with other public sector institutions, are bound by political and legal frameworks that are not so relevant to private sector firms. The latter type of organisation has tended to be the focus of inter-organisational research hence it should be noted that although organisational learning theories are appropriate for investigating police knowledge sharing, they need to add inter-country factors when considering cross-border collaborations. The case study research also provided valuable additional detail in the types of influences relevant for the international policing context. For example, the importance of employees' language skills under organisational factors, the role of shared agreements, processes and methods under inter-organisational factors, the presence of multilateral conventions for inter-country factors and adding the legal sensitivity of the information under knowledge characteristics.

A future step for this research would be therefore to use the qualitative data from our case studies to design quantitative tests of derived hypotheses. For example, a cross-country questionnaire survey for police organisations could be designed where relevant police officers and other personnel are asked to rate the quantity and quality of their cross-border knowledge exchange with others. The survey would then ask a series of questions structured around our amended organisational learning theory framework (Easterby-Smith et al., 2008; van Wijk et al., 2008) of organisational, inter-organisational, inter-country and knowledge characteristic dimensions. Each of these four dimensions would be populated by the specific factors identified by our case studies. This would then allow a systematic and standardised comparison of the relationships between the factors and the effectiveness of international knowledge sharing. It would be hypothesised that all four dimensions of organisational, inter-organisational, inter-country and knowledge characteristics would be significantly related to knowledge sharing but we could also assess the relative strengths of specific factors within the dimensions. For example, it would be hypothesised that officers' language skills (mentioned in nine of our case studies as an influence) would be more strongly related to knowledge sharing than their motivation (mentioned in only three case studies). Future research could also investigate more closely why different countries vary in the presence and strength of the factors identified in this study. For instance, political orientation might dictate how much resource is invested in technological systems and the extent to which knowledge sharing agreements with other countries are implemented (Dolowitz and Marsh, 2000). Differing centralised or decentralised police organisation structures in countries might also play a role.

The findings of the present research should be noted within a number of limitations. The selection of case studies offered by participating police organisations may have been prone to self-serving bias where they were chosen to provide a particular positive (or negative) viewpoint. We undertook ten case studies across these European countries which is much

greater than previous research but is still a relatively small number. Some caution should therefore be taken in generalising these findings from a smaller, non-randomised sample. Bearing these and other aforementioned considerations in mind, there are several general research avenues to pursue. First, the case studies were done across ten countries as part of the COMPOSITE programme but this meant that they were all done in a European context. Future research would benefit from undertaking studies in different geographical regions e.g. investigating how US police forces share knowledge with counterparts on their borders with Canada and Mexico or how Interpol manages different relationships with police forces in African, European and Asian regions. There is a need to see if the same factors emerge in other contexts as were presented in this paper. Second, all the case studies were based on a mix of interviews and document analysis. Quantitative and longitudinal research with a greater sample of participants from collaborating organisations would allow the posited relationships to be tested statistically. Lack of language skills was identified as the most common barrier to international knowledge sharing in the interviews but is it really more important than good leadership or adequate technology? Third, since the exploratory research covered a range of collaborative relationships, like was not always being compared with like. Hence, it would be worth in the future focusing on just one type of collaboration (such as Police and Customs Cooperation Centres) and investigating them over a larger number of countries.

Practical recommendations

Bearing in mind the limitations described above, the research and other literature has tentatively suggested a number of key practical recommendations for police organisations and agencies that are intending to improve their knowledge sharing effectiveness across geographical boundaries. First, standardised technological systems should be created and utilised. For example, making use of the internet and other systems which are accessible to a

wide audience is a valuable strategy. The case study on CEPOL described the use of ‘webinars’ as an example of best practice using an internet-based system, where training sessions are easily accessible to police officers across EU countries. Tailored software systems could be created for specific collaborations e.g. police anti-terrorism networks. Second, good working relationships should be established across countries. Such relationships are founded on trust and understanding and can improve both formal and informal knowledge sharing, and create clearer communication channels. The case studies describe good relationships being established through social events, networking, exchange programmes, and having National Contact Points for international agencies such as Interpol and CEPOL.

Third, language skills should be improved in those who are required to share knowledge with officers in other countries. Language training courses are widely available in all countries at universities or colleges, and they are also offered by international policing organisations, for example, both CEPOL and FRONTEX offer language courses, with FRONTEX describing their language courses as being specific to a policing context, focusing on operational needs and related terminology. Fourth, awareness of organisational and legislative differences should be improved. Differing organisational structures and procedures, and differing laws and legislation across countries, have been shown to create barriers to knowledge sharing across countries, in particular due to a lack of awareness of the differences between countries. Those who are required to share knowledge across country borders would be advised to make themselves aware of organisational and legislative differences, and to explore the option of taking training courses or schemes which can facilitate this learning. CEPOL offers training courses with an aim to broaden knowledge of policing differences across the EU. In particular, the exchange programme offered by CEPOL, by which officers visit their equivalents in another country, and spend time working with another police force, is a method by which officers can learn in great detail about both policing differences and cultural differences in

other countries. Going beyond this, a specific cross-country liaison officer role could be created, populated with officers trained in the skills needed to foster collaboration. Fifth, awareness of international centres / projects / organisations should be improved. The case studies on the Police and Customs Co-operation Centres in Tournai, Świecko and Le-Pertus, all describe a lack of visibility of the centre, or a lack of recognition of the importance of the work of the centre, as being a barrier to knowledge sharing. A recommendation here would therefore be to undertake promotional activities in order to raise awareness of the important work taking place, the aims and objectives of the centres, and to share examples of best practice from the centres, for example operations or investigations which have had a successful outcome. This should also be done for other international projects, operations, investigations, and the work of international agencies. The EU could have a role here in setting up an overarching network to connect these international centres together.

In conclusion, the exploratory research reported in this paper has provided empirical evidence on the little-studied topic of the challenges of knowledge sharing across international boundaries by police organisations and agencies. The rich data generated from the case studies conducted by researchers in ten countries has highlighted the range of organisational, inter-organisational, inter-country and knowledge factors that can influence the effectiveness of knowledge sharing in this particular context. Given technological, regulatory and commercial trends suggest no let-up in the need for policing cooperation across borders in the future, it is hoped this research has provided valuable insights for promoting more productive international security partnerships.

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Table 1. Summary of the ten case studies of international knowledge sharing, the location of the research teams and the types of interviewees used in the case studies.

Topic of Case Study	Research team location	Types of interviewees supplying data for the case study
Cross-border collaborations		
1. Cross-border knowledge sharing activities between West-Coast Police, Belgium and French counterparts.	Belgium	Senior and operational Belgian police agents directly involved in the Euregion Eurometropool/West Coast Cross-Border Police Initiatives (CBPIs) and with an expert on Belgian Euregions within the federal Belgian police.
2. The co-operation of Joint Investigation Teams (JITS) based in the Netherlands with the surrounding countries of Germany, Belgium, England and France.	Netherlands	Dutch officials, police officers, Royal Dutch Marechaussee, the Fiscal Intelligence and Detection Agency and Public Prosecution Service with experience of JITS. The case study is based on data gathered by Sollie and Kop (2012).
3. The role of Italy's Arma dei Carabinieri in running training on civilian crisis management for police organisations in Europe (part of European Union Police Services Training 2011-2013).	Italy	Members of the Arma dei Carabinieri.
4. The Police and Customs Cooperation Centre (CCPD) in Tournai, Belgium and its coordination information exchange between French and Belgian police.	France	The French co-director of the CCPD and his deputy.
5. The German-Polish Police and Customs Cooperation Centre in Świecko (Poland) and its coordination of the exchange of information between German and Polish police organisations.	Germany	Police officers working at the cooperation centre in Świecko.
6. The Police and Customs Cooperation Centre in Le-Pertus (France) and its coordination of the exchange of information between Spanish and French police organisations.	Spain	Officers from the Spanish Mossos d'Esquadra police force with experience of the centre.
International agencies		
7. The requesting of cross-border information by the Foreign Police of the Czech Republic from INTERPOL.	Czech Republic	Officers from the Czech Republic Foreign Police.
8. MARRI (Migration, Asylum, Refugees Regional Initiative) Regional Centre In Skopje, Republic of Macedonia.	Republic of Macedonia	Employees in the MARRI Regional Centre and an academic expert on Security issues in the region.
9. FRONTEX (European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union).	Romania	Romanian Border Police officers from the FRONTEX National Contact Point.
10. The role of CEPOL (European Police College) in supporting the exchange and development of knowledge and research in the field of policing via training and education for senior police officers at a European level.	UK	Members of CEPOL Secretariat Staff and the UK CEPOL National Contact Point

Table 2. Facilitators of international knowledge sharing between organisations.

	Case Study									
	1	2	3	4	5	6	7	8	9	10
Organisational factors										
Staff experienced				•						
Motivation to share knowledge						•				
Language skills adequate	•									
Effective leadership	•									
Adequate technology	•				•				•	•
Financial resources sufficient	•									
Inter-organisational factors										
Developing good relationships between organisations	•				•	•		•	•	•
Written rules and agreements on how to operate collaborations						•	•		•	
Standardised processes and documentation			•				•			
Flexibility of location		•		•						
Flexibility of working methods		•			•	•				
Inter-country factors										
European and bilateral conventions		•				•			•	
Knowledge characteristics										
Information clear and reliable						•				
Realistic and detailed scenarios of training exercises			•							

Note: 1-6 cover cross-border police collaborations and 7-10 cover international centres or agencies.

Table 3. Barriers to international knowledge sharing between international police organisations.

	1	2	3	4	5	6	7	8	9	10
Organisational factors										
Lack of motivation									•	•
Language problems	•	•	•		•	•	•	•	•	•
Inadequate experience and skills	•								•	
Leadership issues	•		•							
Inadequate technology	•	•	•		•	•				
Lack of financial resources		•			•					
Lack of recognition of the role / importance of the organisation						•				
Inter-organisational factors										
Organisational differences	•	•			•				•	•
Lack of good relationships between organisations								•	•	
Lack of system integration / standardisation						•		•		
Politics	•									
Lack of visibility of international bodies				•	•					
Inter-country factors										
Lack of legal framework for collaborations	•				•		•			
Differences in legal systems					•					
Political differences	•									
Strategic importance differs between countries		•								
Knowledge characteristics										
Legal constraints on what information can be shared		•								

Note: 1-6 cover cross-border police collaborations and 7-10 cover international centres or agencies.

Table 4. Areas for future development to improve international knowledge sharing as identified by each case study.

Topic of Case Study	Areas for future development
1. West-Coast Police, Belgium	<ul style="list-style-type: none"> • Need for a new border safety and security plan to coordinate and integrate the multi-disciplinary partners in the safety and security chain across the border. The plan would untangle some of the currently complexity by creating more clarity with respect to what needs to be shared with whom, and who has access to what kind of knowledge.
2. Joint Investigation Teams In The Netherlands	<ul style="list-style-type: none"> • Need for team leaders and members of JITs, as well as the organisations they work for, to be better at accepting each other's differences and interests and be willing to work together. • In order to avoid ambiguities and false expectations, participant countries will need to agree on: information sharing procedures, the use of special investigative powers, how and where to arrest suspects, the seizure procedure, conducting of interrogations, recording of investigations and evidence, and the celebration of successes or coping with failures. It is also advisable to discuss and record how, where and when the prosecution will take place.
3. Arma dei Carabinieri international training on civilian crisis management	<ul style="list-style-type: none"> • Advance towards harmonised approaches in the delivery of training and promoting a common approach (both at EU level, and as a contribution to wider international harmonisation in collaboration with partners such as the UN and other international / regional organisations). The development and implementation of joint training will help homogenise the level of skills of EU Police forces and their activities.
4. The French-Belgian Police and Customs Cooperation Centre of Tournai (Belgium)	<ul style="list-style-type: none"> • Requirement for a networking of the resources of all CCPDs and some kind of institutional link between them all at the EU level in order to increase international scope.
5. The German-Polish Police and Customs Cooperation Centre of Świecko (Poland)	<ul style="list-style-type: none"> • A need to increase the profile of the centre with different police organisations. • A need for more training in language skills, intercultural understanding and greater legal and forensic knowledge.
6. The French-Spanish Police and Customs Cooperation Centre of Le-Pertus (France)	<ul style="list-style-type: none"> • Need to extend operating hours to 24/7. • More training, best practice exchange, improvement of the physical space, connectivity or transformation into a border emergency coordination centre.

Table 4. Areas for future development to improve international knowledge sharing as identified by each case study (continued).

Topic of Case Study	Areas for future development
7. Knowledge Sharing by the Police of the Czech Republic and INTERPOL	<ul style="list-style-type: none"> • Better interconnection of information systems of individual countries. • A simpler and faster process for transferring a foreigner who commits illegal activity to the home country.
8. MARRI (Migration, Asylum, Refugees Regional Initiative) Centre In Skopje (Republic of Macedonia)	<ul style="list-style-type: none"> • Securing long-term financial investment. MARRI is facing uncertainties in the current financial climate since the EU Member States are responsible for financing the initiative.
9. FRONTEX (Romania)	<ul style="list-style-type: none"> • The strengthening of cooperation with third-party countries that have been identified within joint operations as being problematic areas for the EU • Strengthening the efforts to harmonise EU member states with regard to training standards, equipment and technology used, legislation and data bases.
10. CEPOL: European Police College (UK)	<ul style="list-style-type: none"> • Readdressing of training at an EU level in order to create a systematic approach to training. Developing updated and minimum standards for training across the EU and for officers to be at the same minimum level across all EU countries. • Future adaptations in technology would be extremely important for facilitating the sharing of knowledge. • Securing long-term financial investment. CEPOL is also facing uncertainties in the current financial climate and may have to operate with reduced resources. A question was also raised over a possible merger with Europol and whether there may in the future be one large training centre for the EU, or one large organisation, with training existing as a part of it.