

Employment and crime: A longitudinal follow-up of organized crime offenders

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Abstract

Employment is considered to help offenders desist from crime. Studies focusing on organized crime offenders, however, have suggested that employment may promote rather than inhibit crime for these offenders, but lacked quantitative individual-level data to confirm this finding. Using a large sample of organized crime offenders ($N = 1921$) and longitudinal individual data on offending, employment, income and financial support, the current study aims to clarify the role of employment in the offending careers of these offenders. Fixed effects models show the effects of employment, self-employment and employment on the payroll. For organized crime offenders, being employed is associated with a 10 percent increase in offending and having their own business is associated with a 23 percent increase in offending. For organized crime offenders in leadership positions, employment is associated with a 47 percent increase in offending and owning a business is associated with a 68 percent increase in offending.

Keywords

Organized crime, employment, offending careers

Introduction

The relationship between employment and crime has been examined in numerous studies (for an overview, see Raphael and Winter-Ebmer, 2001). Only few studies, however, have collected quantitative individual-level data and these studies have primarily focused

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on general offender samples (see, for an overview, Uggen and Wakefield, 2008). For organized crime, the link between employment and crime involvement is less clear (for example, Van Koppen et al., 2010b). The aim of this study is to fill this lacuna and clarify the role of employment in the criminal careers of organized crime offenders.

A commonly held view in life-course criminology is that employment is a key turning point that helps offenders break free from their criminal past. Not only does employment provide a steady income, but it can also create a stake in conformity, motivating offenders to avoid (routine) activities that increase the risk of future crime. Prior studies have tested these assumptions primarily on general offender samples and relatively young offenders (Apel and Horney, 2017; Uggen and Wakefield, 2008; Van der Geest et al., 2011; Verbruggen et al., 2012), reporting significant reductions in crime involvement at times of being stably employed.

Studies on organized crime, however, have shown that organized crime offenders do not represent the average criminal. Often their opportunities for engaging in organized crime occur in occupational settings and, therefore, are markedly different from the mechanisms described in life-course developmental theories (Van Koppen and De Poot, 2013). Because organized crime often involves illegal and transnational business activities, legal work experience in trade or transportation may put workers at risk of becoming involved in organized crime. To understand involvement mechanisms, individuals' legal employment history seems to be highly relevant.

Employment and crime

Life-course theory emphasizes that employment, among other life events (such as a [good] marriage or parenthood), can trigger a turning point that plays an important role in reducing crime. Employment not only provides a legal income and structures daily routines, but it can also increase responsibility and create a stake in conformity (Laub and Sampson, 2003). A good job offers prospects, appraisal, and a level of autonomy. As life-course theorists put it, it can create a turning point towards a more conventional life.

A difficulty in empirically establishing the effect of employment on crime is disentangling causation from selection. For example, offenders are assumed to possess certain individual characteristics, such as poor basic skills, low education, and substance use, that not only increase the risk of offending but also reduce employment chances. Gottfredson and Hirschi's (1990) self-control theory argues that, if these characteristics are controlled for, no causal effect of employment on crime can be found. It suggests that the underlying level of self-control determines both crime and employment outcomes. Life-course theory, on the other hand, rejects this deterministic view and instead argues that employment can be a turning point, which helps offenders break with their criminal past.

The empirical evidence for a negative effect of employment on crime is ambiguous at best. Most job experiments have rendered disappointing results and job programmes, on average, have no impact on offending (Bushway and Apel, 2012; Visher et al., 2005). These studies are also limited, however, by the fact that programmes tend to provide low-quality jobs with limited career prospects. Results from observational studies are more promising, indicating an effect of employment on reduced offending (Savolainen, 2009; Van der Geest et al., 2011; Wright and Cullen, 2004), but the effect is also found to be

conditional on the quality of the work (Apel et al., 2006; Apel and Horney, 2017; Van der Geest et al., 2011), the stability of the job (Ramakers et al., 2017; Verbruggen et al., 2012), and the age of the offender (Uggen, 2000). In order to separate cause from effect, a number of empirical studies on the effect of employment on crime have used longitudinal data and advanced statistical techniques to control for selection bias. A minority of studies have used work experiments. These studies show at best limited effects of employment on crime (Piliavin and Gartner, 1981; Uggen, 2000). It is unclear, however, to what extent these experimental findings also tell us something about the real-world effects of employment on crime, particularly for offender groups selecting into specific job opportunities.

Prior studies on special offender populations suggest that the effect of employment on crime may be different for special offender populations, such as white-collar offenders (Van Onna et al., 2014) or organized crime offenders (Van Koppen and De Poot, 2013). Therefore, replication of research on employment and crime is necessary to advance theory and improve our understanding of crime development and desistance for offenders who are different from the average offender.

Employment and organized crime

Organized crime differs from more common crime in ways that give reason to question whether involvement mechanisms and effects of life transitions for this particular group of offenders are similar to those in more general offender populations. In the Netherlands, criminal groups are considered to be organized crime groups when they are focused primarily on obtaining illegal profits, systematically commit crimes with serious damage to society, and are reasonably capable of shielding their criminal activities from the authorities (Fijnaut et al., 1998). These groups are essentially different from Mafia-type organizations or hierarchical pyramidal organizations. Instead, Dutch organized crime is better characterized by international illegal activities committed by flexible and fluid criminal networks. These international activities mainly involve producing and trafficking drugs, but also human trafficking for sexual exploitation, smuggling illegal immigrants and trafficking in arms or stolen vehicles.

Organized crime activities are more complex than most common crimes, and the fact that many illegal activities cross national borders makes them even more complex. Not only is solid cooperation between co-offenders required, but many organized crime activities also involve logistic and financial planning. A crime group involved in drug trafficking, for example, needs to produce or buy the drugs, transport the goods – often covering multiple countries – and sell the drugs again. While the drugs transfer from A to B to C, money flows go the opposite way, from C to B to A. These complex activities not only require some level of criminal experience, but often also some conventional knowledge, contacts or capacities. Therefore, it is not surprising that earlier studies (mostly qualitative, based on police files or interviews) found that it is not a rare phenomenon that non-offenders with a conventional life and legal employment can become involved in organized crime (Kleemans and De Poot, 2008; Kleemans and Van de Bunt, 2008; Van Koppen and De Poot, 2013).

Kleemans and Van de Bunt (2008) have qualitatively studied the relationship between employment and organized crime. Based on police files of 1623 organized

crime offenders involved in 120 different crime groups, they conclude that many organized criminal activities are embedded in work settings. Many offenders were found to work relatively independently and with a high level of autonomy due to their hierarchical position or the nature of their job, or because they owned a company. Such occupational positions bring along higher levels of autonomy, enabling individuals to abuse the rules and participate in criminal activities rather unobtrusively. Many organized crime offenders own a business, and these businesses are often related to their criminal activities. Some offenders were found to have started their company with legal intentions, but they changed their intentions because the business turned out to open doors to criminal activities. Other businesses were found to serve only as a cover for criminal activities. A business can be used for criminal purposes in three ways: for logistic support (for example storage), to legitimize criminal activity (for example to cover drug transports), and for money laundering purposes (Kruisbergen et al., 2015; Van Koppen, 2013).

Kleemans and De Poot (2008) introduced the concept of *social opportunity structure* to explain why individuals with a conventional life and employment may start committing organized crime. Specific contacts, skills or opportunities obtained through conventional employment can be a reason to change priorities and get involved in organized crime activities. Empirical research supports this concept of organized crime involvement being facilitated rather than inhibited by legal jobs or contacts (Kleemans and De Poot, 2008; Kleemans and Van de Bunt, 2008). In addition, qualitative interview studies also show that individuals employed in certain sectors, such as logistics or finance, or certain positions (that is, working independently or unsupervised), are more vulnerable to involvement in organized crime activities (see, for example, Van Koppen and De Poot, 2013).

Although the life-course perspective has yielded some widely accepted assumptions on the development of and effects on criminal behaviour, these conclusions are merely based on general, mostly young, offender groups. Earlier studies have shown that organized crime offenders differ from more general offender populations in terms of criminal career dimensions and the mechanisms driving their involvement in crime, implying that some widely accepted assumptions might not apply to this particular group of offenders. For example, the relationship between age and crime is generally found to rise during the early adolescent years, reach its peak in late adolescence, and decrease from early adulthood on. In contrast, only a small proportion of offenders involved in organized crime at any point in time during their life follow this widely accepted age-crime curve. The majority of organized crime offenders were found to engage in crime only later on in life (Van Koppen et al., 2010b). Although their relatively late onset in crime suggests that organized crime offenders are not typical highly impulsive offenders with low self-control, the seriousness of their offending tends to escalate more rapidly than for those who do not get involved in organized crime later on (Van Koppen et al., 2010a). This combination of a late, but serious onset in crime suggests that organized crime offenders do not fit the standard image of, for example, 'street criminals' but instead represent a group of individuals who take advantage of opportunities that become available to them later on in life (Kleemans and Van Koppen, 2020; Van der Geest, Van Koppen and Kleemans, 2020).

Current focus

Previous empirical findings suggest that the effect of employment on offending may be different for organized crime offenders compared with the general offender population. Given that most organized crime offenders do not start offending until adulthood and that the opportunities for organized crime may occur in occupational settings, employment may be linked not to desistance from crime, but rather to vulnerable circumstances and opportunity structures luring individuals into organized crime. The aim of this study is to advance knowledge about the role of employment for organized crime offenders. To our knowledge, this study is the first study worldwide examining the association between employment and offending for organized crime offenders by using long-term observational data on employment history, income, and financial support. Controlling for heterogeneity by estimating within-individual regression models (that is, fixed effects), we analyse the effect of employment on the number of offences.

Our research question is three-fold. First, describing the backgrounds of organized crime offenders, we compare their birth country, educational level, employment history and income with that of the general population in the Netherlands. Second, distinguishing by offender role and employment status, we compare background characteristics between subgroups of organized crime offenders. Third, statistically controlling for potential heterogeneity bias, we investigate whether employment participation is associated with the number of offences and whether the effect of employment differs by offender role and either being self-employed or being payroll-employed.

Methods

Data and operationalization

Sample of organized crime offenders. The sample of organized crime offenders used in this study originates from the Dutch Organized Crime Monitor, an ongoing research project monitoring organized crime in the Netherlands (for more information, see Kleemans, 2014; Kruisbergen et al., 2018). Closed police files of criminal investigations into criminal groups, often spanning a period of several years, are extensively studied, with a focus on the nature of organized crime activities, the modus operandi and the individuals involved in these organized crime activities. Organized crime groups included in the monitor are particularly involved in traditional and synthetic drugs, human smuggling, human trafficking, fraud, money laundering and cybercrime.¹ Between 1996 and 2018, large-scale investigations of 180 criminal groups involving 2305 offenders have been studied. On average, 10 to 15 offenders are involved in a criminal group, but smaller or larger groups and criminal networks also exist. Based on the criminal investigations, we are able to tell in which type of organized crime an individual was involved. Furthermore, for each individual, we are able to tell if he or she had a leading function in a criminal group, or acted as a lower-level offender.² Leaders are those with an executive and/or more or less autonomous function in a criminal group, such as ringleaders, coordinators managing concrete activities, and facilitators/enablers delivering a service or good to a criminal group. Lower-level offenders directly execute criminal acts, such as the transport of illegal goods.

Offending. For information on offending over the life course, we used the Dutch Offender Index (OBJD). For 1921 of all 2305 offenders (83.3 percent) involved in the criminal groups, offence data were available.³ For each individual in this final sample of 1921 offenders, this provides us with information on his or her criterion case in organized crime and all other offences registered at the Dutch Public Prosecutor's Office from age 12 (the minimum age of legal responsibility in the Netherlands) up to 2016 or death (if this occurred prior to 2016). Offences also include minor offences that the sub-district judge has dealt with. These cases make up a minority of criminal cases in the sample. For each offence, information is available on the timing and type of crime (violent, property, drugs or other type of crime), individual characteristics (for example, age, country of birth) and settlement (for example, if an unconditional prison sentence was imposed and for how long). Because prison sentences are not a pure reflection of the seriousness of the offence (individual circumstances and offending history can affect the sentence), for the description of the full sample and comparison of the offender subgroups we also used a second measure for the seriousness of an offence. Based on the statutory maximum punishment under Dutch law, we distinguished between (1) minor offences, that is, offences up to 4 years punishment threat, (2) moderate offences, that is, offences with a 4 to 8 years punishment threat, and (3) serious offences, that is, offences with more than 8 years punishment threat. Because this measure is independent of individual circumstances and offending history, it is a more objective reflection of the seriousness of the particular offence and does not depend on the conditions under which the offence took place. In the figures showing the development of offending by age and in the statistical models estimating the effect of employment on offending we included information on all offences.

Education, employment and income. Information on educational background, employment, income and financial support was collected from Statistics Netherlands for all 1,921 individuals in the sample. The highest level of education attained, measured in 2015, was categorized as primary, secondary or higher education.⁴ Employment, income and financial support were all measured longitudinally on a yearly basis from 1999 to 2016, covering 18 years of each individual's life. Several measures were used to summarize employment during this period. First, it was determined whether an individual was ever employed (that is, having a contract for at least 1 day) during the 18-year observation period. Second, we calculated the number of contracts and the average duration of a contract in days. Third, lambda-scores represent the mean number of employed days yearly during the observation period. Fourth, we measured whether individuals had ever been self-employed during the observation period, based on officially registered businesses of their own. Finally, we constructed a longitudinal dichotomous variable indicating for each year whether an individual was employed. An individual was considered employed in a particular year if he or she was employed for at least 90 days during that year (see Verbruggen et al., 2012). This longitudinal dichotomous variable was used in the figures depicting employment participation by age and in the statistical models estimating the effect of employment on crime. As for employment, several measures were used to examine legal earnings. For each individual and for each calendar year, his or her total legal income was registered both in euros and in percentile points, representing the individual's income in the population distribution in the Netherlands. The total amount

of social benefits individuals received was also registered in percentile points for each year. Furthermore, for each individual, the proportion of years with a positive income was calculated over the entire observation period.

Analyses

Simple comparisons of background characteristics, offending, employment and income were carried out between (1) organized crime offenders and the general population,⁵ (2) leaders and lower-level offenders, and (3) offenders who were ever self-employed, offenders who were never self-employed but had been employed on the payroll at some point in time during the observation period, and offenders who were never employed during the observation period.

Furthermore, the effects of employment, income and financial support on offending were estimated. Although a randomized controlled trial is typically the best design to estimate causal effects on crime (because it rules out selection), in the case of this study such a design would be unrealistic. Furthermore, obtaining a job or becoming unemployed in real life does not occur at random. Hence, we use a different approach to control for selection bias. We use negative binomial fixed effects models to estimate the effects of time-varying effects of employment, income and financial support on offending.

Fixed effects models control for unobserved differences between individuals by measuring only within-individual change over time, ruling out any stable – measured or unmeasured – differences between individuals. Although fixed effects models do not control for unobserved variables that are time-varying, by including variables such as age, income and financial support in the model, we remove the potential bias introduced by these confounders. Since the dependent variable counts the number of offences, fixed effects models are estimated using a negative binomial model.⁶ Unfortunately, we are not able to control for exposure time, since we have no information on the execution of prison sentences available.

For the current study, several fixed effects models are estimated to determine and compare the effects of employment for several subgroups of organized crime offenders. First, the effects of employment on crime for the full sample are estimated. Second, because role in the organized crime case is a time-stable trait of offenders, separate models are estimated for leaders and lower-level offenders,

For the full sample and each of the subsamples (leaders and lower-level offenders), the following negative binomial model is estimated:

$$f(y_{it} | \lambda_{it}, \theta) = \frac{\Gamma(\lambda_{it} + y_{it})}{\Gamma(\lambda_{it})\Gamma(y_{it} + 1)} \left(\frac{\theta_i}{1 + \theta_i} \right)^{y_{it}} \left(\frac{1}{1 + \theta_i} \right)^{\lambda_{it}},$$

where θ_i is assumed to be constant over time for each individual (Rabe-Hesketh and Everitt, 2006). The dependent variable λ_{it} is a count of the number of convictions of individual i ($i = 1, \dots, N$) at time t ($t = 1, \dots, T$). For each model, λ_{it} is defined differently, depending on the covariates included in the model.

$$E(\lambda_{it} | x_{it}, \delta_i) = \exp(\delta_i + \beta_0 + \beta_1 \text{Age}_{it} + \beta_2 \text{Age}_{it}^2 + \beta_3 \text{Employment}_{it})$$

$$E(\lambda_{it} | x_{it}, \delta_i) = \exp(\delta_i + \beta_0 + \beta_1 \text{Age}_{it} + \beta_2 \text{Age}_{it}^2 + \beta_3 \text{Employment}_{it} \\ + \beta_4 \text{Income}_{it} + \beta_5 \text{Support}_{it})$$

$$E(\lambda_{it} | x_{it}, \delta_i) = \exp(\delta_i + \beta_0 + \beta_1 \text{Age}_{it} + \beta_2 \text{Age}_{it}^2 \\ + \beta_3 \text{Selfemployment}_{it} + \beta_4 \text{Payroll}_{it})$$

$$E(\lambda_{it} | x_{it}, \delta_i) = \exp(\delta_i + \beta_0 + \beta_1 \text{Age}_{it} + \beta_2 \text{Age}_{it}^2 + \beta_3 \text{Selfemployment}_{it} \\ + \beta_4 \text{Payroll}_{it} + \beta_5 \text{Income}_{it} + \beta_6 \text{Support}_{it})$$

where x_{it} is the vector of the respective covariates and δ_i is the fixed effect of individual i (see Cameron and Trivedi, 1998).

In these models, the independent variables are all time-varying, starting with Age/10 and Age/10 modelled as a quadratic. Employment_{it} indicates whether or not individual i was employed for at least 90 days during year t , Income_{it} indicates the legal income of individual i in year t , and Support_{it} is the amount of social benefits received by person i in year t . For ease of interpretation, percentile scores for income and financial support were divided by 1000. $\text{Selfemployment}_{it}$ indicates whether individual i was ever self-employed in year t and Payroll_{it} indicates whether individual i was ever employed on the payroll in year i .

Results

Organized crime offenders and the general population

In order to investigate differences between organized crime offenders and the general population in the Netherlands, Table 1 shows prevalence rates of a number of background characteristics: country of birth, educational level, employment history, income level, and financial support. The majority of organized crime offenders were born in the Netherlands (61 percent), although this group was underrepresented compared with the Dutch national average (87 percent). In particular, offenders born in Suriname (8 percent), Turkey (7 percent), Morocco (2 percent) and the former Netherlands Antilles (2 percent) were over-represented, together comprising almost one-fifth of the sample. Information about the highest attained educational level was available for less than half of the sample. Valid percentages indicate that the overall educational level is low: 33 percent of male offenders and 25 percent of female offenders finished only primary education. Employment levels in the organized crime sample are also relatively low. Organized crime offenders are likely to have experienced long-term unemployment: 25 percent of men and 17 percent of women remained unemployed for the entire observation period. If offenders in our sample

Table 1. Descriptives of the organized crime sample and the general population.

	Organized crime offenders		General population	
	Male	Female	Male	Female
	Mean (SD) / N percent			
	90 percent (n = 1737)	10 percent (n = 183)	50 percent (N = 8,527,304)	50% percent (N = 8,564,043)
<i>Country of birth</i>				
The Netherlands	61%	62%	88%	87%
Suriname	8%	8%	1%	1%
Turkey	8%	1%	1%	1%
Morocco	2%	2%	1%	1%
Former Netherlands Antilles	2%	4%	1%	1%
Other western countries	5%	8%	2%	6%
Other non-western countries	14%	16%	6%	3%
<i>Educational level^a</i>				
Primary education	33%	25%	10%	12%
Secondary education	56%	68%	60%	60%
Higher education	11%	7%	30%	28%
<i>Employment</i>				
Ever employed during observation period	75%	83%	94% ^a	94% ^a
Number of contracts per year	0.4 (0.4)	0.6 (0.5)	–	–
Average duration of contract (in days)	70.48 (105.7)	68.3 (109.5)	–	–
λ (mean number of employed days)	91.0 (104.3)	116.7 (113.6)	–	–
Ever self-employed during observation period	38%	22%	19% ^a	12% ^a
<i>Income</i>				
Mean income per observed year (K€)	17.76 (22.839)	15.76 (15.31)	47.4 ^b	28.9 ^b
Mean income percentile per observed year	27.9 (25.7)	28.7 (21.3)	–	–
Percentage of observed years with positive income	71%	79%	–	–
<i>Financial support</i>				
Ever received social benefits during observation period	31%	44%	16% ^a	20% ^a

Notes:

a. Based on the proportion of the labour force in 2016 (CBS Statline).

b. Based on the national average in 2016 (CBS Statline).

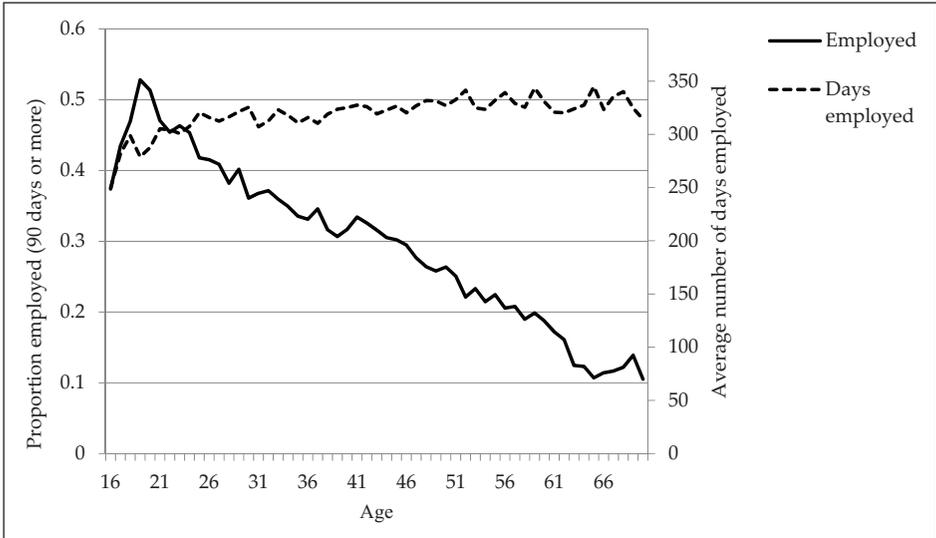


Figure 1. Employment participation over the life course.

are employed, their working careers are characterized by short contracts and relatively many job switches. Despite this overrepresentation of disrupted employment careers, self-employment among organized crime offenders is relatively high: 38 percent of men have had a business of their own, and among women this is 22 percent. Income levels are below average and fall within the 27th and 28th percentiles. The number of organized crime offenders having received social security benefits during the observation period is relatively high (32 percent for the entire sample), in particular for women (44 percent). On the one hand, these findings suggest that organized crime offenders are low-educated and that holding on to the same job may be problematic. On the other hand, we find that relatively many offenders have started a business of their own.

To examine the development of employment over the life course, Figure 1 depicts the proportion of the sample being employed by age (solid line, primary axis) and the average number of days employed among active workers (dotted line, secondary axis). Employment participation shows a decline from age 19 onwards, going from 53 to 10 percent. This suggests that organized crime offenders stop their legal employment, either forced or by choice, as they become older. For those who remain employed, the average number of days employed increases slightly by age. A cautionary note is that the sample size drops below 50 percent after age 50, because follow-up data were limited between 2003 and 2015 and organized crime offenders were on average age 38 (SD = 9.8) when the follow-up started.

Organized crime offenders distinguished by role and employment status

Offenders fulfilling a leading role in an organized crime group can be distinguished from lower-level offenders. Leaders have an executive and/or more or less autonomous function, whereas lower-level offenders perform concrete acts. While 15 percent fulfilled a

leading role in a criminal group, 85 percent were a lower-level offender. Male offenders are overrepresented among the leaders, whereas lower-level offenders show an overrepresentation of offenders born in the Netherlands (Table 2). Leaders more often than lower-level offenders have completed higher education, whereas similar percentages of both groups completed only lower education. Leaders are somewhat older at the time of their first offence (27.8 versus 26.5). Furthermore, leaders commit fewer minor offences and more serious offences than lower-level offenders. Although leaders and lower-level offenders received an equal number of separate prison sentences in their careers, leaders spent more time in prison. Apart from these differences, leaders' and lower-level offenders' overall offending careers do not differ much in terms of frequency and development (see also Figure 2).

Compared with leaders, lower-level offenders have better employment outcomes. Lower-level offenders more often are employed at some point during the observation period, have more contracts and are employed more days during a year. Figure 3 demonstrates that these differences can mainly be attributed to better employment outcomes between age 35 and age 50 for lower-level offenders. Employment participation of leaders drops from around 60 percent in late adolescence to around 25 percent in the late thirties. This might be related to the fact that leaders spent more time in prison, which diminishes their chances on the labour market. Furthermore, at that time, employed leaders are employed half the average number of days they were working during late adolescence. Lower-level offenders show a smaller decline in employment levels: participation drops from around 50 percent in late adolescence to around 35 percent in the late thirties.

In order to explore employment careers and the interdependence with involvement in (organized) crime, we distinguish between individuals who were employed at some point in time during the observation period, and those who were never legally employed during this period. To further investigate the role of employment for organized crime offenders, we distinguish between offenders who have ever been self-employed (that is, had their own business) during the observation period, and offenders who were never self-employed but had been working on the payroll. More than one-third (36.5 percent) of the organized crime offenders were self-employed at some point during the 18-year observation period. Almost half of the offenders (46.2 percent) had never been self-employed, but had worked on the payroll at some point, whereas almost one out of six (17.3 percent) organized crime offenders had never been legally employed during the entire observation period.

Male offenders born in the Netherlands are overrepresented among the self-employed offenders (Table 3). Compared with both groups of employed offenders, those who had never been employed much more often had completed only primary education. Whereas unemployed offenders were older at the time of their first offence and at the time of the index case, no significant differences were found between the total number of offences committed by the three groups. Unemployed offenders, however, more often received a prison sentence and spent more time in prison than employed offenders. Figure 4 shows that never employed offenders seem somewhat less active during the early years of their criminal careers, but become more active in crime than employed offenders later on in their lives.

Table 2. Descriptives of the leaders and other organized crime offenders (N = 1921).

	Leaders (N = 284)	Lower-level offenders (N = 1637)	Full sample (N = 1921)
	Mean (SD) / N percent		
Male*	94%	90%	91%
Born in the Netherlands**	50%	63%	61%
<i>Educational level</i> †*			
Primary education	31%	32%	32%
Secondary education	52%	59%	58%
Higher education	17%	9%	10%
<i>Offending</i>			
Age at first offence*	27.8 (10.2)	26.5 (10.3)	26.7 (10.3)
One-shot offender	7%	9%	9%
Number of offences in career	10.4 (10.7)	11.0 (11.4)	10.9 (11.3)
Number of violent offences in career	0.9 (1.7)	1.0 (2.0)	1.0 (1.9)
Number of property offences in career	2.2 (5.0)	2.2 (4.2)	2.2 (4.4)
Number of drugs offences in career*	1.0 (1.3)	0.8 (1.3)	0.9 (1.3)
Number of other type of offences in career	6.3 (5.9)	6.9 (7.1)	6.8 (7.0)
Number of minor offences in career*	4.7 (5.3)	5.6 (6.5)	5.4 (6.4)
Number of moderate offences in career	4.6 (6.6)	4.6 (6.2)	4.6 (6.2)
Number of serious offences in career***	1.2 (1.2)	0.9 (1.3)	0.9 (1.2)
At least one prison sentence in career	74%	74%	74%
Number of prison sentences in career	2.6 (3.4)	2.6 (3.8)	2.6 (3.7)
Time spent in prison (years) in career***	3.6 (4.7)	2.1 (3.5)	2.3 (3.7)
Age at index case in organized crime	38.4 (9.0)	37.9 (10.0)	38.0 (9.8)
Prison sentence index case***	48%	35%	0.4 (0.5)
Length of prison sentence index case***	3.9 (2.8)	1.9 (2.0)	2.3 (2.3)
<i>Employment</i>			
Ever employed during observation period*	72%	76%	76%
Number of contracts***	0.3 (0.4)	0.5 (0.5)	0.4 (0.5)
Average duration of contract (in days)	62.6 (97.7)	71.5 (107.3)	70.3 (106.1)
λ (mean number of employed days)**	76.4 (94.3)	96.4 (107.1)	93.4 (105.5)
Ever self-employed during observation period	35%	37%	37%
<i>Income</i>			
Mean income per observed year (K€)	16.44 (24.35)	17.76 (21.84)	17.56 (22.22)
Mean income percentile per observed year**	23.2 (24.6)	28.8 (25.3)	27.9 (25.3)
Proportion of observed years with positive income***	0.6 (0.4)	0.7 (0.3)	0.7 (0.3)
<i>Financial support</i>			
Ever received social benefits during observation period	29%	33%	33%

Note: Differences between leaders and offenders with another role are indicated: * $p < .05$, ** $p < .01$, *** $p < .001$.



Figure 2. Offending over the life course for leaders and lower-level offenders.

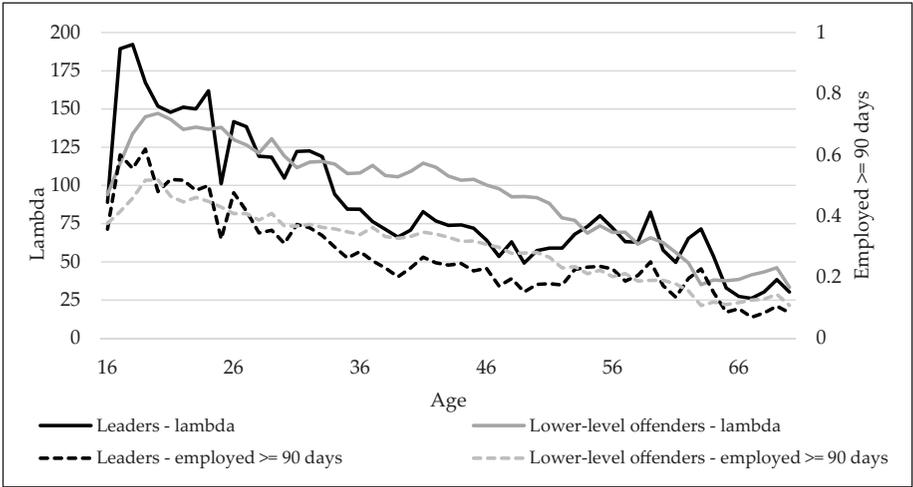


Figure 3. Employment over the life course for leaders and lower-level offenders.

As a logical consequence of the selection of a subgroup of never employed offenders, all employment measures are equal to zero for this group. Four out of five (81 percent) of the self-employed offenders also held a job on the payroll at some point during the observation period. Self-employed offenders had the highest average yearly income, followed by offenders on the payroll and offenders who were never employed. Figure 5 shows that

Table 3. Descriptives of organized crime offenders who are self-employed, are on the payroll or were never employed.

	Self-employed organized crime offenders (N = 701)	Organized crime offenders on the payroll (N = 888)	Organized crime offenders never employed (N = 332)
	Mean (SD) / N percent		
Male***	94%	87%	92%
Born in the Netherlands***	66%	61%	51%
Educational level***			
Primary education	28%	29%	60%
Secondary education	61%	60%	34%
Higher education	11%	11%	6%
Offending			
Age at first offence***	26.5 ^A (10.1)	26.0 ^A (10.2)	28.8 ^B (10.8)
One-shot offender**	6%	11%	8%
Number of offences in career	11.2 (10.2)	10.6 (12.1)	11.3 (11.4)
Number of violent offences in career	1.0 (1.8)	1.0 (2.0)	1.0 (2.0)
Number of property offences in career	2.0 (3.4)	2.4 (5.1)	2.2 (3.8)
Number of drugs offences in career*	0.8 ^{AB} (1.2)	0.8 ^A (1.2)	1.0 ^B (1.6)
Number of other type of offences in career*	7.3 ^A (6.7)	6.3 ^B (7.0)	7.1 ^{A^B} (7.4)
Number of minor offences in career**	6.0 ^A (6.1)	4.9 ^B (6.2)	5.6 ^{A^B} (7.0)
Number of moderate offences in career	4.3 (5.2)	4.7 (7.1)	4.7 (5.8)
Number of serious offences in career	0.8 (1.2)	0.9 (1.2)	1.0 (1.4)
At least one prison sentence in career***	73%	73%	81%
Number of prison sentences in career***	2.2 ^A (3.1)	2.6 ^A (4.0)	3.3 ^B (4.2)
Time spent in prison (years) in career***	2.0 ^A (3.6)	2.1 ^A (3.3)	3.5 ^B (4.9)

(Continued)

Table 3. (Continued)

	Self-employed organized crime offenders (N = 701)	Organized crime offenders on the payroll (N = 888)	Organized crime offenders never employed (N = 332)
Age at index case in organized crime***	37.9 ^A (9.3)	36.5 ^A (9.4)	41.4 ^B (10.8)
Prison sentence index case*	36% ^{AB}	35% ^A	43% ^B
Length of prison sentence index case**	2.1 ^A (2.2)	2.2 ^A (2.2)	2.8 ^B (2.6)
<i>Employment</i>			
Ever employed during observation period***	81% ^a	100%	0%
Number of contracts***	0.4 ^A (0.4)	0.6 ^B (0.5)	0 ^C
Average duration of contract (in days)**	58.3 ^A (90.6)	77.9 ^B (114.2)	0 ^C
λ (mean number of employed days)***	89.0 ^A (93.4)	131.8 ^B (111.6)	0 ^C
Ever self-employed during observation period***	100%	0%	0%
<i>Income</i>			
Mean income per observed year (K€)***	21.61 ^A (26.79)	18.42 ^B (20.60)	6.74 ^C (7.45)
Mean income percentile per observed year***	33.2 ^A (25.7)	29.6 ^B (25.8)	12.4 ^C (15.2)
Proportion of observed years with positive income***	0.8 ^A (0.3)	0.8 ^A (0.3)	0.5 ^B (0.5)
<i>Financial support</i>			
Ever received social benefits during observation period***	26%	36%	37%

Notes: Significant differences between offenders with a different employment status are indicated per ratio variable (* $p < .05$, ** $p < .01$, *** $p < .001$). Within each row, different superscripts indicate a significant difference between offenders with different roles ($p < .05$). For example, A and B differ significantly; AB is equal to A and B. a.81 percent of those ever self-employed have been on the payroll at some point during the observation period.

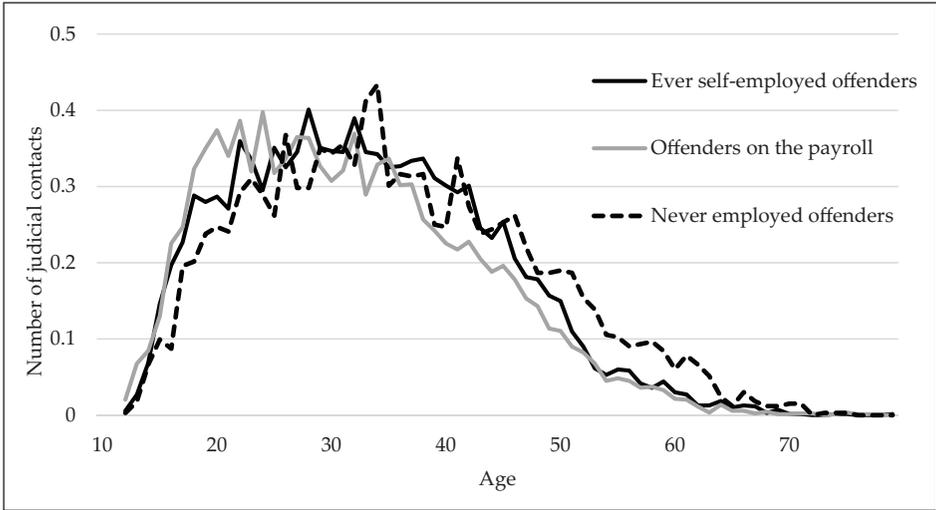


Figure 4. Offending over the life course for self-employed and employed organized crime offenders.

the employment rates of self-employed offenders and offenders on the payroll diverge from their mid-twenties on. This is probably the time when the self-employed offenders start running their own business and, therefore, are not on the payroll any more.

Effects of employment on offending

Table 4 gives an overview of the model characteristics of four negative binomial fixed effects regression models estimated on the full sample. The main advantage of this

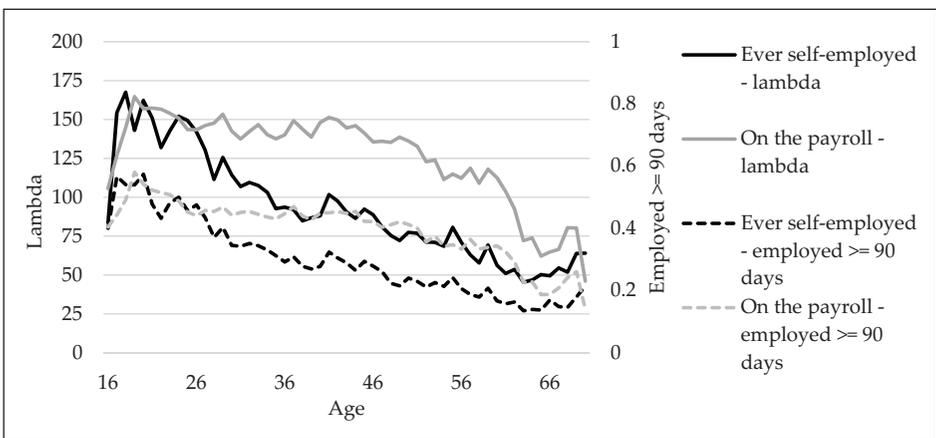


Figure 5. Employment over the life course for self-employed and employed organized crime offenders.

Table 4. Effect of employment on offending: Full sample.

	Model 1	Model 2	Model 3	Model 4
	NB	NB	NB	NB
	B (SE)	B (SE)	B (SE)	B (SE)
<i>Fixed effects coefficients</i>				
Constant	.497* (.193)	.619** (.197)	.568** (.195)	.724*** (.200)
Age/10	.546*** (.089)	.509*** (.090)	.526*** (.090)	.477*** (.091)
Age/10 ²	-.128*** (.011)	-.127*** (.011)	-.126*** (.011)	-.125*** (.011)
Employed	.092*** (.030)	.083* (.034)	.205*** (.050)	.215*** (.051)
Self-employed			.054 (.033)	.024 (.038)
Payroll-employed				.024*** (.007)
Income from employment/10		.019*** (.007)		.005*** (.013)
Financial support/social security benefits/10		.055** (.013)		.005*** (.013)
Log likelihood	-16,248	-16,232	-16,241	-16,226

†p < .10, *p < .05, **p < .01, ***p < .001.

within-individual analysis is that it eliminates potential bias by controlling for stable observed and unobserved individual characteristics. Note that in addition to estimating the fixed effects models for the full sample, all models are also estimated separately for organized crime offenders in a leadership position and lower-level offenders (Table 5 and Table 6).

The results in Table 4 show the effects of employment on the number of convictions. Model 1 indicates that being employed, in general, is associated with a 10 percent increase ($IRR = \exp(.092)$) in offending ($p < .01$). Controlling for both income from employment and financial support, Model 2 shows that employment is still associated with increased offending. Though income and financial support are both associated with the number of offences, the estimates are close to zero and we chose not to interpret the effects. Distinguishing self-employment and payroll-employment in Model 3, the estimates show that, for organized crime offenders, being self-employed is significantly associated with a 23 percent increase ($IRR = \exp(.205)$) in the estimated number of offences ($p < .001$). For payroll-employment, there is no such an effect.

For organized crime offenders in leadership positions, the effects of employment, self-employment and payroll-employment seem to be stronger compared with the full sample results (Table 5). Model 1 shows that employment is related to a 47 percent increase ($IRR = \exp(.384)$) in offending for leaders ($p < .001$). The effect of employment becomes smaller, but still significant, when controlling for income and financial support in model 2. Model 3 shows not only that self-employment is significantly correlated with a 68 percent increase ($IRR = \exp(.521)$) in conviction rates ($p < .001$), but also that payroll-employment is associated with a 41 percent increase ($IRR = \exp(.344)$) in the estimated number of offences ($p < .001$).

Finally, for organized crime offenders in lower-level roles, no significant effect of employment on offending was found (Table 6, Model 1). Model 3 shows that self-employment has a significant – yet smaller – effect on offending: self-employment is associated with an 18 percent increase ($IRR = \exp(.164)$, $p < .01$) in conviction rates.

Conclusions and discussion

The commonly held view in life-course criminology is that employment is a key turning point promoting desistance from crime (see, for example, Apel and Horney, 2017; Uggen and Wakefield, 2008; Van der Geest et al., 2011; Verbruggen et al., 2012). In contrast, qualitative studies indicate that organized crime offenders take advantage of work settings to develop criminal activities (see, for example, Kleemans and De Poot, 2008; Kleemans and Van de Bunt, 2008; Van Koppen, 2013). The current study aimed to quantitatively examine the association between employment and crime for organized crime offenders. In a large dataset of 1921 organized crime offenders, employment participation of organized crime offenders is relatively low compared with the general population. These offenders, however, are twice as often self-employed; 38 percent of the organized crime offenders owned a company at some point during the observation period. Moreover, owning a business is associated with a 23 percent increase in offences for organized crime offenders.

Table 5. Effect of employment on offending: Leaders.

	Model 1	Model 2	Model 3	Model 4
	NB B (SE)	NB B (SE)	NB B (SE)	NB B (SE)
<i>Fixed effects coefficients</i>				
Constant	1.061 (.649)	1.559* (.672)	1.119† (.652)	1.649* (.675)
Age/10	.155 (.284)	-.001 (.289)	.139 (.285)	-.027 (.290)
Age/10 ²	-.071* (.033)	-.060† (.034)	-.071* (.033)	-.059† (.034)
Employed	.384*** (.084)	.273** (.097)		
Self-employed			.521*** (.144)	.449** (.149)
Payroll-employed			.344*** (.092)	.217* (.104)
Income from employment/10		.061*** (.017)		.063*** (.017)
Financial support/social security benefits/10		.062 (.038)		.063† (.038)
Log likelihood	-2,208	-2,200	-2,207	-2,199

†p < .10, *p < .05, **p < .01, ***p < .001.

Table 6. Effect of employment on offending: Lower-level offenders.

	Model 1	Model 2	Model 3	Model 4
	NB	NB	NB	NB
	B (SE)	B (SE)	B (SE)	B (SE)
<i>Fixed effects coefficients</i>				
Constant	.440* (.203)	.525* (.206)	.511* (.205)	.624** (.209)
Age/10	.601*** (.094)	.575*** (.095)	.580*** (.095)	.545*** (.096)
Age/10 ²	-.136*** (.012)	-.136*** (.012)	-.135*** (.012)	-.134*** (.012)
Employed	.051 (.032)	.059 (.036)		
Self-employed			.164** (.053)	.181** (.054)
Payroll-employed			.013 (.035)	.003 (.040)
Income from employment/10		.011 (.007)		.016* (.007)
Financial support/social security benefits/10		.054*** (.013)		.054*** (.013)
Log likelihood	-14,031	-14,019	-14,025	-14,015

* $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$.

Comparing leaders and lower-level offenders of a criminal group, it was concluded that employment outcomes are better and income is higher for lower-level offenders. Leaders' employment participation drops from around 90 percent at age 18 to less than 40 percent at age 40. This is a possible indication that lower-level offenders are still living more or less conventional lives, holding a legal job alongside their criminal activities, whereas leaders transitioned into organized crime as their core business. For leaders, it was concluded that both self-employment and employment on the payroll have a positive effect on offending. For lower-level offenders, self-employment was positively related to offending but payroll-employment was not.

Whereas employment seems to inhibit crime for the general population of offenders, it increases offending for organized crime offenders. A common hypothesis is that employment inhibits crime because it structures daily routines and provides legal income and responsibility (Laub and Sampson, 2003). For organized crime offenders, however, legal employment and particularly being self-employed seem to facilitate crime involvement. This effect should be viewed in the context of the unique aspects of organized crime activities and the fact that conventional ties and suitable networks are necessary for successful engagement in organized crime. Being employed can have a different meaning for organized crime offenders: complex criminal activities often require some conventional knowledge, experience, network or capabilities, often available through legitimate employment. Findings from earlier studies already showed that business ownership plays an important role among organized crime offenders, either with primarily legal intentions or only to cover criminal activities (Kleemans and Van de Bunt, 2008; Kruisbergen et al., 2015; Van Koppen and De Poot, 2013). Our findings provide a quantitative test of this relationship and confirm that running a business is associated with increased levels of offending. A possible explanation for this finding is that running a business allows individuals to work independently and unsupervised and that it may serve as a cover for illegal activities or income. Our findings also show that payroll-employment does not inhibit offending, suggesting that the relationship between employment and crime is different from the relationship typically found in general offender populations. In fact, organized crime offenders may be adapted to society in many ways, including legitimate employment and legal sources of income (for example, Block and Chambliss, 1981; Steffensmeier and Ulmer, 2005), although their working careers are characterized by high levels of unemployment, short contracts and many job switches. Organized crime offenders, therefore, might differ from the average 'street criminal', who often has low self-control, few responsibilities and weak bonds to society.

The large and detailed dataset of organized crime offenders we used for this study, and the fact that we were able to collect and combine individual-level information on crime, employment and income from different datasets, is unique. However, a cautionary note is that our sample is not a random selection of organized crime offenders and could therefore be biased in a number of ways. As is common in criminological research, police priorities determine and provide the criminal activities and offenders we can study. Additionally, the Dutch Organized Crime Monitor adopted a strategic selection procedure, highlighting the heterogeneity and empirical detail of criminal activities and offenders in organized crime (for more information, see Kleemans, 2014).⁷ As a result, the sample is rich in its

variety and the information available on the offenders, but our findings should not be generalized beyond the context of the analysed cases and offenders.⁸

We also have to remain cautious about the fact that we observed only offences registered in the Netherlands. Especially in this offender group, among which 39 percent were born abroad, offenders may also have committed offences outside the Netherlands that we are not aware of and, therefore, we may underreport their level of offending. However, given that our measures on legal employment, income and social benefits are very complete (using data from Statistics Netherlands) and that in the fixed effects models we focused only on the years during which offenders were living in the Netherlands, the estimated effects of employment on crime should not be biased.

Finally, we were not able to control for incapacitation in our analyses. Since leaders more often received a prison sentence and spent more time in prison than lower-level offenders, their lower employment rates may in part result from their time spent in prison and the subsequent stigma. However, the parameters representing the effect of employment on crime are not biased: if during the observation period an unobserved incarceration spell occurs, this causes an individual to be unemployed and also (by means of incapacitation) reduces the individual's risk of offending. Even if it were the case that, during a period of incarceration, an offender continues to run a business 'on paper', then our findings would be an underestimation of the effect of self-employment on crime.

As far as we know, this is the first large-scale study providing a quantitative test of the effects of payroll-employment and self-employment on organized crime. We distinguished between different types of organized crime offenders and our findings substantiate what various qualitative studies have suggested. Although we were able to shed light on both self-employment and employment on the payroll, the kind of professional positions and the economic sector in which offenders are working remained unknown. Distinguishing between these qualitatively different jobs is a potential avenue for future research. In addition, attention should also be paid to the potential differential impact of employment on different types of crime (for example, violent crime, property crime or drugs offences).

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Notes

1. It should be noted that the sample is by no means a random sample of organized crime groups or organized crime offenders. As in all criminological studies using register data, police priorities to a large extent influence which cases are investigated. Cases were selected for the Organized Crime Monitor in such a way that a wide cross-section of empirical cases are included, covering various types of organized crime groups and various types of organized crime activities.
2. An offender is considered a leader when he or she fulfilled this role within the organized crime group at some point in time, also when he or she started his or her involvement as a lower-level offender.
3. There are three reasons why an individual's offence data were not found. First, offenders may have been prosecuted outside the Netherlands and may never have been convicted before or after in the Netherlands. Second, more technical reasons, such as different spelling of names or surnames, may underlie the failure to find individuals in the official registers. Third, prosecution of an individual might have been cancelled.
4. Unfortunately, information on education is missing for half of the sample. In all tables, valid percentages are reported, including only the 46 percent of the sample for which educational level is known.
5. Men and women are distinguished in this comparison because of the unequal gender distribution between these groups. Information on the general population is partly obtained from the open resource database Statline (<https://opendata.cbs.nl/statline/#/CBS/en/>).
6. Negative binomial models are preferred over Poisson models, because they show a better fit to the data.
7. Richness of information is an important selection criterion. Some cases were selected because they include much information on the links between organized crime offenders and legal society.
8. Earlier studies on this sample showed that findings are quite robust across several subgroups within the sample (based on type of activities, role, criminal pathway), indicating that organized crime offenders share characteristics that are portrayed in the total sample.

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