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# ON PUBLICNESS THEORY AND ITS IMPLICATIONS FOR SUPPLY CHAIN INTEGRATION: THE CASE OF CRIMINAL JUSTICE SUPPLY CHAINS

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The literature has extensively discussed whether and how public organizations differ from private ones. Publicness theory argues that the degree of publicness is determined by ownership, funding, goal setting, and control structure of an organization. However, these theoretical ideas have not yet been extended to the interorganizational level. The need for further research is reflected in the sustained debate on the applicability of for-profit management approaches in public contexts and supply chains. Starting from the premise of the dimensional publicness theory, this study focuses on theory elaboration. We focus our empirical study on the criminal justice supply chain, which encompasses the process of bringing a criminal case to court. This chain provides an interesting public case to explore how specific dimensions of publicness affect or limit supply chain integration mechanisms. The results of our series of embedded cases focusing on Dutch criminal justice supply chains show that control structures, embodied in laws and regulations, define the governance of relationships between supply chain partners. In addition to these formalized ties, extensive known for-profit information and operational integration mechanisms can be observed, along with limited relational integration. Surprisingly, although similar integration mechanisms are used as in for-profit contexts, integration serves a different role in several of the relationships investigated: dealing with tensions stemming from the specific goal setting and stakeholders of criminal justice chains. Although our findings specifically relate to criminal justice supply chains, they have important implications for other supply chains using contracts and laws and those being selective in applying supply chain integration in cases of contrasting objectives. Moreover, we provide a stepping-stone for the extension of publicness theory to the interorganizational level.

*Keywords:* case studies; public service supply chains; publicness theory; qualitative data analysis; supply chain integration; not-for-profit organizations; legal and regulatory issues; interorganizational relationships

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## INTRODUCTION

Well-integrated supply chains often realize the delivery of goods ordered online within 24 h. In contrast, many public service supply chains have problems in coordinating their interorganizational deliveries in

such a way that they are responsive and achieve fast and reliable delivery. For example, criminal justice supply chains, consisting of police, public prosecution services, and courts, have long throughput times in many European countries (European Commission, 2018). Such contrasts have stimulated the debate regarding whether and to what extent private managerial practices can and should be applied in public contexts (Boyne, 2002; Osborne, Radnor, & Nasi, 2012; Osborne, Radnor, & Strokosch, 2016). This debate in turn relates to the long-standing discussion on the distinctions between public and private organizations (Boyne, 2002; Bozeman, 1987; Perry & Rainey, 1988; Rainey, Backoff, & Levine, 1976; Scott & Falcone, 1998). Recently, the operations and supply chain management field has joined this debate (Dobrzykowski, 2019; Goldstein & Naor, 2005; Karwan & Markland, 2006; Radnor et al., 2016) and empirical work has commenced. Examples include implementation of lean practices in healthcare (see Radnor & Osborne, 2013; Radnor & Walley, 2010) and the use of for-profit integration mechanisms and practices in healthcare and criminal justice (Drupsteen, van der Vaart & van Donk, 2013; López & Zúñiga, 2014; Pekkanen & Niemi, 2013).

However, Dobrzykowski (2019) recently concluded that the success of adopting for-profit integration practices in a public context cannot be taken for granted, which is in line with arguments of dimensional publicness theory (Bozeman, 1987, 2013; Bozeman & Bretschneider, 1994; Bozeman & Moulton, 2011). In essence, this theory submits that the public-private distinction is not a simple dichotomy, but rather depends on four dimensions: ownership, funding, goal setting, and control, with at the extremes pure "private" and pure "public" organizations. Consequently, management practices should be contingent on the level of publicness of the organization.

Surprisingly, dimensional publicness theory has only been used for understanding the use of management practices within individual organizations. Its application to the management of interorganizational relationships and supply chains has thus far been ignored, even though relationships with a public nature are occurring more, while turning out to be hard to manage (Noordegraaf, 2016; Osborne et al., 2012; Voets, Van Dooren, & De Rynck, 2008). As a response, the so-called New Public Management literature (Andrews, Boyne, & Walker, 2011; Greuning, 2001; Rosenberg Hansen & Ferlie, 2016) strongly advocates that public services should implement the operational practices and supply chain management tools used in for-profit contexts. Given the basic premise of dimensional publicness theory, this recommendation is theoretically debatable, leaving the questions of whether and to what extent existing for-profit tools can be used

unanswered. The criminal justice supply chain as a typical example of a pure public service supply chain provides an excellent setting to study such questions.

The criminal justice supply chain is government-based, aims to achieve justice and equity both for the public at large and for individuals, that is, suspects, victims, and witnesses, and is highly regulated by laws and procedures. In this supply chain, the police, the public prosecution service, and the court jointly deliver an information product, the content of a criminal case file. Criminal justice supply chains have started to use supply chain integration, while at the same time remaining strongly regulated, accountable, and governed by public and political authority, due to their pure public setting. The above raises important, interesting, and so far unanswered questions: Is supply chain integration as understood in a private setting applicable in a pure public context such as criminal justice? Is supply chain integration used for similar purposes in the two settings? And, is supply chain integration shaped by the specific interorganizational characteristics of criminal justice supply chains, and if so, how? These are the questions the present research aims to answer. Answering these questions offers a stepping-stone toward understanding the influence of dimensions of publicness in a supply chain. Specifically, for the context of criminal justice, it serves as a start to understand how integration influences the performance in terms of throughput, speed, and cost.

Empirically, we rely on a series of embedded case studies across different regions in the Netherlands, which involved collecting 49 interviews, numerous documents, and field visits. We aim to elaborate publicness theory by moving from an organizational perspective (Bozeman, 1987, 2013; Bozeman & Moulton, 2011; Scott & Falcone, 1998) toward a supply chain perspective. We do this by using preexisting conceptual ideas (Fisher & Aguinis, 2017) from publicness theory and from the literature on supply chain integration and the specific criminal justice context. Dimensions of publicness are known to affect management practices (e.g., Bozeman & Bretschneider, 1994), and here, we specifically consider supply chain integration as the management practice of interest. Supply chain integration is conceptualized using existing for-profit supply chain integration insights as a starting point for data collection and analysis. At the same time, we have remained open to finding other, context-specific forms of integration and explanations of the nature and role of integration induced by interorganizational dimensions of publicness. Empirically, we concentrate on the process used to bring criminal cases to court. This process encompasses all interactions between the police, the public prosecution service, and the court, which comprise our focal supply chain. In bringing a criminal case to court,

cooperation between the public partners is particularly important. The public prosecution service is acting as the focal actor. As such, we exclude the court process, that is, the execution of the trial, in which barristers and lawyers have an important role, and subsequent functions such as sentencing and imprisonment.

In this study, we extend publicness theory to its application at the interorganizational level. This is an important first step toward a supply chain publicness theory and extends supply chain management theory. Accordingly, our study makes several theoretical contributions. First, to a large degree, dimensions of publicness shape the interorganizational interactions between public organizations. These are complemented by known for-profit supply chain integration mechanisms as conceptualized by Leuschner, Rogers and Charvet (2013), including information and operational integration, but excluding relational integration. These insights extend our understanding of the application of integration mechanisms in contexts other than pure private (e.g., Flynn, Huo & Zhao, 2010; Leuschner et al., 2013). Second, we contribute to the discussion on the interplay of relational and contractual governance mechanisms (e.g., Cao & Lumineau, 2015) by showing that the dimensions of publicness appear to influence their balance. Third, we detect a novel role of supply chain integration mechanisms in public settings. They mitigate and maintain tensions between supply chain partners stemming from, for example, opposing goal settings and control structures. This insight offers an alternative for suppressing, compromising, or transcending as a way to deal with tensions in and across organizations (e.g., Hargrave & Ven de Ven, 2017; Matthews et al., 2016; Smith & Lewis, 2011; Xiao et al., 2019). Finally, publicness theory suggests that organizations and supply chains are neither pure public nor pure private, but have characteristics of both (e.g., Bozeman, 1987). Our paper enables us to theorize on how supply chain integration might be hindered or facilitated in supply chains considering their publicness. Consequently, the findings add to recent calls for research into supply chain management with public organizations as a focal actor (Dobrzykowski, 2019; Gualandris & Klassen, 2018; Harland et al., 2019; Johnson, Dooley, Hyatt, & Hutson, 2018; Pagell, Fugate, & Flynn, 2018; Pullman, Longoni & Luzzini, 2018; Rodriguez, Giménez Thomson, Arenas, & Pagell, 2016).

## **THEORETICAL BACKGROUND AND CONTEXTUAL SETTING**

### **Publicness Theory as a Theoretical Lens**

Research regarding the nature of public organizations and their differences to private organizations has

followed a variety of lines (Scott & Falcone, 1998). A first line, following early conceptions of administration, considered managerial principles to be generically applicable in both public and private settings (Murray, 1975). Following this idea, the New Public Management literature (Andrews et al., 2011; Greuning, 2001; Rosenberg Hansen & Ferlie, 2016) has advocated the application of for-profit managerial principles and tools in public settings. These are often seen as a remedy for the perceived lack of efficiency and accountability in governmental bureaucratic organizations. Opposite to this line of inquiry, a second line of research (Niskanen, 1971; Rainey et al., 1976) stresses the differences between the two settings. These are mostly attributed to differences in ownership (privately owned by shareholders or publicly and collectively owned by societies) and control (by the market or by political forces).

Dimensional publicness theory, which we follow in this paper, synthesizes the two sides of this debate. Based on the conceptual and empirical work of Bozeman (Bozeman, 1987, 2013; Bozeman & Bretschneider, 1994; Bozeman & Moulton, 2011), this theory suggests that many organizations have characteristics of both pure private and public organizations. Accordingly, the level of publicness of organizations is reflected by four dimensions, rather than simply being either fully public or private. Based on the current development of this theory (Bozeman, 1987; Goldstein & Naor, 2005; Perry & Rainey, 1988), the four dimensions of publicness are as follows: (1) ownership, referring to the extent to which an organization is privately owned or owned by the government (Bozeman, 1987; Rainey et al., 1976); (2) funding, referring to the extent to which organizations are funded by taxation or by customer fees (Bozeman, 1987; Niskanen, 1971); (3) goal setting, referring to the extent to which organizations aim to achieve efficiency and effectiveness, or equity in organizational outcomes (Berman, 2008; Bozeman, 1987); and (4) control, referring to the level to which organizations are accountable to political bodies and the public, and are subject to political oversight and public visibility (Bozeman, 1987, 2013). Consequently, organizations can be public in different ways. For example, they might be privately owned, but funded by taxation, or publicly owned and funded through customer fees.

The four dimensions of publicness influence the applicability of managerial practices (Bozeman & Bretschneider, 1994). Usually, organizations labeled as public are not uniform in these dimensions, and this makes it debatable whether management techniques used in private settings are applicable in all public settings (Boyne, 2002; Osborne et al., 2012, 2016). Therefore, it is necessary to understand the influence of each dimension on the applicability of for-profit managerial practices. To this end, examining

the domain of healthcare operations, Goldstein and Naor (2005) empirically demonstrate that differences in the dimensions of ownership, funding, goal setting, and control determine the appropriate level and effectiveness of quality management practices.

So far, publicness theory has mainly been applied and studied within single organizations. However, organizations in the public context are increasingly working together in delivering public services (Noordegraaf, 2016; Osborne et al., 2012; Voets, Van Dooren, & De Rynck, 2008), and hence, they are seeking performance improvements beyond organizational borders. Publicness theory seems an appropriate lens to study this level of operations. Before transforming the organizational dimensions of publicness to interorganizational criminal justice characteristics, at the supply chain level, we first describe the specific, pure public, criminal justice supply chain context of this study.

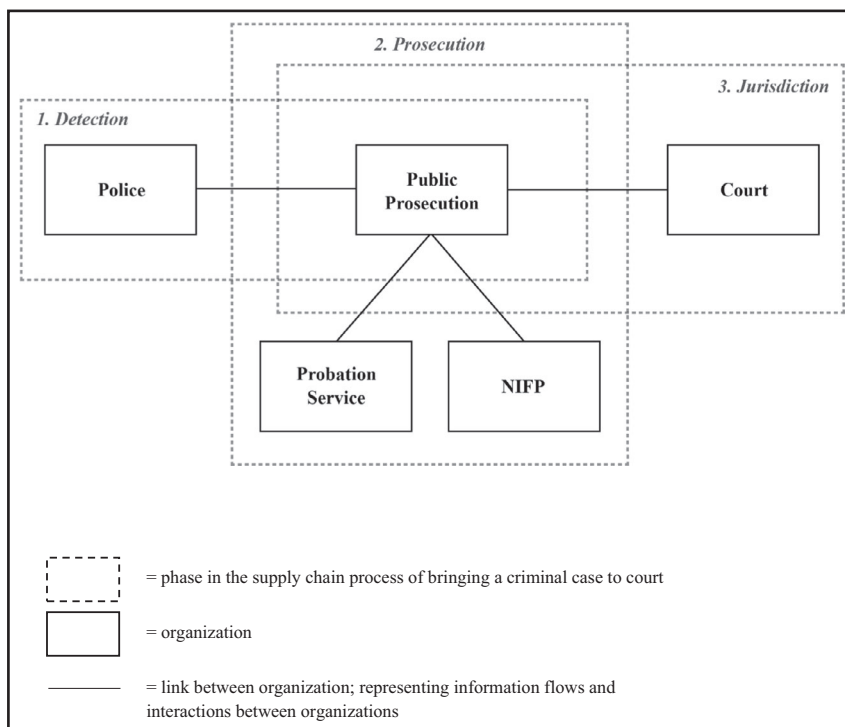
### The Criminal Justice Supply Chain

Although the aim and tasks of the criminal justice supply chain are rather similar in many countries across the world, the names, division of labor, and expertise used in the following description are partly specific to the Dutch criminal justice system. The

main organizations in the Dutch criminal justice supply chain are the public police force (hereafter: police), public prosecution service (PPS), the court and expert organizations such as the probation service, and organizations for forensic psychologists and psychiatrists (NIFP) (see Figure 1). These organizations contribute to the criminal justice supply chain, but have additional tasks and purposes, such as specific responsibilities toward suspects, victims, witnesses, and the public at large, and individually manage their resources (i.e., their budget and operational capacity). Together, they deliver the services of deterring and mitigating crime, and providing sanctions to those who violate the law (Callender, 2011; De Blok et al., 2015). The core of the criminal justice process is the processing of information related to a crime and associated suspects, victims, and witnesses. The final outcome is a verdict that ultimately needs to be executed.

A criminal case file is built in three sequential steps, detection, prosecution and jurisdiction, and contents of information about the crime and the persons involved. Each of the steps involves interorganizational interactions and relationships, as depicted in Figure 1. The police and the PPS work together, but as separate organizations, in the detection of criminal cases. The police supply relevant criminal case content

**FIGURE 1**  
Representation of the Dutch Criminal Justice Supply Chain



to the PPS. The PPS steers the detection-related activities of the police, that is, the actions to be taken to solve a criminal case. In addition, the PPS formally prosecutes the suspect based on the criminal case content provided, complemented with advisory reports supplied by expert organizations, such as the probation service and NIFP, before the trial. Both the probation service and NIFP, specifically their psychiatrists and psychologists, have contact with the suspect, relatives, and victims before the trial to investigate the accountability of the suspect, the likelihood of recurrence, and treatments that could decrease that likelihood. This results in an advice to the PPS regarding the circumstances that should be taken into account when determining the appropriate punishment. Finally, the PPS delivers the integrated criminal case file to the court. This file is the basis for the verdict the court will reach during the trial.

The structured and linear representation given above is, as New (2004) has commented for supply chains in general, somewhat simplistic. Each of the organizations involved is also part of other supply chains and is connected to other public and nonpublic institutions related to justice and safety. The police, for example, are not only a part of the criminal justice supply chain in a crime detection role but also a part of a network of organizations focused on regional crime prevention, that is, maintaining public order and safety, involving local government organizations and the PPS. Moreover, in each depicted interorganizational relationship multiple criminal cases will be active at any given time, with, at times, several people involved from each organization. As such, the organizations are connected through a multitude of interactions and linked processes between (teams of) professionals.

### **Characteristics of Interorganizational Publicness in a Criminal Justice Context**

Combining the previously introduced dimensions of publicness with the criminal justice context, this section identifies three main interorganizational criminal justice characteristics. These characteristics show the pure public nature of criminal justice supply chains and serve as a stepping-stone toward understanding the use of supply chain integration in this context.

First, criminal justice organizations are owned by the public and funded through taxation. Accordingly, the criminal justice supply chain serves the general public (Bozeman, 1987; Niskanen, 1971; Rainey et al., 1976). The main customer, the general public, is represented by the PPS and demands safety and justice. However, the general public has a distant role and is not directly "treated or served" in the process. In contrast, a person involved in or connected with a crime may also be considered as a "customer."

Accordingly, the criminal justice supply chain serves multiple distinct individual customers, including suspects, witnesses, and victims. Each of these customers has its own specific interests, sometimes in conflict with the interests of other customers. Their level of customer involvement is rather different from most other service supply chains (Sampson & Spring, 2012). For example, accused persons are participating in the process involuntary and have the right not to cooperate. Often, because the offender or suspect is unknown at the start of an investigation, their cooperation is impossible. Here, the nature of control and funding from taxation, together with the context of the process, lead to the existence of multiple stakeholders in the supply chain.

Second, similar to other public services (Boyne, 2002; Laing, 2003), political rather than economic objectives dominate in criminal justice supply chains (Callender, 2011). Traditionally, criminal justice supply chains and organizations therein have been evaluated in terms of equity, including legitimacy, equality, fairness, reliability, safety, and due process (Hood, 1995; Kuipers et al., 2014). As a result of New Public Management reforms (Dunleavy et al., 2006; Karwan & Markland, 2006; Kuipers et al., 2014), criminal justice supply chains experience both political and economic pressure to both serve justice and achieve efficiency, two partly contradictory objectives (McPherson & Sauder, 2013; Reay & Hinings, 2007). Moreover, objectives and budgets are often set at individual organizational levels. Although making trade-offs in efficiency and effectiveness objectives is not new to supply chains in general, dealing with justice-related, political and economic objectives makes managing and integrating criminal justice supply chains more complex (Callender, 2011). Hence, the criminal justice supply chain faces complex political goal setting considerations.

Third, the relationships between criminal justice organizations are set by law. Criminal justice organizations are subject to the constitutional principle of separation of power ("trias politica"). The separation of power requires institutions to work independently; judges exercise judiciary power, whereas the PPS and police exercise executive power. Additionally, the tasks, procedures, and responsibilities of each of the criminal justice organizations are specified by laws and regulations. Consequently, the law determines with whom, in which activities, and to what extent the various criminal justice organizations may or may not collaborate (Dandurand, 2014). In other words, criminal justice organizations are part of a forced supply chain with regulated procedures in a law-based environment. The third characteristic of the criminal justice supply chain is thus its specific control structure, which stems from laws and regulations that

govern the relationships and the actions of the supply chain partners.

In summary, starting from the established dimensions of publicness, we derive three characteristics of the criminal justice supply chain: (1) the multiple stakeholders who represent part of the public ownership and funding structure, and their interests; (2) goal setting based on justice-related, political and economic objectives; and (3) the control structure determined by regulations and laws.

### **Research Framework: Supply Chain Integration in the Criminal Justice Context**

The organizations in the criminal justice supply chain do not have a choice in whom to work with as determined by law. However, laws and regulations do not comprehensively govern the processes of the various criminal justice organizations. As a result, the organizations involved have started to apply supply chain integration practices borrowed from for-profit chains (European Commission, 2018). Nevertheless, the criminal justice characteristics we have identified might limit the options for integration, the effectiveness of integration mechanisms, or the ways these mechanisms can be employed. Moreover, the characteristics might influence to what extent integration enables the supply chain to achieve specific performance objectives. In exploring our main questions, we start from the well-known conceptualization of integration from the for-profit setting. We proceed by exploring whether specific interorganizational criminal justice characteristics, derived from the dimensions of publicness, influence the supply chain integration mechanisms used or imply specific not yet known types of integration.

Usually, supply chain management and integration involve breaking down barriers to interaction and collaboration between organizations (Flynn et al., 2010; Frohlich & Westbrook, 2001; Kache & Seuring, 2014; Leuschner et al., 2013; Pagell, 2004; Zhao et al., 2011). We define supply chain management as “the management of information, processes, capacity, service performance and funds from the earliest supplier to the ultimate customer” (Ellram, Tate, & Billington, 2004, p. 25) and supply chain integration as “the scope and strength of linkages in supply chain processes across organizations” (Leuschner et al., 2013, p. 34). We conceptualize supply chain integration following the well-accepted synthesis of Leuschner et al. (2013), who distinguish three dimensions of integration, information integration, operational integration, and relational integration. This synthesis is based on the work of Lee (2000), Saeed, Malhotra, and Grover (2005), Ireland and Webb (2007), Van der Vaart and Van Donk (2008), Kim and Lee (2010), and Olorunniwo and Li (2011). Based on Leuschner et al.

(2013), we define information integration as the coordination of information transfer, collaborative communication, and supporting technology aimed at sharing data and information. Similarly, operational integration is defined as joint activity development, joint work processes, and coordinated decision making. We define relational integration as strategic connections characterized by trust, commitment, and long-term orientation. We focus relational integration on attitudes, going beyond activities.

We empirically explore which integration mechanisms as conceptualized by Leuschner et al. (2013) are used, and for which purposes. Additionally, we investigate the existence of additional or alternative supply chain integration mechanisms and practices in the criminal justice supply chain. Finally, we seek to understand how these integration mechanisms are shaped by the specific interorganizational characteristics of criminal justice supply chains, and if so, how?

### **METHODOLOGY**

The current study aims to elaborate publicness theory from an organizational level to a supply chain level using the criminal justice supply chain as an empirical context. Theory elaboration, based on Fisher and Aguinis (2017, p. 441), is understood as “the process of conceptualizing and executing empirical research using preexisting conceptual ideas or a preliminary model as a basis for developing new theoretical insights by contrasting, specifying, or structuring theoretical constructs and relations to account for and explain empirical observations.” Specifically, we contrasted the organizational-level publicness theory with an empirical interorganizational public setting, thus “contrasting different levels of analysis” (Fisher & Aguinis, 2017). A case study in the specific and unique empirical context of criminal justice supply chains, as an example of a pure service chain, fitted particularly well with our aim of theory elaboration (Barratt, Choi, & Li, 2011; Fisher & Aguinis, 2017; Ketokivi & Choi, 2014; Voss, Johnson, & Godsell, 2016). More specifically, our research approach follows the logic of an embedded case (Yin, 2009) to enable to investigate the relationships between criminal justice organizations in multiple regions within one national context.

### **Research Setting**

Because a criminal justice supply chain is rooted in its country's specific institutional context, we restricted our empirical investigation to a single country: the Netherlands. The Netherlands is an appropriate setting as criminal justice supply chains are organized regionally, which allows us to investigate multiple criminal justice supply chains, facilitating generalization to

some degree. In the Netherlands, the criminal justice organizations, that is, the police, the PPS, the probation service, the National Institute of Forensic Psychologists and Psychiatrists (NIFP), and the court system, are all national, government-owned organizations (see Figure 1). In each of the ten regions, these organizations work with government-based budgets, are financed through taxes, and form the backbone of the process of bringing a criminal case to court. Regions differ not only in size, the number of inhabitants, and the type and degree of criminality, but are also allowed to develop and implement their own supply chain integration policies. Of course, the freedom is restricted by control mechanisms specified by the laws, regulations, and procedures of the national system and embedded in similar institutional complexities, related to performance and budgetary pressures.

Within the country, we choose high-impact crime (e.g., burglary, robbery, and violence) as the research context. This context is appropriate as for these crimes, the same four criminal justice organizations, depicted in Figure 1, always work together toward one end-product, the criminal case. In addition, here the adoption of integrative practices seems logical and has been advocated by governments and by managers of criminal justice organizations (European Commission, 2018), because the complexity of the process, and the societal impact of this kind of crime, makes throughput times hard to manage and increase the risks of inconsistencies in the process of building a criminal case.

### Case Selection

Within the above-elaborated context, we selected three regions. Our selection was based on involvement in supply chainwide projects to improve

alignment, following replication logic, but also looking for potential impact of regional settings (see Table 1). Our approach facilitated information saturation as additional data gathering within the regions did not result in additional insights. No additional insights resulted from analysis of the data of the third region; hence, theoretical saturation was reached. Consequently, adding more regions was thus deemed unlikely to provide new information or insight.

The above resulted in data on four relationships in three regions. However, the analysis of the data collected (described in the following sections) showed no evidence of any effect of regional contextual differences on type, level, or purpose of integration. In addition, the relationship between the PPS and the probation services and the one between the PPS and the NIFP were also mostly similar in nature across the regions. Therefore, we left the regional element out and aggregated the expert organizations to focus our further analysis on three criminal justice chain relationships as the unit of analysis: (1) the PPS and the police relationship; (2) the PPS and the expert organization (i.e., the probation service and NIFP) relationship; and (3) the PPS and the court relationship. Hence, we consider these as a series of three embedded cases.

### Data Collection

Data were collected between February 2016 and May 2017. Data collection included multiple sources of evidence, including semi-structured interviews, archival documents, field visits, and observations, in order to facilitate a process of triangulation and thus mitigate bias and enhance reliability and validity (Eisenhardt, 1989; Voss, Tsikriktsis, & Frohlich, 2002; Yin, 2009). The core of the data collection process consisted of 49 semi-structured interviews collected

TABLE 1

#### Details of National and Regional Settings

Subject	National	Region A	Region B	Region C
Municipalities	393 <sup>a</sup>	28 <sup>b</sup>	31 <sup>b</sup>	32 <sup>b</sup>
Citizens	16,900,726 <sup>a</sup>	1,836,621 <sup>a</sup>	1,117,941 <sup>a</sup>	1,763,390
HIC cases:citizens ratio	1:195	1:177	1:218	1:180
HIC cases detected	86,475 <sup>a</sup> (100 percent)	10,355 <sup>a</sup> (100 percent)	5,135 <sup>a</sup> (100 percent)	9,770 <sup>a</sup> (100 percent)
HIC cases prosecuted	63,360 <sup>a</sup> (73 percent)	7,525 <sup>a</sup> (73 percent)	3,560 <sup>a</sup> (69 percent)	7,460 <sup>a</sup> (76 percent)
HIC cases on trial	59,410 <sup>a</sup> (69 percent)	7,015 <sup>a</sup> (68 percent)	3,380 <sup>a</sup> (66 percent)	7,205 <sup>a</sup> (74 percent)

HIC = High-Impact Crime.

<sup>a</sup>Numbers are for the year 2015, based on data collected by the Dutch Central Office of Statistics

<sup>b</sup>Numbers are based on year reports published online by the Dutch Public Prosecution Service and the Dutch courts.



TABLE 2

## Overview of Interviewees per Organization and Region

Organization	Interview round 1			Interview round 2		
	Function	Reference	Total	Function	Reference	Total
Police	1 Project leader	PO.N1	1	2 Police team coordinators	PO.A1; PO.A2	5
				3 Crime investigation coordinators	PO.A3; PO.B1; PO.B2	
Public Prosecution Service	1 Project leader	PP.N2	3	5 Team managers <sup>a</sup>	PP.A4; PP.B3; PP.C1; PP.C2; PP.C3	26
	2 Policy officers	PP.N3; PP.N4		10 Public prosecutors	PP.A5; PP.A6; PP.A7; PP.A8; PP.B4; PP.B5; PP.B6; PP.C4; PP.C5; PP.C6	
				4 Public prosecutor assistants <sup>b</sup>	PP.A9; PP.A10; PP.B10; PP.C8	
				4 Senior public prosecutor assistant <sup>b</sup>	PP.B7; PP.B8; PP.B9; PP.C7	
				3 Administrative assistants <sup>c</sup>	PP.B11; PP.B12; PP.C9	
Probation Service	1 Project leader and policy officer	PS.N5	1	5 Advisory team coordinators	PS.A11; PS.A12; PS.A13; PS.B13; PS.C10; PS.C11	7
				1 Administrative staff	PS.C12	
NIFP	1 Project leader and policy officer	NI.N6	1	1 Administration coordinator	NI.A14	5
				1 Report process coordinator	NI.A15	
				1 Team coordinator	NI.B14	
				1 Report process coordinator	NI.C13	
				1 Psychologist	NI.B15	
Total interviews			6			43

A = region A; B = region B; C = region C; N = national; NI = NIFP; PO = police; PP = public prosecution service; PS = probation service.

<sup>a</sup>Team managers are senior public prosecutors that are responsible for the coordination of 10–20 public prosecutors and are involved in the prosecution of their own criminal cases.

<sup>b</sup>Public prosecutor assistants support the public prosecutors with collecting evidence on the criminal case, preparing the criminal case for trial and having contact with the police.

<sup>c</sup>Administrative assistants support the public prosecutors in administrative tasks such as inputting case details into their information systems and monitoring the delivery dates of criminal case information to be gathered from the police, probation service, and NIFP.

from organizations that are part of the three selected regional supply chains (Table 2). The interviewees were carefully selected based on their experience and

their ability to provide input on the integration between the organization they work for and the organizations they work with. We conducted a first round

**TABLE 3**  
**Overview of Documents**

Subject	Type of document	Year	Reference
Criminal justice supply chain	National law	2017	D.1
Criminal justice supply chain	National regulations	2014	D.2
Criminal justice supply chain	Policy	2015	D.3
Criminal justice supply chain	Evaluation research report	2012	D.4
Criminal justice supply chain	Evaluation research report	2013	D.5
Criminal justice supply chain	Evaluation research report	2015	D.6
Public prosecution service	Evaluation research report	2014	D.7
Probation service	Policy	2013	D.8
Police and public prosecution service	Policy	2015	D.9
Public prosecution service and court	Policy	2014	D.10

of interviews at the national level with employees involved in either improvement programs concerning interorganizational alignment or policymaking. This provided a general understanding of the institutional context, and specifically, the way criminal justice organizations are working together; the general constraints in aligning interorganizational processes; and the national agreements that are established to support planning and management of the supply chain. Furthermore, these interviews confirmed the role of the PPS as the focal actor in the supply chain, overseeing the processes of the whole criminal justice supply chain (Figure 1). Finally, in addition to gathering data, this round of interviews served as a prestudy to test and adapt the interview protocol. For the main data gathering process, we conducted interviews within the three regional supply chains.

The face-to-face interviews (listed in Table 2) were organized on site at employees' workplaces and generally took place individually. Interviews lasted between 40 and 90 min, and on average 55 min. Prior to each interview, the participant was informed of the purpose and objectives of the study and how their confidentiality would be protected. The interviews followed an interview protocol (see Appendix A) to facilitate data comparison while at the same enhancing the internal and construct validity of the study (Voss et al., 2002; Yin, 2009). The interview protocol not only included questions on information, operational, and relational integration (Leuschner et al., 2013), but also allowed for discussion of context-specific use of main integration mechanisms and the identification of other context-specific integration mechanisms. The protocol contained open-ended questions and probes to encourage detailed responses. Questions focused on the activities, the types of information shared, the interactions, the types of relationships, and the related drivers, enablers, and barriers

involved in the process of bringing a criminal case to court. Most interviews were conducted by two interviewees: one leading the interview by asking questions and probing to uncover insightful information, and the other taking notes, ensuring the interview was recorded, and asking additional questions if necessary. Interviews were recorded and transcribed, resulting in 365 pages (single-spaced, excluding field notes and memos). In order to verify content and accuracy of the data to ensure reliability, the transcribed interviews were sent to the interviewees for approval and, if needed, were adapted based on comments and clarifications provided.

The interviews were complemented by documents describing the organization of the criminal justice supply chain at the national and regional levels, including evaluation research reports, management reports, policy documents, interorganizational agreements, procedures, and national laws (Table 3). These documents were either publicly available or provided by interviewees. Observations of multiple types of court sessions, including suspect hearings, witness hearings, procedural trials and verdict trials, and field visits, were used to better understand how different parties interact and how the criminal case information is gathered and used by different parties.

### Data Analysis

Our data analysis followed the suggestion of Fisher and Aguinis (2017) to use preexisting conceptual ideas, in our case, those from publicness theory, literature on supply chain integration, and the specific criminal justice context. The first step of our analysis involved data reduction and data structuring to obtain an overview of all the integration mechanisms and interorganizational criminal justice characteristics present. Doing so ensured that coded words, sentences, or paragraphs from interviews and documents were

TABLE 4

## Excerpt of Coding on Integration Mechanisms

First-order codes	Integration mechanisms	Type of integration
"We receive the advice reports provided by the NIFP and probation service via a digital system [...] we transfer the report to the court as part of the criminal case." (PP.B7; PPS-EXP)	Content information transfer	Information integration
"With the probation service and the NIFP we have no direct contact, we only transfer a request for advice and receive the advice when it is ready." (PP.C7; PPS-EXP)		
"If we do not yet know who the suspect is then we have contact with the police to get information on what is already known on the suspect." (PP.A6; PPS-POL)	Information sharing on content	
"We regularly visit the police to discuss a criminal case and get informed about the status quo of the criminal case." (PP.B7; PPS-POL)	<ul style="list-style-type: none"> <li>• Case content</li> <li>• Status quo case content</li> <li>• Feedback on case content completeness</li> </ul>	
"When a criminal case just has started we contact the police multiple times a day to discuss the detection of the criminal case." (PP.B5; PPS-POL)		
"I have contact with the police multiple times a day to exchange information. We do not exchange information at fixed times as it is case dependent when and how much information is exchanged." (PP.C7; PPS-POL)		
"We do not have contact at fixed times. It is dependent on the criminal case when and how many times we have to discuss the criminal case." (PP.B7; PPS-POL)		
"The administrative staff puts the final court date in the system, which is available then to the probation service and NIFP." (PP.B7; PPS-EXP)	Planning information transfer	
"Several times during the process we need to know how far the police is in its investigations and if they are on track." (PP.B7; PPS-POL)	Information sharing on planning	
"In case delivery dates seem to be exceeded [by the police, probation service or NIFP] the public prosecution service gets in contact with them." (PP.B7; PPS-POL, POL-EXP)	<ul style="list-style-type: none"> <li>• Criminal case action plan</li> <li>• Court date (end date) criminal case</li> <li>• Status quo timeliness criminal case</li> <li>• Case planning</li> <li>• Capacity</li> </ul>	
"On a daily basis I have contact with the court on the planning of cases and to adjust the planning when necessary." (PP.B9; PPS-COU)		
"We always know how much capacity the Police still has available." (PP.B4; PPS-POL)		
"One of our colleagues has regularly contact with the police on the use of capacity to detect criminal cases. This capacity is then to be aligned with the requirements of the public prosecution service." (PP.C6; PPS-POL)		

(continued)

TABLE 4 (continued)

First-order codes	Integration mechanisms	Type of integration
<p>"We [the PP] do almost everything together with the police, especially when investigating major criminal cases." (PP.A7; PPS-POL)</p> <p>"When it is clear a criminal case will be brought to court, we will decide together with the police what investigations need to be done by the police, how these investigations will be performed and when." (PP.A6; PPS-POL)</p> <p>"We sit together with the police to discuss the status quo of the criminal case, what investigations should still be performed, what are the additional investigation possibilities." (PP.C7; PPS-POL)</p>	<p>Joint decision making on content</p>	<p>Operational integration</p>
<p>"We have continuously contact about the planning and progress of the case and take many decisions." (PP.A7; PPS-POL)</p> <p>"Together with the police we make agreements on the investigations they have to do, we discuss the timeline according to which they have to do the investigations." (PO.C1; PPS-POL)</p> <p>"There are limits to the capacity of the police, so together we discuss to what extent we investigate the case, depending on the available capacity." (PP.C7; PPS-POL)</p> <p>"There is no uniform way of establishing and capturing the planning agreements with the police, every public prosecutor does that in his or her own way." (PP.A5; PPS-POL)</p>	<p>Joint decision making on planning</p> <ul style="list-style-type: none"> <li>• Criminal case action plan</li> <li>• Capacity</li> </ul>	
<p>"The 7-week meeting ensures that the public prosecution service has set controls on the timeliness of the criminal case [...] to prevent a criminal case going to trial for multiple times." (PP.B4; PPS-POL, POL-EXP)</p> <p>"During the so-called 7-week meeting, the public prosecution service discusses the status and progress of all cases that will go to trial within seven weeks." (PP.B9; PPS-POL, POL-EXP)</p> <p>"In case we did not receive a document in time we get into contact with the police. We expect they get in contact with us as soon as they know they will not make the deadline." (PP.B9; PPS-POL)</p> <p>"We have supporting staff that keep contact with the probation service and the NIFP on the timeliness of cases. They monitor the deadlines of the advisory reports and whether we will receive the report in time." (PP.C8; POL-EXP)</p>	<p>Joint monitoring of timeliness</p>	
<p>"Within the joint planning team [of the PP and the court] we work as one integrated whole; there is hardly any distinction between the public prosecution service and the court." (PP.B10; PPS-COU)</p>	<p>Joint planning</p>	

(continued)

TABLE 4 (continued)

First-order codes	Integration mechanisms	Type of integration
“We developed a partly shared administration of the public prosecution service and the court, while maintaining the legal responsibilities of both organizations.” (D.10; PPS-COU)		
“We have public prosecutor assistants that go to the police to sit together ensuring improved quality in the process of investigating and capturing the information in a criminal case.” (PP.B4; PPS-POL)	Joint problem solving	Relational integration
“I have contact with the police multiple times a month to discuss what goes right and what goes wrong and what solutions would solve the problems.” (PP.C1; PPS-POL)		

PPS-COU = PPS–court relationship; PPS-EXP = PPS–expert organization relationship; PPS-POL = PPS–police relationship.

clearly linked to the aim of the research (Miles & Huberman, 1994; Voss et al., 2002). We reduced the raw data from interviews and documents by classifying the raw data into first-order codes using descriptive coding. The data structuring process entailed putting similarly coded passages together and summarizing the basic topics. We identified whether and, if so, how the interorganizational criminal justice characteristics, derived from the dimensions of publicness as explained in the theory section, are present in the criminal justice supply chains. We also searched for integration mechanisms, based on Leuschner et al. (2013), to identify whether and, if so, how these have been applied between the criminal justice organizations. In this process, we left room for finding additional new criminal justice characteristics and integration mechanisms. This resulted in second-order categories describing the integration mechanisms that are present (Table 4) and factors that define interorganizational activities (Table 5). As a final step in coding, we related the second-order categories to the third-order themes regarding types of integration (Table 4) and interorganizational criminal justice characteristics (Table 5).

In the second step of our data analysis process, we aimed to better understand differences in types, level, and purpose of integration induced by either regional differences or interorganizational criminal justice characteristics. Our analysis did not detect evidence for regional effects on types, levels, or purposes of integration. Further, our analysis showed that the probation service and NIFP, in their roles as expert organizations, have similar positions in the criminal justice supply chain (see Figure 1) that result in similar interactions with the PPS. The second step of our analysis resulted in the choice to further analyze and understand the differences between three

relationships: (1) between the PPS and the police; (2) between the PPS and the expert organizations (i.e., the probation service and NIFP); and (3) between the PPS and the court. We sought explanations for differences in integration mechanisms across these three relationships by juxtaposing the theory-based interorganizational criminal justice characteristics, that is, stakeholders, goal setting, and control structures determined by laws and regulations, and integration for each type of relationship. As a result, we identified how interorganizational criminal justice characteristics enable and obstruct integration, as well as how tensions originating from the interorganizational criminal justice characteristics are managed through integration. Linking the characteristics to the application of supply chain integration in the specific context of criminal justice allowed us to elaborate the understanding of publicness theory beyond individual organizations.

## RESULTS

### Interorganizational Criminal Justice Characteristics and Integration across the Chain

Across the entire supply chain, we find that control structures, for example, the legal authority underpinning the criminal justice organizations and their tasks and responsibilities, play an important role in defining the interactions between criminal justice organizations. These control structures, supported by laws, national agreements, and working procedures, shape the need for integration in all relationships within the supply chain. More specifically, criminal justice laws provide detailed descriptions of the dependencies between and individual responsibilities of the different organizations in jointly building a criminal case. This includes many related procedural rules and

TABLE 5

Excerpt of Coding on Interorganizational Criminal Justice Characteristics

First-order codes	Factors defining interorganizational interactions	Interorganizational Criminal Justice Characteristics
<p>"Within a criminal case a lot of information is about people. We are not allowed to share this information with everyone. National covenants are introduced describing what information should be in a criminal case and should be shared with whom." (PP.C1; PPS-POL, PPS-EXP, PPS-COU)</p>	<p>Case content set by law and integrative procedures</p>	<p>Control structure</p>
<p>"To write official reports in a consistent way, the police make use of a standard form based on a list of compliance criteria." (PP.C8; PPS-POL)</p>		
<p>"With regard to the interrogation of suspects, each police office should use a standard interrogation plan, describing the way in which a hearing should be prepared and also the way in which interrogation should be conducted." (D.4; PPS-POL)</p>		
<p>"The national criminal proceeding regulations set uniformity in the way criminal cases are handled by the courts and the public prosecution service." (D.6; PPS-COU)</p>		
<p>"The probation service and the NIFP have to deliver according to the national set delivery terms. These terms are fixed. I do not put them up for discussion for each single criminal case." (PP.A6; PPS-EXP)</p>	<p>Case planning set by law and integrative procedures</p>	
<p>"The probation service and NIFP have to work according to pre-set terms." (PP.B7; PPS-EXP)</p>		
<p>"The law forces us to find a way in how to deal with a criminal case in terms of content and planning. There we have to look for possibilities within the boundaries of law."(PP.C1; PPS-POL, PPS-EXP, PPS-COU)</p>		
<p>"The probation service as well as the NIFP has to plan its advices taking into account yearly allocated budgets." (PP.C7; PPS-EXP)</p>	<p>Capacity alignment by allocated budgets</p>	
<p>"The importance of certain types of crimes are decided by the management on regional as well as national level." (PO.A3; PPS-POL)</p>	<p>Political decisions defining available capacity</p>	
<p>"Cybercrime is a good example of a type of crime that is nationally discussed and acted upon. Each region is instructed to run a minimum number of cybercrime investigations." (PP.B4; PPS-POL)</p>		
<p>"At the case level, we cannot negotiate what type of things we prioritize because that is determined from above. In consultation with the Minister and politicians, the board ultimately determines this." (PP.B; PPS-POL, PPS-EXP PPS-COU)</p>		

(continued)

TABLE 5 (continued)

First-order codes	Factors defining interorganizational interactions	Interorganizational Criminal Justice Characteristics
<p>"The covenants are made in consultation with the Ministry. [...] In covenants you agree on how many court hearings should be done in a year and how many cases and reports should be delivered." (PP.B9; PPS-COU)</p>		
<p>"Between the police and the public prosecution service agreements are set on the amount and type of criminal cases that the police should provide to the public prosecution service." (PP.B4; PPS-POL)</p>	Capacity alignment by covenants	
<p>"One of the leading agreements we make with the court is the covenant that tells how many cases and what type of cases should be brought to court." (PP.B11; PPS-COU)</p>		
<p>"We have national agreements on the delivery terms of the expert reports to be delivered by the probation service and NIFP and we cannot influence these terms." (PP.C8; PPS-EXP)</p>	Joint decision making defined by law and integrative procedures	
<p>"The national criminal proceeding regulations set uniformity in the way criminal cases are handled by the courts and the public prosecution service." (D.6; PPS-COU)</p>		
<p>"Courts are independent by law and therefore we do not consult the court about how to finish a criminal case and what might be necessary content-wise. The public prosecution service should make these decisions independent from the court." (PP.C1; PPS-COU)</p>		
<p>"There is a clear division on roles: the NIFP and probation service advises the public prosecution service and the public prosecution service makes the decisions in a criminal case." (PP.B6; PPS-EXP)</p>		
<p>"It is difficult to address each other because we are restricted by our organizational independency. I cannot say: I want this because I am a public prosecutor. I do not have the same authority over NIFP and probation service as over the police. What I can do is to try to explain the importance of a matter related to a case." (PP.B6; PPS-EXP)</p>	Joint decision making defined by professional attitude, professional independence	
<p>"The distance is greater with the court. That has to do with the fact that I do not want to give the impression that I want to influence the court. In addition, I want to prevent the relationships from being out of balance in terms of independency as that will influence the future interactions." (PP.B3; PPS-EXP)</p>		

(continued)

TABLE 5 (continued)

First-order codes	Factors defining interorganizational interactions	Interorganizational Criminal Justice Characteristics
<p>"The police are required, by law, to request permission from the public prosecution service for almost every investigative measure that is to be used by the police. [...] The public prosecutor is the leader of the investigations performed by the police. In the end we are the boss and the police have to do what we say they have to do." (PP.A6; PPS-POL)</p>	<p>Legal authority, divided tasks, and responsibilities set by law</p>	
<p>"I have close contact with the police, but at the same time our responsibilities are different. In the end, I am responsible for the final decisions in a criminal case." (PP.B5; PPS-POL)</p>		
<p>"The probation service is responsible for the content of the expert reports. The influence of the public prosecutor goes as far that he or she is allowed to ask the probation service to pay extra attention to a specific aspect of the criminal case." (PP.C1; PPS-EXP)</p>	<p>Divided tasks and responsibilities by profession</p>	
<p>"There is a clear division on roles: the NIFP and probation service advises the public prosecution service and the public prosecution service makes the decisions in a criminal case." (PP.B6; PPS-EXP)</p>		
<p>"The probation service has its own independent task. A probation advice is independent, based on the professional expertise of the probation service." (D.8; PPS-EXP)</p>		
<p>"The distance is greater with the court. That has to do with the fact that I do not want to give the impression that I want to influence the court. In addition, I want to prevent the relationships from being out of balance as that will influence the future interactions." (PP.B3; PPS-COU)</p>	<p>Relational distance due to independence</p>	
<p>"I would like to have an objective advice of the NIFP and therefore the distance between them and us is greater. NIFP are professionals that have a advising role." (PP.B5; PPS-EXP)</p>		
<p>"I notice that when there is a time limit to a case, because the suspect is held in custody and needs to come to court within a fixed period of time, there is pressure on the criminal case. If the suspect is not held in custody, the probation service will look at the date of the hearing and will start working no earlier than 10 weeks before the hearing." (PP.B5; PPS-POL, PPS-EXP, PPS-COU)</p>	<p>Planning dependent on role of suspect</p>	<p>Stakeholders</p>

(continued)



TABLE 5 (continued)

First-order codes	Factors defining interorganizational interactions	Interorganizational Criminal Justice Characteristics
<p>"It is important to know whether the suspect is held in custody. In that case, the suspect needs to have a court hearing within 90 days. This ensures a certain time pressure to finishing the criminal case. As soon as a suspect is not held in custody, the planning is stretched over time and there is much less time pressure." (PP.B6; PPS-POL, PPS-EXP, PPS-COU)</p>		
<p>"The police, as also the public prosecution service, focus on bringing the suspect to court and being convicted. The probation service, on the other hand, focus mainly on finding a way in which the suspect can be prepared and brought back in the society." (PP.B9; PPS-POL, PPS-EXP)</p>		
<p>"We experience intensive contact during the start of a criminal case. However, when time continues, the police have other cases of prevention or detection that might be more important. In those situations, it is hard to ensure the police feel the same time pressure as we do. Consequently, it sometimes requires a lot of investment to make sure the police perform additional investigations in the criminal case." (PP.C5; PPS-POL)</p>	Individual organization's goals and aims influencing planning	Goal setting
<p>"Everyone has its own tasks in the criminal justice chain. However, together we have one aim." (PP.B6; PPS-POL, PPS-EXP, PPS-COU)</p>	Shared goals and aims on case content	
<p>"Transparency and integrity are the basis to the collaboration with our partner criminal justice organizations." (PP.C1; PPS-POL, PPS-EXP, PPS-COU)          "In the end it is about a good collaboration, together we have to bring a criminal case to court." (PP.C7 PPS-POL, PPS-EXP, PPS-COU)</p>		
<p>"Adding value to safety image of the police in providing safety to the public and being closely connected to the citizens is of great importance." (PO.A2; PPS-POL)</p>	Individual organization's goals and aims	
<p>"The police report on the evidence of the criminal case should be complete and accurate. [...] When considering the completeness of the case we always face the dilemma of performing additional investigations or completing the criminal case." (PP.A6; PPS-POL)</p>		
<p>"Some public prosecutors always want to do additional investigations in the criminal case and do not consider the economic management aspects of the police. [...] We have a limit in our available capacity." (PO.A1; PPS-POL)</p>		

(continued)

TABLE 5 (continued)

First-order codes	Factors defining interorganizational interactions	Interorganizational Criminal Justice Characteristics
<p>"We experience intensive contact during the start of a criminal case. However, when time continues, the police have other cases of prevention or detection that might be more important. In those situations, it is hard to ensure the police feel the same time pressure as we do. Consequently, it sometimes requires a lot of investment to make sure the police perform additional investigations in the criminal case." (PP.C5; PPS-POL)</p>		
<p>"The court and prosecution work as one team to plan criminal cases." (PP.B10; PPS-COU)</p>	<p>Shared focus on case timeliness</p>	

PPS-COU = PPS–court relationship; PPS-EXP = PPS–expert organization relationship; PPS-POL = PPS–police relationship.

deadlines concerning the quality, completeness, and timeliness of criminal cases. These systems are so comprehensive that one could argue the legal system could almost be managed by these existing control structures alone. However, in each interorganizational relationship integration mechanisms are also applied (see Table 6) to support the completeness, quality, and timeliness of processing criminal cases. Many interviewees and reports identify the use of information and operational integration to enable achieving justice, completeness, quality, and timeliness in bringing a criminal case to a verdict. We find that these information and operational integration mechanisms are instrumental in dealing with tensions that are induced by interorganizational criminal justice characteristics and are thus inherent to criminal justice. Also, our data show interesting differences in the use and purpose of integration in the relationships considered, that is, in the PPS–police relationship, the PPS–expert organization relationship, and the PPS–court relationship. We proceed in this section by presenting how the specific criminal justice characteristics (i.e., multiple stakeholders, goal setting, and control structures determined by laws and regulations) relate to and influence the integration mechanisms used in each relationship.

#### The Public Prosecution Service–Police Relationship: Legal Authority and Information Dependence

*Interorganizational Criminal Justice Characteristics.* In bringing a criminal case to court, the police and the PPS work together toward achieving a joint goal of detecting and investigating crime. This involves gathering and exchanging a lot of information pertaining to individual criminal cases derived

from stakeholders involved in or related to the crime. In doing so, the police and the PPS serve multiple stakeholders, that is, the general public and suspects, witnesses, and victims. In addition, the police have other functions to perform, such as supervising large events, preventing crime, and, consequently, ensuring safety in the public domain (document and interviewee references: D.5; PP.C6). Such activities are described as: "adding value to the safety-related image of the police in providing safety to the public and being closely connected to the citizens is of great importance" (PO.A2). Goals for the police in terms of the numbers of crimes to prevent, detect, and solve are periodically set, and "the importance of certain types of criminal cases is decided by management at the regional as well as national level" (PO.A3). Hence, the police prioritize certain types of criminal cases. However, capacity limitations arise due to the inherent unpredictability in the occurrence of criminal acts and their associated capacity requirements, for example, shootings or high-impact crimes where the suspect is caught in the act (PO.A2). Consequently, the availability of police capacity and the timing and control of detection and investigation activities are not fully in the hands of the PPS.

Formal control structures define the relationship between the PPS and the police. The PPS has legal authority over the police because the PPS is, by law, responsible for the criminal case. More specifically, the PPS is given power over the police's investigation activities. As expressed by one of the interviewees: "The police are required, by law, to request permission from the public prosecution service for almost every investigative measure that is to be used by the police. [...] The public prosecutor is the leader of the investigations performed by the police. In the end the

public prosecutor is the boss and the police have to do as told" (PP.A6). The PPS uses its legal authority only when other approaches to overcome conflicts fail (PP.A6; PP.B5). Moreover, the PPS's legal authority is of limited use because the PPS does not decide on the police's capacity and budgets as these are determined nationally. Both the PPS and the police have to adhere to regional budget and capacity restrictions determined by the relevant government ministries with oversight of their organizations (PO.A3). Taken together, the PPS and the police are highly dependent on each other due to the need for information relevant to the criminal case and the stakeholders involved, and the relationship is shaped by the legal authority that the PPS has over the police. This results in a tension between legal authority and information dependence.

**Integration between the PPS and the Police.** The PPS and the police integrate through multiple mechanisms, including intensive information sharing, working closely together, shared processes, and joint decision making. They do so in order to deal with uncertainties, as induced by the information dependence, in the detection and investigation of criminal cases, and to deal with capacity and resource limitations.

Interviewees confirm that integration is required to manage uncertainty-induced dependence, which is fundamentally grounded in the uncertainties of the criminal case, such as those related to the crime and suspects: "the required amount of contact [between the police and the PPS] depends on to the severity of the crime, the complexity of the case, the maturity of the case [...] and whether the suspect is a known or unknown" (PO.A3). In addition, as stated by a public prosecutor: "the police report on the evidence of the criminal case should be complete and accurate. [...] When considering the completeness of the case we always face the dilemma of whether to perform additional investigation or complete the criminal case. When the additional investigation is expected to provide constructive evidence related to the case we have no choice and should perform the additional investigation" (PP.A6). In such cases, the PPS relies on information and operational integration with the police. The PPS and the police extensively exchange information on the planning and the content of the criminal case: "I have contact with the police multiple times a day to exchange information. We do not exchange information at fixed times because it is case dependent when and how much information is exchanged" (PP.C7), and work together intensively: "We [the PPS] do almost everything together with the police, especially when investigating major criminal cases" (PP.A7). The main purpose of this information exchange is to arrive at a correct and complete criminal case file.

National guidelines provide a structure to ensure alignment between organizations, for example, "To write official reports in a consistent way, the police make use of a standard form based on a list of compliance criteria" (PP.C8). This ensures the quality of the case information. Such guidelines can, for example, in detail describe the precautions, preparation, and procedures that should be used for an interrogation (D.4). Ultimately, all mechanisms related to information quality aim to ensure the collection of information that is correct and objective that will help the just decision making on the criminal case by the PPS and ultimately by the judge in court (D.4).

Moreover, the PPS and police deploy a high level of operational integration by working in close collaboration on the case, having multiple points of joint decision making, such as regarding the strategy for a criminal case: "When it is clear a criminal case will be brought to court, we will decide together with the police what investigations need to be undertaken by the police, how these investigations will be performed and when" (PP.A6). Planning of the criminal case is also jointly discussed and decided upon (PP.A7), usually at the case level: "There is no uniform way of establishing and capturing the planning agreements with the police, every public prosecutor does that in his or her own way" (PP.A5). Or, as another interviewee states, "we do not have contact at fixed times. It is dependent on the specific case when and how many times we have to discuss the criminal case" (PP.B7).

The PPS rarely uses its legal authority in its interactions with the police, because the capacity and the resources of the police are limited. As stated by one of the interviewees: "Some public prosecutors always want additional investigations to be performed in the criminal case and do not consider the economic management aspects of the police [...] We have a limit in our available capacity" (PO.A1). The limited police capacity for completing cases adds to the tension experienced by the PPS: "We experience intensive contact during the start of a criminal case. However, as time continues, the police have other cases of prevention or detection that might be more important. In those situations, it is hard to ensure the police feel the same time pressure that we do. Consequently, it sometimes requires a lot of investment to make sure the police perform additional investigations in the criminal case" (PP.C5). Generally, exercising legal authority is not considered, and instead, intensive integration mechanisms such as exhaustive information sharing and joint decision making will be aimed for. In summary, intensive information integration mechanisms and operational integration mechanisms are used to cope with the tension between the limited use of legal authority and the high information dependence.

### The Public Prosecution Service–Expert Organization Relationship: Professional Independence

*Interorganizational Criminal Justice Characteristics.* The expert organizations, the probation service and NIFP, act in the interests of two main stakeholders. The first is the suspect, and the second is the public, as the expert organizations are also responsible for preventing recurrences in the interest of the public. Although these groups are also two of the PPS's stakeholders, goal setting is different for the expert organizations. The PPS's main goal is to ensure that the suspect is convicted by bringing a criminal case to court (PP.B9). In contrast, the aims of the expert organizations are to prevent recurrences of crimes and to support an appropriate return to society (PP.B9). In addition to quality and timeliness considerations, interviewees state that the expert organizations pursue public accountability, individual client accountability, and public safety.

The relationship between the PPS and the expert organizations is defined by the organizations' differential professional expertise. For example, "the probation service has its own independent task. Probation advice is independent, based on the professional expertise of the probation service. A recommendation is independent of the public prosecution service, independent of the executors of interventions, and independent of the suspect" (D.8). Hence, professional independence is key in the expert organizations' work, which is reinforced by the control structures in place. The law acts as a control mechanism defining the roles and responsibilities of the organizations and their professionals. Financial and capacity allocations also denote independence between the expert organizations and the PPS. Despite the operational independence, the PPS is dependent on the quality and timely delivery of the expert organizations' advisory reports in the former's efforts to bring the criminal case to court and must thus seek alignment on those elements. Taken together, the relationship between the PPS and the expert organizations is shaped by the tension between the need for professional independence and the PPS's dependence on the expert organizations' deliverables.

*Integration between the PPS and the Expert Organizations.* The PPS acknowledges that the expert organizations act independently to ensure their objective, professional position. For example, "The probation service is responsible for the content of the expert reports. The influence of the public prosecutor goes so far as that he or she is allowed to ask the probation service to pay extra attention to a specific aspect of the criminal case" (PP.C1). Consequently, the PPS is not involved in any decision making regarding the content

of the information provided by either expert organization, but surprisingly, they provide their professional advice through a shared digital system (PP.B7; PP.C7), resulting in relatively high technology-based information integration. During the prosecution phase, information is refined and adapted, necessitating updates via this system to guarantee quality.

Despite their professional independence, the PPS is dependent on the timing, quality, and completeness of the advice of the expert organizations. This leads to a tension in preserving professional independence while seeking alignment in provision of reports in accordance with the PPS's needs. Primarily, the PPS requires the expert organizations to provide their reports in accordance with timeliness requirements and will aim for integration in delivery time frames. As expressed by the NIFP: "The difficulty lies in starting the diagnosis of the suspect and writing the report early in time, while not being sure whether the ongoing investigation by the police and PPS will add new information to the case which will impact the diagnosis and report to be made" (NI.A15). Accordingly, at the start of the prosecution process, the PPS coordinates the timing of advisory reports by informing the expert organizations when reports are required. Subsequently, the PPS actively monitors the status of these advisory reports until their delivery. At the same time, any contact regarding the content of these reports is limited (PP.C7).

Somewhat in contrast to the low levels of operational integration regarding the content and timeliness of criminal cases, at the national level there are multiple agreements on planning and delivery deadlines based on delivery terms set by law. These guide the timeliness of the process of building a criminal case. "The probation service and the NIFP have to deliver according to the nationally-set delivery terms. These terms are fixed. I do not put them up for discussion for each single criminal case" (PP.A6). Others confirm, "We have national agreements on the delivery terms of the expert reports to be delivered by the probation service and NIFP and we cannot influence these terms" (PP.C8). Procedures also determine when in the process of building a criminal case the PPS must involve an expert organization and what information is required from the organization. A typical example is: "We ask the NIFP to give a consult on whether an expert report is needed in a case and if so what type of expert report is needed. Several standard expert reports are possible" (PP.B7). Whereas on an individual case level, the tension between professional independence and dependence on planning is hard to overcome, intensive integration mechanisms exist at a supra-criminal case level to address this issue, defining what information needs to be exchanged and how and when to

TABLE 6

**Summary of Findings on Interorganizational Criminal Justice Characteristics and Integration per Relationship**

	PPS–police	PPS–expert organization	PPS–court
Interorganizational Criminal justice characteristics			
Control structure	Case content set by law and integrative procedures Case planning set by law and integrative procedures Tasks and responsibilities set by law Capacity alignment by allocated budgets Available capacity defined by political decisions	Case content set by law and integrative procedures Case planning set by law and integrative procedures Tasks and responsibilities set by law Tasks and responsibilities by profession Capacity alignment by allocated budgets Available capacity defined by political decisions	Case content set by law and integrative procedures Case planning set by law and integrative procedures Tasks and responsibilities set by law Capacity alignment by allocated budgets Capacity alignment by covenants Available capacity defined by political decisions
Stakeholders	Information dependence between PPS and Police exists due to uncertainty regarding the suspect and crime	Delivery time dependence due to dealing with the general public as well as individual suspects and relatives	Joint planning responsibilities serving public as well as individual stakeholders.
Goal setting	Just process of evidence collection Timely and complete police reports	High-quality, complete expert reports Objective, just and timely expert reports	Timely and complete criminal case file Objective and just decision making
Tensions per relationship originating from criminal justice characteristics	Legal authority vs. information dependence	Professional independence vs. delivery time dependence	Legal independence vs. joint planning responsibilities
Identified integration mechanisms			
Information integration	Information sharing <sup>a</sup> <ul style="list-style-type: none"> <li>• Case content</li> <li>• Status quo case content</li> <li>• Feedback on the case content completeness</li> <li>• Criminal case action plan</li> <li>• Court date (end date) for criminal case</li> </ul>	Information transfer <sup>b</sup> <ul style="list-style-type: none"> <li>• Case content</li> <li>• Court date (end date) of criminal case</li> </ul> Information sharing <sup>a</sup> Status quo timeliness of criminal cases	Information transfer <sup>b</sup> <ul style="list-style-type: none"> <li>• Case content</li> <li>• Status quo timeliness of criminal cases</li> </ul> Information sharing <sup>a</sup> CapacityFeedback on completeness of criminal case

(continued)

TABLE 6 (continued)

	PPS-police	PPS-expert organization	PPS-court
Operational integration	<ul style="list-style-type: none"> <li>• Status quo timeliness for criminal cases</li> <li>Case planning &amp; capacity</li> </ul> Joint decision making <ul style="list-style-type: none"> <li>• Case content</li> <li>• Criminal case action plan</li> <li>• Capacity</li> <li>Joint planning</li> <li>• Joint monitoring of timeliness</li> </ul>	Joint monitoring of timeliness	Joint decision making <ul style="list-style-type: none"> <li>• Case planning</li> <li>Joint planning</li> </ul>
Relational integration	Shared responsibilities <ul style="list-style-type: none"> <li>• Case content</li> <li>• Case timeliness</li> <li>Joint problem solving</li> </ul>		Shared responsibilities Case timeliness
Focus of integration	Criminal case content alignment (primary flow) Criminal case timeliness alignment (supporting flow)	Criminal case timeliness alignment (supporting flow)	Criminal case timeliness alignment (supporting flow)

<sup>a</sup>Information sharing reflects an ongoing process of information exchange where information is continually updated and adjusted.

<sup>b</sup>Information transfer concerns a single transaction of information.

maintain professional independence while safeguarding delivery times.

### The Public Prosecution Service–Court Relationship: Judicial Independence

*Interorganizational Criminal Justice Characteristics.* The court aims to achieve an objective view in the assessment of a criminal case, based on the contributions of advocates, defense of the suspect, and the integrative case file provided by the PPS. In so doing, courts seek to balance the interests of individual victims and suspects and the public at large. There is a natural tension in the goal setting of the PPS and the court. The PPS will aim to achieve conviction and sentencing, whereas the court aims to achieve justice, and thus requires convincing and timely evidence that is collected following correct procedures. The relationship between the PPS and the court is strictly defined in their control structure, and is regulated by law to ensure that the PPS and the court have no contact regarding the content of the case before trial, and do not share insights and that the court acts and decides on a case completely independently (PP.C1). At the same time, the PPS and the court share responsibility for meeting legal terms. Accordingly, the relationship between the PPS and the court is defined by a tension between the legal independence and shared planning responsibilities.

*Integration between the PPS and the Court.* In contrast to the absence of integration regarding the content of individual criminal cases, at the national level multiple agreements exist to align criminal case file requirements. Here, parties have established national regulations for criminal proceedings to support “uniformity in the way criminal cases are handled by the courts and the public prosecution service. In addition to creating uniformity, quality improvement is aimed for in topics such as scheduling, logistics, and criminal case composition” (D.6).

Integration concerning the timeliness and planning of criminal cases between the PPS and the court is intensive, which contrasts with the legally mandated complete independence and lack of integration in terms of criminal case content. Supporting staff from the PPS and the court form a joint planning team and have insight into each other’s general approaches to planning, as stated in a policy document: “We developed a partly shared administration of the public prosecution service and the court, while maintaining the legal responsibilities of both organizations” (D.10). The aim is to align the planning for each criminal case in terms of deciding on a final court date and the related timely delivery of the complete criminal case. The level of joint decision making is

high, as witnessed by one of the interviewees: "Within the joint planning team [of the PPS and the court] we work as one integrated whole; there is hardly any distinction between the public prosecution service and the court" (PP.B10). So in this phase, we again see that the law-based independence between the PPS and the court regarding the content of the case is retained, while at the same time, intensive operational integration mechanisms regarding timing and planning are employed.

### Summary of Findings

In the above sections, we have presented how in each relationship the specific context and characteristics influence the type and function of integration mechanisms used. Table 6, which builds on data presented in Tables 4 and 5, summarizes the findings related to our main research questions, specifying for each relationship the interorganizational criminal justice characteristics, the related tensions, and the integration mechanisms used showing to what purpose and how these integration mechanisms are adapted to the specific context.

## DISCUSSION

We investigate whether and how the specific interorganizational characteristics of criminal justice supply chains shape supply chain integration. More specifically, we explore whether known supply chain integration mechanisms as conceptualized in for-profit settings (e.g., Leuschner et al., 2013) are applied in pure public settings and, if so, whether they are applied for similar purposes.

Our findings show that despite the specific characteristics, familiar mechanisms such as information and operational integration are widely used in order to improve goals related to efficiency and speed, but relational integration is almost absent. As such, these known mechanisms complement the control structures embedded in laws and regulations. In addition, we find that supply chain integration mechanisms play a distinctive role in helping to mitigate and maintain the inherent tensions that stem from: (1) the different stakeholders' interests; (2) politically determined goals regarding costs, efficiencies, and justice; (3) operational limitations; and (4) the independence of organizations. These tensions all relate to the specific control structures, goal setting, and stakeholders' interest of the chain. We discuss these main points below.

### Characteristics of Criminal Justice Supply Chains and Supply Chain Integration

Our findings show that the presence and level of the control structures embedded in laws and regulations

shape the criminal justice supply chain and the interorganizational relationships within it. These structures form the backbone for the activities and responsibilities of each organization in the chain. They regulate formal deadlines, final documents, and criminal files to be delivered by each organization. However, to reach these formal points, intensive day-to-day activities need to be supported and tuned, enabled by a variety of supply chain integration mechanisms. Despite the dissimilar control structures compared with many other supply chains, the criminal justice supply chain adopts similar integration mechanisms as employed by other chains. Information and operational integration are used in building criminal files and supporting information flows. Our first proposition is thus:

Proposition 1: Information and operational integration complement the control structures, which are embedded in laws and regulations, in criminal justice supply chains.

We find little evidence of relational integration being important, although there are exceptions; for example, there is intensive contact between the police and PPS in the early stages of building a criminal case file. Our findings show that the strongly regulated environment and the nonvoluntary nature of the supply chain shape the relationships within the supply chain. Here, the control structures induced by laws and regulations provide a framework to organize the relationships and processes within and between criminal justice organizations. This legal framework is further supported by national agreements and covenants derived from law or inspired by political or societal goal setting that align procedures and allocate capacity across organizations via their budgets. Additionally, the control structures ensure trust and shared relational norms throughout the supply chain, which supports the objective of arriving at a sufficient quantity of high-quality evidence. This is demonstrated, for example, by the observation that the formal legal power of prosecutors is hardly ever needed in their interactions with the police.

The above findings imply a control structure where formal roles, responsibilities, and procedures of the partners make relational integration mechanisms almost redundant, and even more so, if all the different public organizations function appropriately. Our findings suggest that supply chain integration in a public setting such as criminal justice develops in a different way to for-profit settings. For-profit supply chains generally voluntarily build their relationships based on trust, commitment, and the aim of making a shared profit paid by customer fees rather than from taxes. This is done either by first generating trust through

relational integration followed by information and operational integration (Leuschner et al., 2013) or by starting with formal contracts that function as a safeguard against opportunism when sharing information (Cao & Lumineau, 2015; Williamson, 2008), followed by operational integration and relational integration. In doing so, these forms of integration will re-enforce each other (Cao & Lumineau, 2015).

In criminal justice, laws and other regulations provide governance that prevents opportunistic behavior and conflict between organizations. Laws and regulations define the individual and supply chain goal setting and responsibilities along with formal interactions. As such, laws seem to replace the need for relational integration in building trust and relational norms, because governmental organizations are trusted by other public entities in most, if not all, Western countries. Within the criminal justice supply chain, the task of developing relational norms and trust does not seem to require specific attention. The law-based structure and institutional setting result in strict and clear contracts and trust between the partners in the chain. Control structures thus play a role beyond laws and regulations:

Proposition 2: Control structures, embodied in laws and regulations, substitute for relational integration in criminal justice supply chains.

### **Tensions in Criminal Justice Supply Chains: the Role of Supply Chain Integration**

Our results show that the interests of different stakeholders influence the employment of supply chain integration mechanisms. Stakeholders' interests are institutionally embedded in laws and regulations. As a result, laws not only force cooperation, as discussed above, but also prohibit specific types of contact such that justice is inherently ensured. Specifically, laws define distinct roles for each of the supply chain partners, giving rise to partly conflicting objectives, and, in some instances, even limiting cooperation between criminal justice organizations, for example between the PPS and the court due to the principle of *trias politica*. These roles and objectives are intended to balance individual rights with societal needs for safety and justice. Political goal setting, regarding not only equity but also efficiency, requires arriving at a verdict within a reasonable amount of time and at acceptable costs. Serving the needs of a variety of individual stakeholders and society as a whole creates additional tensions between the parties involved. Taken together, our findings show tensions in several relationships: legal authority versus uncertainty (between the PPS and the police); professional independence versus delivery time dependence (between the PPS and the

expert organizations); and judicial independence versus joint planning responsibilities (between the PPS and the court).

The literature commonly advocates dealing with tensions through suppressing, compromising, and transcending strategies, both in organizations (e.g., Hargrave & Ven de Ven, 2017; Smith & Lewis, 2011) and in supply chains (e.g., Matthews et al., 2016; Xiao et al., 2019). In contrast, we find that the criminal justice supply chain does not eliminate its tensions. This chain is not able and does not attempt to do so because the tensions stem from the control structure, embedded in laws, regulations, and procedures, which is typical for and inherent to the chain. Even though these are inherent to the system and permanently present, the final judicial service (a decision in court) can only be delivered if the partners undertake their work in the presence of these tensions. However, partners have adopted specific types of integrative activities and mechanisms to perform their work subjected to the legal barriers and their implied tensions, without violating them. This is done by seeking integration on an individual case level (between the PPS and the police) rather than by using legal authority; on a supracase level (between the PPS and the expert organizations) in order to maintain professional independence; or in specific areas, for example in joint planning between the PPS and the court, to maintain judicial independence. Additionally, it is done in seeking information integration between the PPS and the expert organizations to maintain professional independence while coordinating delivery time. In each case, the integration mechanisms that are used help to support equity, efficiency, and timeliness and as such are necessary to achieve the overall aims of the criminal justice supply chain.

In general, tensions will be resolved using well-known strategies such as suppressing, compromising, or transcending (e.g., Hargrave & Ven de Ven, 2017; Smith & Lewis, 2011). However, in criminal justice supply chains this is not an option. In these chains, supply chain integration reduces the need to solve tensions. Therefore, we submit the following propositions:

Proposition 3a: Tensions created by goal setting and the interests of stakeholders embedded in the laws and regulations that govern the criminal justice supply chain are essential and inherent for the chain to function and do not need to be resolved.

Proposition 3b: Negative effects of tensions and formal barriers to cooperation in criminal justice supply chains can be mitigated by the use of well-known supply chain integration mechanisms.

The above discussion highlights that despite the specific interorganizational criminal justice characteristics,



we do not find any new information or operational integration mechanisms at work in this supply chain, but we do find existing mechanisms being applied beyond their traditional purpose of performance improvement in supply chain integration (Leuschner et al., 2013). The next section aims to extend the discussion of our empirical findings beyond criminal justice supply chain and its specific characteristics, to explore potential implications for other public and for-profit supply chains.

## CONTRIBUTIONS AND IMPLICATIONS

### Theoretical Contributions

This study explores how specific interorganizational criminal justice characteristics, derived from the dimensions of publicness (i.e., ownership, funding, goal setting, and control structure), shape the amount and nature of supply chain integration in a public supply chain. In doing so, we aim to extend publicness theory to the interorganizational level, which may provide a theoretical lens for much-needed research into the management of supply chains that feature public organizations as focal actors (Gualandris & Klassen, 2018; Johnson et al., 2018; Pullman et al., 2018; Rodriguez et al., 2016). In this section, we seek to use our empirical results to derive how the dimensions of publicness influence supply chain integration, in order to generate the basic tenets for such an interorganizational publicness theory. In doing so, we have three main contributions.

First, our findings suggest that the dimensions of publicness matter less than expected at the supply chain level, because our public supply chain uses mostly well-known integration mechanisms. Our findings also show that judicial control structures and goal setting influence the interorganizational level and thus shape the interactions between partners. However, these are complemented with known information and operational integration mechanisms. The two judicial characteristics directly relate to three dimensions of publicness: goal setting, funding, and ownership. Our findings show that goal setting, as embedded in the legally determined duties of the organizations and in the laws that regulate interactions between the organizations, induces formalized supply chain integration. Additionally, due to the organizations' publicly funded status, the government determines budgets and targets for productivity and deliverables, both for the individual partners and for the supply chain as a whole. These budgets and targets necessitate coordination and formal rules regarding interorganizational information exchange and integration. In the criminal justice supply chain, these mechanisms are particularly strong because not only

are the organizations established by law, but also their process is concerned with the enforcement of the law. The laws that govern the criminal justice supply chain provide further prescriptions for the coordination and integration between partners, such as regarding the maximum allowed delivery time and required quality of case files. However, while control structures and goal setting are important for delivering justice, fairness, and equity, and for clarifying roles and responsibilities of each chain member, they mainly define formal, final products and process rules. In order to reach these and be efficient and effective, the interaction between partners needs support for the intensive daily exchange of information and tuning of activities. Here, the control structures provide limited, if any, guidance. Thus, established supply chain integration mechanisms are beneficial for public supply chains, although supply chain integration is shaped by the public context, and particularly by two dimensions of publicness: goal setting and funding. As such, these two dimensions drive the level of prescribed formal interaction between public partners but do not eliminate the need for additional integration mechanisms mainly applied in for-profit supply chains. Therefore, we propose the following proposition:

Proposition 4: In public supply chains, control structures and goal setting provide rules for interaction but need to be complemented with known for-profit supply chain integration mechanisms.

Second, our findings show that the dimensions ownership and control structures together provide a restrictive contractual framework, creating forced rather than voluntary relationships. As argued by Harland et al. (2019), these dimensions cause public supply chain organizations to build different types of relationships to for-profit organizations. Accordingly, we find that due to the forced nature of these relationships, public chains put a different emphasis on the three dimensions of integration: information, operational, and relational integration. The near-absence of relational integration efforts is surprising and suggests that, in contrast to for-profit supply chains, building relational capital (Cousins et al., 2006; Villena, Revilla, & Choi, 2011) and building trust (Zhang, Viswanathan, & Henke, 2011) are present to a lesser extent and are seemingly of less value in public supply chains such as the criminal justice supply chain. This implies that contractual rather than relational governance (Cao & Lumineau, 2015) plays a dominant role in the public supply chain. Apparently, the restrictive contractual framework, firmly grounded in and based on the dimensions funding, ownership, and control structures, is capable of creating trust by itself. Moreover, in the criminal justice supply chain, the

common goal of equity provides a chainwide aim and frame of reference. By providing ownership, control structure, and, partly, goal setting as additional institutional, context-related factors to those distinguished in Cao and Lumineau (2015), we help to better understand the roles of contractual and relational governance in supply chain integration. Specifically, these findings suggest that contractual governance, as induced by dimensions of publicness, can offset the need for relational governance. This may also have consequences for nonpublic chains. Publicness theory (Bozeman, 1987, 2013; Bozeman & Bretschneider, 1994; Bozeman & Moulton, 2011) suggests that the nature of most organizations (and thus most supply chains) lies somewhere between pure public and pure for-profit. Consequently, if control structures or ownership are positioned more toward the public side of these dimensions, they might provide a similarly restrictive contractual framework to regulate the intraorganizational processes. As such, if governments and control structures do provide sufficient safeguards, relational governance might be similarly underdeveloped or almost absent, as stated in our next propositions.

Proposition 5a: Laws and regulations affect the balance between relational and contractual governance.

Proposition 5b: A high level of publicness in the dimensions of control and funding can replace the need for relational governance.

Third, we find that, due to the specific combination of interorganizational characteristics, tensions arise within criminal justice supply chains. From a publicness point of view, the constraints and tensions stem from the combination of two dimensions of publicness: goal setting and funding. Goal setting provides all organizations in the chain with clear roles (with the principle of *trias politica* as the metastructure) to guarantee the independence of partners, for example, between the PPS and the court. Such independence is needed to guarantee the sometimes opposing interests of a variety of stakeholders: suspects, victims, witnesses, and the general public. This independence also places clear legal constraints on how organizations can shape their cooperation regarding specific elements of the criminal case file. However, the nature of the organizations' funding requires that the organizations work together to be able to achieve the required performance levels in terms of both budgets and delivery of justice and equity. This is also partly driven by the political control of the chain. As a result, the exchange of specific information can be prohibited, and organizations' goals are to some extent conflicting. Interestingly, we find that known integration

mechanisms in the criminal justice context do serve novel, additional roles: They are used to work around the constraints and inherent tensions created by the dimensions of publicness. Consequently, we argue that organizations and their supply chains may use supply chain mechanisms to manage specific tensions rather than adopting suppressing, transcending, or compromising strategies (Smith & Lewis, 2011). This is an important finding toward an interorganizational publicness theory. It shows that improving public supply chains can be achieved by applying known integration mechanism, but that these mechanisms may serve to mitigate specific interorganizational tensions that are directly related to the very nature of public supply chains. In line with our findings, we argue that following the control structures set by funding, laws, regulations, and procedures alone would be insufficient to bridge the tensions between societally demanded efficiency and the core legal principles of fairness and equity. Supply chain integration (e.g., collaboration between the PPS and the police, and joint planning between the PPS and the court) enables the organizations to maintain these tensions and mitigate their potential detrimental effects. We speculate that the selective use of integration mechanisms may often be beneficial in other situations, in which organizations and supply chains are less pure public in their dimensions of publicness, and where different organizational objectives and responsibilities are in place despite organizations having common goals. Therefore, our final proposition can be stated as follows:

Proposition 6: Supply chain integration might cope with, while maintaining, tensions between supply chain partners.

Taking the above together, we contribute to the understanding of public supply chains by making a first step in extending and applying publicness theory beyond the single organizational level. We do so by showing that the four dimensions of publicness help in understanding both the type and role of supply chain integration in public supply chains. Further empirical exploration and theoretical elaboration of the publicness theory in supply chains that are less pure public in one or more of the dimensions of publicness might be the next step for future studies. This further exploration might help to better understand how each of the dimensions of publicness shapes integration and how specific known for-profit mechanisms help to improve performance.

### **Possible Implications Regarding for-Profit Supply Chains**

The premise of the dimensional publicness theory is that for-profit and public are two extremes, with many

organizations having some degree of publicness on at least one of the four dimensions: ownership, funding, control, and goal setting. Although this study comprises a pure public supply chain, we envision implications for for-profit chains comprised of voluntary relationships and shed light on the role of governments and regulations in such chains.

First, governments can change or affect interorganizational dimensions of publicness by establishing rules that apply to a whole network, for example, goal setting, by defining a common goal or demarcating roles of individual organizations, or, even, by affecting organizations' funding structures by providing public funds or payments. Following our case logic, such changes could enable or even require the chain to work together to a common goal, even where supply chain partners individually aim for different goals. A specific example is sustainability; supply chain partners in a single supply chain or network may struggle to reach goals that are consistent with the sustainability objectives strived for by governments and the public (Harland et al., 2019; Koppenjan & Enserink, 2009).

Second, our findings suggest that laws can force cooperation, while organizations involved can still follow their own profit-oriented goals and objectives. It implies that forced cooperation might be a starting point for supply chain integration on specific tasks. In other words, laws and regulations may invoke new methods or new applications of existing methods of supply chain integration, for example, in city logistics, where competing organizations' opposing objectives and forced cooperation have created difficulty in achieving generally accepted and much-needed changes (e.g., Holguín-Veras, Amaya Leal, Sánchez-Díaz, Browne, & Wojtowicz, 2020).

Third, for-profit supply chains might learn from the roles of contracts and contractual governance as used in criminal justice supply chains. In relationships of cooperation, such as in horizontal collaboration, the building of trust is often seen as a pivotal element that is necessary before joint activities can be commenced (Pomponi, Fratocchi, & Tafuri, 2015). An alternative could be to start with a restrictive contract that forms the backbone of the relationship and a legal safeguard, on which to base joint, integrative activities.

A fourth and final point to for-profit supply chain integration is related to tensions. Our findings show that opposing objectives do not need to be resolved but can be maintained while still working together closely on appropriate aspects and issues of supply chain integration. Tensions in the supply chain originate from forced integration and collaboration between organizations that retain individual goals and from limitations regarding what integrative

mechanisms are legally permitted. Tensions are present in many chains, despite the idea of joint interests, as expressed by Christopher (2000, p. 39) stating that "individual businesses no longer compete as stand-alone entities, but rather as supply chains." Even in closely integrated relationships, each of the partners needs to make a profit and might aim to appropriate a larger share of the joint performance gains achieved through supply chain integration. Similarly, in sustainable supply chains buyers and suppliers might have opposing aims and objectives that lead to tensions in the chain (Markman & Krause, 2016; Montabon, Pagell, & Wu, 2016; Xiao et al., 2019). Our results show that tensions do not need to be resolved, but can be maintained, specifically, if a chain has some of the earlier discussed publicness-related properties. As such, collaboration and competition can probably coexist, enabled by the appropriate supply chain integration. Whether or not such tensions can be maintained and what role supply chain integration has in these chains are questions for future research.

### Managerial Implications

For managers of justice supply chains, and for managers in the public sector in general, this paper contains several implications regarding the implementation of regular supply chain mechanisms. First, our findings suggest that implementing known mechanisms from for-profit settings is not always needed and probably impossible without taking a contingent approach. The regulations, laws, and procedures in public chains provide already a backbone to achieve coordination or integration, which can be supplemented with selected additional mechanisms and practices. A single focus on for-profit mechanisms and associated goals as speed and cost might indeed be harmful for goals as justice and equity. In addition, policymakers should be aware of such subtle balances. Second, our findings also indicate that the argument that public settings as criminal justice are so unique that general approaches are inapplicable does not hold. Such arguments often stem either from a strong focus on anecdotic, extreme cases or from the fear that only cost and speed will be improved at the expense of justice and equity. Finally, our findings indicate that even if specific laws create restrictions to integration, for example, related to privacy, public organizations can still engage in relatively high levels of integration by using joint planning mechanisms.

Although our findings relate to public supply chains and, more specifically, to the criminal law system, we argue that managers in for-profit supply chains can also benefit from our findings. Specifically, our findings show that integration mechanisms do not necessarily have to incorporate activities pertaining to all

types of integration (information, operational, and relational integration; cf. Leuschner et al., 2013) and that high levels of supply chain integration are not necessarily desirable. In line with earlier research related to contextual factors that influence the effectiveness of supply chain integration (e.g., Giménez, Van der Vaart, & Van Donk, 2012; Wong et al., 2011), our findings suggest that the type of integration should be fitted to the type of relationship. For some relationships, a focus on joint planning might be preferable, and for others, a focus on joint decision making or extensive involvement in the creation of the product or service may require intensive information exchange. Our research also suggests that contracts might in some cases replace the need for interorganizational trust.

Finally, our research suggests that policymakers might use regulations to force or enable collaboration between supply chain stakeholders and partners that have different goals in order to achieve common societal goals; sustainable transport in cities is one such example (Holguín-Veras et al., 2020).

### **Limitations and Implications for Further Research**

Our research has several limitations. First, our focus on the criminal justice supply chain presents two limitations. One is that this is a pure public service, which limits our capacity to identify differential effects of different degrees of publicness or the individual effects of specific dimensions of publicness. However, the chosen context enabled us to better see the effect of a high degree of publicness, which is an under-researched area. Still, a comparative study across organizations and supply chains with different levels of publicness could be an interesting extension of the present study. Additionally, we did not explicitly consider some relevant stakeholders such as the prison system, lawyers, or the various customer groups, such as the general public, politicians, victims, witnesses, and suspects. In fact, our main contribution focuses on the interorganizational relationships between public organizations. Still extending our research by incorporating the role of lawyers could be of interest, given their influence on some parts of the process, as was often acknowledged by respondents in our fieldwork.

We believe that the present study provides much-needed knowledge on supply chain integration in pure public service supply chains, which provides a base for an interorganizational publicness theory. Future studies might go beyond these supply chains to include a wider range of stakeholders and examine how public and for-profit partners integrate. Another avenue for further research could be to investigate the physical treatment of suspects. In so doing, it might be interesting to study integration at an individual

criminal case level. Criminal cases differ; for example, there are differences between cases where a suspect is known and where a suspect is not known, which might provide further insight regarding the understanding of what integration mechanisms are applied in particular situations, given the dimensions of publicness.

Second, our research was conducted in the Netherlands. Public administration and, particularly, justice systems are institutionalized at the national level, but we argue that the mechanisms we reveal in this study will also hold for other countries. Constitutional laws and regulations, and the specific performance objectives and the role of the customer will be similar across countries (Boyne, 2002). Nevertheless, extending our study to other countries or employing a cross-country perspective could be of interest (e.g., as in Seepma et al., 2020).

Third, we acknowledge that criminal justice is to some extent an extreme environment that is more heavily shaped by laws and regulations than some other pure public supply chains. This might represent a limitation to the generalizability of our study, because we find that laws and procedures play important roles both in realizing and in limiting integration mechanisms. However, most public supply chains have to deal with rules that establish the supply chain and the procedures its members have to follow and/or determine the boundaries of their work environment; one such example is healthcare supply chains (Dobrzykowski, 2019). As we have argued above, we would encourage the investigation of a variety of supply chains with different degrees of publicness; however, the focus in this study on a strongly regulated chain, the criminal justice supply chain, enables us to see clearly the influence of the dimensions of publicness.

A fourth possible limitation is that we do not include any explicit performance measures in our analysis, even though conceptual research relates performance to the dimensions of publicness (e.g., Andrews et al., 2011). This is partly because performance measurement is outside the main focus of this paper, and partly because including such measures would pose numerous challenges. For example, although the different parties do measure throughput times for several of their processes, other performance measures are much harder to investigate and are difficult to relate to specific mechanisms. Ultimately, the performance effects (across a range of criteria including speed, accuracy, quality, and cost) would be of academic and practical interest. Based on our interviews and additional data sources, the present study implicitly shows that integration efforts pay off, but further research could aim to better link the effectiveness of mechanisms to specific performance measures.

A combination of longitudinal in-depth case studies, following individual and aggregated case files, together with quantitative time-series data and qualitative assessments of sample files, would probably be the best way to achieve this. Such research could also contribute to the New Public Management debate by providing insights into the trade-offs between relatively hard performance measures such as cost and speed versus softer measures such as equity and justice.

## CONCLUSIONS

Ample empirical research shows that public and private supply chains perform differently in terms of, for example, responsiveness and timeliness of delivery (e.g., Andrews et al., 2011; Radnor et al., 2016). These differences relate to the long-standing discussion of whether and how public organizations differ from private ones. In this context, publicness theory argues that four dimensions (i.e., ownership, funding, goal setting, and control structure) determine the degree of publicness of an organization (Bozeman, 1987, 2013; Bozeman & Bretschneider, 1994; Bozeman & Moulton, 2011). However, so far, these theoretical ideas have not been extended to the interorganizational level. Such further research is needed, as echoed in recent calls (Gualandris & Klassen, 2018; Johnson et al., 2018; Pagell et al., 2018; Pullman et al., 2018; Rodriguez et al., 2016) and the sustained debate on the application of for-profit management approaches in public contexts and supply chains. The criminal justice supply chain provides an interesting pure public case to explore how specific dimensions of publicness affect or limit supply chain integration mechanisms. We find that control structures, embodied in laws and regulations, define the governance of relationships within the criminal justice supply chain. Even though relationships are set in law, information and operational integration is required and used in a broadly similar fashion to for-profit supply chains. However, we also find that justice-specific tensions, stemming from goal setting and multiple stakeholders, can be maintained and mitigated by the use of integration mechanisms. With these findings, we add to the theoretical and practical understanding of supply chain integration in public supply chains and identify implications relevant to both public and for-profit settings. We contribute to the discussion on whether, when, and how traditional supply chain management mechanisms are adopted or contextualized in supply chains that are not primarily profit-motivated. Moreover, we provide a stepping-stone for the extension of publicness theory to the interorganizational level and to supply chain integration.

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## APPENDIX

### INTERVIEW PROTOCOL

#### A.1. General questions

- What is your role in the organization and for how long have you been in this role?
- What responsibilities does your role in the organization include?

#### A.2. Performance related questions

- What are the performance aims of your organization?
- How do these performance aims relate to your partner organizations?
- How and to what extent is the performance of your work influenced by your partner criminal justice organizations?
- How and to what extent can you influence the performance, and improvement in the performance, of your partner criminal justice organizations?

#### A.3. Information integration related questions

- When do you have contact with your criminal justice partner organizations and why?
- What information do you share with your partner criminal justice organizations? What information do they share with you?
- When do you share this information? How frequently? In what way?
- What factors influence information sharing between you and your partner criminal justice organizations?
- What barriers/enablers do you experience in information sharing?

#### A.4. Operational integration related questions

- What activities do you perform for the benefit of your partner criminal justice organizations?
- What activities do other criminal justice organizations perform for you?
- What activities do you perform together with your partner criminal justice organizations?
- To what extent do you work together with partners criminal justice organizations and how is this organized?
- In what activities/processes do you seek alignment with partner criminal justice organizations? How?



- What barriers/enablers do you experience in performing activities jointly?

**A.5. Relational integration related questions**

- How would you characterize the relationships with your partner criminal justice organizations? What goes well and what goes wrong?
- What type of agreements exist between you and your partner criminal justice organizations?
- Who is responsible for making agreements? How does this show in practice?
- Who is responsible for compliance with the agreements made? How does this show in practice?
- Who is responsible for the quality and timeliness of your work? How does this show in practice?
- What do you need from your partner organizations to properly do your job?
- What do your partner organizations need from you to properly do their job?
- What barriers/enablers do you experience in collaborating with your criminal justice partner organizations?