



Personal networks and crime victimization among Swedish youth

Gerald Mollenhorst, Christofer Edling & Jens Rydgren

To cite this article: Gerald Mollenhorst, Christofer Edling & Jens Rydgren (2018): Personal networks and crime victimization among Swedish youth, Journal of Scandinavian Studies in Criminology and Crime Prevention, DOI: [10.1080/14043858.2018.1502945](https://doi.org/10.1080/14043858.2018.1502945)

To link to this article: <https://doi.org/10.1080/14043858.2018.1502945>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 21 Aug 2018.



Submit your article to this journal [↗](#)



Article views: 18



View Crossmark data [↗](#)

Personal networks and crime victimization among Swedish youth

Gerald Mollenhorst^a, Christofer Edling^b and Jens Rydgren^c

^aDepartment of Human Geography and Spatial Planning, Utrecht University, Utrecht, the Netherlands;

^bDepartment of Sociology, Lund University, Lund, Sweden; ^cDepartment of Sociology, Stockholm University, Stockholm, Sweden

ABSTRACT

We combine routine activity theory, lifestyle-victimization theory, and a social network perspective to examine crime victimization. In particular, we study to what extent crime victimization is associated with having close contacts who have been victimized and/or who engage in risky lifestyles. We use the data (collected in 2014) of 1,051 native Swedes and 1,108 Iranian and Yugoslavian first- or second-generation immigrants in Sweden who were all born in 1990. They were asked to describe their personal characteristics, various behaviours, and past personal experiences with crime victimization, as well as those of the five persons with whom they most often spend their leisure time. Our findings support the network perspective: crime victimization is negatively associated with the number of close contacts an individual mentions but is substantially more likely for those who have many close contacts who have themselves been victimized. In terms of a risky lifestyle that may enhance the likelihood of being victimized, we found only that individuals who get drunk frequently were at somewhat higher risk of being victimized. To guard young individuals against crime victimization, it might thus be worthwhile to focus more on with whom they associate than on their potentially risky lifestyles or attitudes.

ARTICLE HISTORY

Received 13 September 2017
Accepted 23 May 2018

KEYWORDS

Crime victimization; personal networks; routine activity theory; lifestyle-victimization theory; Sweden; youth

1. Introduction

Although most young people are not frequently victims of any type of crime (with or without violence), a substantial portion of the Swedish population has nonetheless been victimized. The Swedish Crime Survey, for example, reports that during 2015, approximately 13 per cent of the population aged 16–79 was exposed to some form of criminal offence, including assault, threat, sexual offence, robbery, fraud, and harassment (NTU, 2017: 84). For 20–to 24– year olds, the corresponding figure was close to 21 per cent. In their paper on trends in youth crime and victimization in Sweden, Svensson and Ring (2007) showed that for the year 2005 a little more than 10 per cent of youths reported having been exposed to threats during the past year, approximately 5 per cent reported having been exposed to serious violence, more than 20 per cent reported having been exposed to less serious violence, and approximately 30 per cent reported that

CONTACT Gerald Mollenhorst  g.w.mollenhorst@uu.nl

© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group. This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

something had been stolen from them over the past year (see also Cater, Andershed, & Andershed, 2014; Martens, 2001). In our sample of 23- to 24-year-old native Swedes and first- and second-generation immigrants from the former Yugoslavia and Iran who are currently living in Sweden, almost 13 per cent report having been a victim of crime during the past year, the reported crimes including threats of violence, sexual abuse, sexual harassment, physical abuse, robbery, theft of something valuable, burglary, threatening with a weapon, and mobbing. Although it is difficult to compare the figures reported in different studies that used differing measures and contexts, this figure seems somewhat lower than the related figures presented in the aforementioned studies.

In this study, we combine theoretical insights and arguments from routine activity theory (e.g. Cohen & Felson, 1979), lifestyle-victimization theory (e.g. Hindelang, Gottfredson, & Garofalo, 1978), and social network research (Schreck, Fisher, & Miller, 2004) to study crime victimization. In the next section, we discuss these theories and formulate hypotheses based on these insights. Our aim is to assess how crime victimization (i.e. being subjected to violence, sexual abuse/harassment, physical abuse, robbery, theft, burglary, mobbing, and threats with weapons) is associated with the composition of personal networks (defined as the five persons with whom the individual spends most of his or her leisure time) and in particular with having close contacts who have been victimized and/or who show risky lifestyles. We assess these associations over and above the effects of the individuals' own characteristics of a risky lifestyle (such as getting drunk, using cannabis, and regularly spending nights out at relatively high-risk places). Because our data set includes many first- and second-generation immigrants from Iran and the former Yugoslavia, we take parental country of origin into account in the analyses. Accordingly, this study contributes to the understanding of crime victimization by simultaneously considering the effects of (a) having victimized or non-victimized close contacts and (b) having close contacts who show or do not show risky lifestyles, while taking into account (c) individual characteristics such as the respondents' sex and parental country of origin, (d) whether respondents have a risky lifestyle themselves, and (e) whether respondents frequently enter relatively high-risk social contexts.

2. Theory and hypotheses

2.1. *Risky lifestyles: risk aversion, high-risk behaviours, and high-risk contexts*

According to routine activity theory, people are more likely to be victimized in situations with a high risk for victimization; situations of this type may occur when a motivated offender and a worthwhile and poorly defended target are spatially and temporally proximate (e.g. Cohen & Felson, 1979; Maxfield, 1987; Miethe, Stafford, & Long, 1987; Miethe, Stafford, & Sloane, 1990; Turanovic & Pratt, 2014; Van Gelder, Averdijk, Eisner, & Ribaud, 2015). Lifestyle-victimization theories add that group membership implies daily routines that determine exposure to risk (e.g. Hindelang et al., 1978; Maimon & Browning, 2012; Miethe et al., 1990; Sampson & Wooldredge, 1987; Schreck et al., 2004; Schreck, Stewart, & Fisher, 2006; Turanovic & Pratt, 2014; Van Gelder et al., 2015). Thus, victimization is affected by individual behaviours and characteristics that may place a person in relatively high-risk situations, such as getting drunk, using drugs, and frequently spending nights out at clubs (Zhang, Welte, & Wieczorek, 2001).¹

Based on these theoretical arguments, we expect that victimization is more likely among individuals who frequently spend nights out at high-risk public going-out places. As Tseloni (2000, p. 422) noted: 'The more outgoing a life one leads, the more he or she is expected to come into contact with potential offenders under conditions conducive to high opportunities of victimization.' According to Sampson (1987), high-risk contexts are public places outside the home where guardianship capacity is low and potential offenders are proximate. Public going-out places are assumed to bring together potential victims and motivated offenders in the absence of capable or motivated guardians. This proposition has repeatedly been supported in empirical studies, the results of which indicated that the likelihood of crime victimization is higher among individuals who frequently spend nights out compared to individuals who stay at home in the evening (Felson, Savolainen, Berg, & Ellonen, 2013; see also Gottfredson, 1984; Jensen & Brownfield, 1986; Maimon & Browning, 2012; Miethe et al., 1987; Sampson & Lauritsen, 1990; Sampson & Wooldredge, 1987; Tseloni, 2000).

In addition, we expect that individuals who have risky lifestyles, indicated by a low level of risk aversion, by frequently getting drunk and by using drugs, face higher levels of crime victimization because their behaviour may relatively more often place them in situations in which they face a high risk of victimization (Felson et al., 2013; Jensen & Brownfield, 1986; Lauritsen, Sampson, & Laub, 1991; Turanovic & Pratt, 2014; Zhang et al., 2001). It is also proposed that persons who have risky lifestyles are also disproportionately offenders, which in turn makes them worthwhile targets for victimization: offenders can be victimized with relative impunity, because offender-victims are less likely to report an offense to the authorities (Jensen & Brownfield, 1986; Ousey, Wilcox, & Fisher, 2011; Sampson & Lauritsen, 1994; Sparks, 1982; Van Gelder et al., 2015). Accordingly, individuals who have risky lifestyles have higher risk of crime victimization because they may be offenders themselves and because of their contact with or proximity to other offenders (Lauritsen et al., 1991). Thus, we formulate the following hypothesis:

The risk of crime victimization is higher for individuals with a low level of risk aversion, for those who regularly get drunk, for those who use drugs, and for those who frequently spend nights out at public going-out places. (Hypothesis 1)

2.2. Network size and content

The basic arguments regarding routine activities and lifestyle-victimization theories come together and are extended in network research. That is, the structural dimensions of personal networks, in combination with the content of personal relationships, affect individual behaviour and exposure to risky situations (cf. Carrington, 2011; Haynie, 2001). Although early research on networks and victimization suggested the protective value of friendships or social networks in general (Hodges, Boivin, Vitaro, & Bukowski, 1999), the content of personal relationships and networks is crucial here: whether an individual's personal contacts have risky lifestyles and/or whether these contacts are themselves victimized. Thus, in line with Schreck et al. (2004, 2006; see also Maimon & Browning 2012; Rokven, De Boer, Tolsma, & Ruiter, 2017), we build upon routine activity and

lifestyle-victimization theories and expect that the influence of personal networks on crime victimization will depend on the level of victimization and risky lifestyles among members of one's network.

Basically, we expect that relationships with network members who have not been victimized and/or who do not have risky lifestyles lead to a lower risk of victimization; having, and in particular being surrounded by, network members who do not have risky lifestyles and who have not been victimized make a person less attractive as a target for violence and imply decreased proximity to motivated offenders. First, these network members are relatively unlikely to be offenders themselves and thus will not victimize their associates; being part of a conventional network also reduces an individual's exposure to potential offenders outside that network (Schreck et al., 2004). Second, we expect that conventional network members are more likely to fulfil the role of a guardian if a person is faced with a potential offender, given that they will be more inclined to sacrifice or to exert themselves on behalf of their close associates (Schreck et al., 2004; see also Gottfredson & Hirschi, 1990). Being surrounded by network members who do not have risky lifestyles and/or who have not been victimized will therefore decrease the likelihood of being subjected to crime.

At the same time, we expect that relationships with network members who have been victimized and/or who have risky lifestyles lead to a greater risk of victimization (a) because of exposure to motivated offenders, (b) because of the absence of guardianship, and (c) because participation and identification with others who have risky lifestyles or who have been victimized may make a person an attractive target (Schreck et al., 2004, 2006). Having victimized network members can be a sign of exposure to motivated offenders who have also subjected these network members to crime and can thus increase an individual's likelihood of being victimized (Rokven, De Boer, Tolsma, & Ruiter, 2017). Having victimized network members also increases the risk of victimization if these victimized network members are simultaneously both victims and offenders. It is recurrently established that victimization and offending are considerably correlated (Jensen & Brownfield, 1986; Lauritsen et al., 1991; Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004; Ousey et al., 2011; Sampson & Lauritsen, 1990; Singer, 1981; Van Gelder et al., 2015); for instance, crime victims may become offenders due to norms that justify retaliation (Singer, 1981; Zhang et al., 2001).

Likewise, having network members with risky lifestyles leads to a greater risk of victimization because their risky behaviour may be a proxy for more serious criminal behaviours. In addition, although certainly not all network members with risky lifestyles will also be offenders and most of them may not be afraid of taking risks, these individuals are relatively less likely to fulfil the role of an effective guardian if one is in a high-risk situation, which can make a person more vulnerable to victimization; network members with risky lifestyles take risks for themselves, not for the benefit of others (Gottfredson & Hirschi, 1990; Jensen & Brownfield, 1986; Lauritsen et al., 1991; Schreck et al., 2004). Finally, participation and identification with victimized network members, especially with those who have risky lifestyles, can make someone a worthwhile target; retaliation is not an uncommon norm in youth groups or subcultures in which risky lifestyle and violent behaviour are encouraged. This may make members of such subcultures potential targets if they provoke violence from outsiders who will take revenge

(Schreck et al., 2004; Singer, 1981). Based on these arguments, we formulate the following hypotheses:

The risk of crime victimization is higher for individuals with a smaller number of network members who do not have risky lifestyles and/or who have not been victimized. (Hypothesis 2)

The risk of crime victimization is higher for individuals with a larger number of network members who have risky lifestyles and/or who have been victimized. (Hypothesis 3)

2.3. Other conditions associated with crime victimization

Although we are mainly interested in the aforementioned explanations for crime victimization, we simultaneously consider the effects of other conditions that were found relevant in other studies on crime, delinquency, a risky lifestyle, and victimization.

While there is ample research on the link between immigration and crime, relatively little is known about differences between natives and immigrants regarding their likelihood of being victimized. Various theoretical arguments have been proposed for a purported higher level of crime among immigrants compared to native citizens (see Hirschi, 1969; Merton, 1957; Sampson & Raudenbush, 1999; Shaw & McKay, 1942; Sutherland, 1934; Tonry, 1997a), and empirical studies using Swedish data also show a higher level of crime victimization among immigrants. Martens (2001) reported that in Sweden immigrants were victims of serious violence (not of property crimes) more often than native Swedes. In addition, according to the Swedish Crime Survey (NTU, 2017), Swedish-born individuals with two foreign-born parents experienced significantly higher exposure to crime (18.3 per cent) than foreign-born individuals (13.7 per cent) and Swedish-born individuals with one or two Swedish-born parents (13.0 per cent). Mears (2001), however, concluded that empirical evidence on the link between immigration and crime is inconclusive or at least indicates that the association differs in different contexts and immigrant groups and between different spatial levels (cf. Hagan & Palloni, 1999; p. 630; see also Martinez, 2000; Tonry, 1997b; Waters, 1999). This suggestion was recently confirmed in a study by Skardhamar, Aaltonen, and Lehti (2014) on crime among immigrants in Norway and Finland. Those authors concluded that there is 'a great deal of heterogeneity in levels of crime between immigrants from different countries, as there exist immigrant groups with both significantly higher and lower rates of crime compared with the majority population' (Skardhamar et al., 2014, p. 120).

Immigration status is intertwined with ethnicity and race, two areas in which ample research has been conducted in the United States in relation to victimization. Lauritsen et al. (1991) found lower levels of victimization among black Americans than among white Americans, although these effects disappeared when delinquent behaviours were taken into account. They added, however, 'it has been suggested that among adults at least, blacks under-report less serious forms of assault and/or that whites overreport minor assaults (Gottfredson, 1986; Skogan, 1981)' (Lauritsen et al., 1991, p. 279). In contrast, Schreck et al. (2004) showed that young black Americans report higher levels of violent victimization even after controlling for attachment to friends and parents and the level of delinquency among their friends. Luo and Bouffard (2016) found that in the United States, race/ethnicity was a significant predictor of victimization, whereas being a first- or second-generation immigrant

had no additional effect. In light of these empirical findings, we cautiously expect immigrants to report higher levels of victimization than native Swedes.

Various studies have indicated that young males and individuals with risky lifestyles are more likely to be victimized than older, female, and risk-averse individuals. Lauritsen et al. (1991), for instance, stated that men are more likely to be victimized because they have more contact with other males, who are disproportionately criminal. Moreover, males also have on average a tendency to greater involvement in deviant and delinquent lifestyles than women. Likewise, Sampson argued that compared to older persons, 'younger persons, particularly males, are more likely to frequent bars, social clubs, and other public places outside the home where guardianship capacity is low and proximity to potential offenders is high' (Sampson, 1987; p. 30; see also Tseloni, 2000). Osgood and colleagues added that 'situations conducive to deviance are especially prevalent in unstructured socializing activities with peers that occur in the absence of authority figures' (Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996; p. 651; see also Haynie & Osgood, 2005; Maimon & Browning, 2012). Although the latter concerned deviancy rather than criminality specifically, it is clear that the common proposition is that young and male individuals are more likely to be victimized because they more frequently enter contexts in which guardianship is low, authority figures are absent, and potential offenders are proximate, which increases the likelihood of being subjected to crime (see Section 2.1).

Our respondents were all 23–24 years old at the time of the interview. Simultaneous inclusion of their sex and a number of indicators of whether they have a risky lifestyle as well as the frequency with which they enter relatively high-risk social contexts thus provides the opportunity to test these mechanisms. In summary, the aim of this study is to assess how crime victimization (i.e. being subjected to violence, sexual abuse/harassment, physical abuse, robbery, theft, burglary, mobbing, and threats with weapons) among Swedish youth is associated with the composition of personal networks (defined as the five persons with whom an individual spends most of his or her leisure time) and in particular with having close contacts who have been victimized and/or who have risky lifestyles, while controlling for the extent to which the participants themselves have risky lifestyles and for a number of relevant background characteristics. Our hypotheses are as follows:

- (1) *The risk of crime victimization is higher for individuals with a low level of risk aversion, for those who regularly get drunk, for those who use drugs, and for those who frequently spend nights out at public going-out places.*
- (2) *The risk of crime victimization is higher for individuals with smaller numbers of network members who do not have risky lifestyles and/or who have not been victimized.*
- (3) *The risk of crime victimization is higher for individuals with larger numbers of network members who have risky lifestyles and/or who have been victimized.*

3. Data and methods

3.1. The sample

We use data from the second wave of a Swedish survey titled *Social Capital and Labour Market Integration: A Cohort Study* (Edling & Rydgren, 2010, 2014). For this survey, a

sample of 5,836 individuals was selected for a telephone interview by Statistics Sweden between October 2009 and January 2010. This sample was drawn by Statistics Sweden from Swedish population registers and consists of three different strata of Swedes from the 1990 birth cohort: (a) all individuals with at least one parent born in Iran, (b) 50 per cent of all individuals with at least one parent born in the former Yugoslavia, and (c) a random sample of 2,500 individuals whose parents were both born in Sweden. Iran and the former Yugoslavia are both major sources of migration to Sweden. Immigrants from Iran are primarily refugees and other humanitarian migrants. The former Yugoslavia has been the origin of extensive labour immigration and more recently also of refugees. With an overall response rate of 51.6 per cent, in 2009 the number of respondents in these groups was 928 former Yugoslavs, 632 Iranians, and 1,382 native Swedes.

In 2014, Statistics Sweden re-interviewed 447 former Yugoslavs, 325 Iranians, and 805 native Swedes who were willing to participate in the survey a second time. The main reason for non-response in wave 2 among those who participated in wave 1 was inability to reach the respondents by telephone (77 per cent of the dropouts), for example, because it was not possible to trace correct telephone numbers. Logit regression analysis of the data for participation in wave 2 revealed that women, first- and second-generation immigrants from Iran or the former Yugoslavia and those who worked or were unemployed (as compared to those who were pursuing an education) at the time of the first wave are overrepresented in the non-response group. In addition, dropouts on average reported a slightly smaller number of network members during the first interview than respondent who participated in wave 2. We included these characteristics in the final analyses.

Next, it was endeavoured to add to the dataset as many of the respondents as possible who belong to the sample population but did not participate in the first wave in 2009. This led to the inclusion of 225 former Yugoslavian, 172 Iranian, and 270 native Swedish respondents. The main reason these respondents did not participate in the first wave was that many of these young people had non-registered prepaid cell phones at that time and therefore could not be interviewed by telephone by Statistics Sweden. In this paper, we only use data from the second wave of the survey because questions about victimization were only asked during the second interview.

Altogether, the second wave includes 672 respondents with roots in the former Yugoslavia, 497 with roots in Iran, and 1,075 native Swedes. All of these respondents, of whom 48 per cent are women and 52 per cent men, were 23–24 years of age at the time of the second interview. According to the Swedish Crime Survey, the 23- and 24-year olds are a high-risk group (NTU, 2017), which makes that this group deserves attention and which implies that there should be some variance to explain. It can also be assumed that relations with peers are important for these young individuals who have just left school and who mostly have not yet established their own family, which means that it is a good starting point for examining the association between social networks and crime victimization. During this interview, each respondent was queried with respect to various sociodemographic characteristics, various behaviours and opinions, and whether they had been victims of different types of crimes, as well as about their personal networks. Eighty-five respondents (i.e. 3.8 per cent) did not provide answers to the central questions about crime victimization (see [Table 1](#) in the Results section). This implies that we performed our multivariate analyses (presented in [Table 2](#)

in the Results section) on a data set that includes 2,159 respondents born in 1990, of whom 632 have roots in the former Yugoslavia, 476 have roots in Iran, and 1,051 are native Swedes.

3.2. Personal network delineation

The personal networks of the respondents were delineated through the following name-generating question: 'Who are the five persons whom you meet and hang around with most often in your leisure time?' Next, interpretive questions were asked with regard to various characteristics of the network members, including whether they had been victimized and the extent to which they had risky lifestyles. This information enables us to examine how crime victimization is associated with personal network characteristics and in particular with the extent to which one has close network members who have been victimized themselves and/or who have risky lifestyles. The way in which we constructed our dependent and independent variables based on this information is described in the following subsections.

3.3. Dependent variable

The dependent variable *crime victimization* is based on the respondents' answers to two questions. First, the respondents were asked: 'Have you been subjected to any type of crime during the past 12 months?' The answer categories were 1 = yes and 2 = no. Those who answered this question in the affirmative were asked a second question: 'What type(s) of crime?' The answer categories were 1 = threats of violence, 2 = sexual abuse, 3 = sexual harassment, 4 = physical abuse, 5 = robbery, 6 = theft of something valuable, 7 = burglary, 8 = threatened with weapon, 9 = mobbing, and 10 = other type of crime. The use of a two-step questioning procedure may lead to under-reporting of relatively less serious types of crime. However, we think that all of the specific types of crime respondents were asked about in this survey are serious enough to be remembered for at least a year. Finally, we constructed the variable for crime victimization by counting the number of types of crime each respondent had been subjected to during the last 12 months.

3.4. Independent variables

To test our hypotheses, we use several indicators related to the characteristics and behaviours of the respondents and of their network members as well as the aggregate characteristics of their personal networks.

Regarding individual characteristics, we consider a number of attitudes and behaviours of the respondents. We use the variables 'using cannabis', 'frequency of getting drunk', and 'risk aversion' as indicators of a risky lifestyle. The variable *using cannabis* is a dichotomous variable with the answer categories 0 = no and 1 = yes. Regarding alcohol consumption, respondents were asked how often during the last 12 months they had consumed enough alcohol to get drunk (the answer categories were 1 = three times a week or more, 2 = one or two times a week, 3 = two or three times a month, 4 = once a month, 5 = less often, and 6 = never). We recoded this variable into a variable called

frequency of getting drunk, which was represented by the categories 0 = never, 1 = less than once per month, 2 = once per month, 3 = two or three times per month, and 4 = once per week or more often. *Risk aversion* is based on the question 'To what extent does the following statement apply to you "I try to avoid risks and err on the side of safety"?' The answer categories were 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree.

Size and composition of personal networks are scored in relation to the five persons (max) whom an individual meets and spends time with most often during his/her leisure time. Two general network characteristics that are included in our models are *network size* (i.e. the aggregate number of network members per respondent) and *network composition*, which is reported in terms of the number of victimized network members, the number of regular alcohol consumers in the network, and the average level of risk aversion among the network members. We note that our measure of network size is limited given that respondents were explicitly asked to name the five persons whom they meet and spend time with most often during their leisure time. This implies that the effects of network size will be strongly underestimated. This truncation of the networks, however, is less problematic for other network characteristics such as network composition. Regarding crime victimization, respondents were asked whether each of their network members had been a victim of any type of crime during the past 12 months (the answer categories were 1 = yes and 2 = no). The variable *number of victims in the network* was then constructed by recoding this variable so that 0 = 'no' and 1 = 'yes' and then aggregating the number of victims per network (i.e. per respondent). Similarly, we constructed variables to indicate the *number of regular alcohol consumers in the network* (members who consumed alcohol at least two or three times per month) and the *average level of risk aversion among network members* (based on a Likert scale with 1 = very risk-seeking and 10 = very careful). Unfortunately, we lack information about the offending behaviours of the network members.

We included contextual factors in our models that address respondents' frequent participation in relatively high-risk social contexts, i.e. public places outside the home where guardianship capacity is low and potential offenders are proximate (Sampson, 1987). As indicators of relatively high-risk contexts that may expose them to a higher risk of being victimized, respondents were asked how often they went to (a) a cinema, (b) concerts, (c) see a sporting event, and (d) parties (the answer categories were 1 = at least once a week, 2 = once a month, 3 = once every three months, and 4 = less often or never). We recoded these variables into variables called *frequency of going to [context]* that indicate how often the respondent goes to or participates in each of these social contexts (the answer categories were 1 = never or less than once per quarter of a year, 2 = once per quarter of a year, 3 = once per month, and 4 = once per week or more often).

Finally, we control for some basic socio-economic and demographic characteristics of the respondents. *Parental country of origin* is based on the three sample strata of this survey such that 'the former Yugoslavia' includes all respondents with at least one parent born in the former Yugoslavia, 'Iran' includes all respondents with at least one parent born in Iran, and 'Sweden' includes all respondents whose parents were both born in Sweden. In addition to parental country of origin, we control for the respondents' sex (0 = male; 1 = female), *level of education* in 2012 (0 = primary education,

1 = non-academic upper secondary education, 2 = academic upper secondary education, 3 = post-secondary education, 4 = tertiary education, 5 = post-graduate education), whether or not they were *living with their parents* (0 = no, 1 = yes), *socio-economic background* (this was done by including the occupational status of the parent with the highest occupational status using the International Socioeconomic Index of Occupational Status; see Ganzeboom, De Graaf, & Treiman, 1992), and the *population density* of their residential neighbourhoods (using SAMS).² The latter three characteristics were added to the data set by Statistics Sweden. We include population density to control for differences in the likelihood of being victimized in urban areas and in more rural areas.

3.5. Analytical strategy

The aforementioned variables enable us to examine how crime victimization is associated with the extent to which an individual has core network members who have been victimized and/or who have risky lifestyles. Here, we take into account the respondents' sex, level of education, socio-economic background, parental country of origin, whether they live with their parents, the population density of their residential neighbourhood, and the extent to which they themselves have risky lifestyles as well as the size and composition of their networks.

The variable *crime victimization* counts the number of types of crime each respondent was subjected to during the past 12 months. As shown in Table 1, the distribution of victimization is positively skewed; almost 84 per cent of the respondents did not report being subjected to any type of crime during the past 12 months (cf. Schreck et al., 2004). We therefore estimate the level of crime victimization by performing negative binomial regression analyses; such analyses are appropriate for analysing count data that are not normally distributed, and they also control for over-dispersion by adjusting the estimates of standard error and chi-square values (see also Hilbe, 2011). Cases with missing values for one or more independent variables were excluded from the analyses, with one exception: missing values for socio-economic background (which was the case for 7 per cent of the respondents) were replaced with the average score of all other respondents on this variable. This had no effect on the results.

4. Results

4.1. Descriptive results

In Table 1, we present descriptive results showing the number of different types of crime to which the respondents had been subjected during the last 12 months and, in particular, the specific types of crime to which they had been subjected. We see that a large majority of the respondents (83.7 per cent) report not having been victimized at all during the last 12 months. Looking specifically at different types of crime, the types of crime reported most frequently are theft of something valuable (4.2 per cent) and physical abuse (2.2 per cent), followed by burglary (1.6 per cent), threats of violence (1.5 per cent), and robbery (1.4 per cent). The descriptive statistics for the independent variables are presented in Appendix A.

Table 1. Descriptive statistics on crime victimization among Swedish youth separated by type of crime and number of types of crimes per respondent ($N = 2,244$).

Number of types of crimes		Type of crime	
0	83.7%	Threats of violence	1.6%
1	10.7%	Sexual abuse	0.1%
2	1.4%	Sexual harassment	0.2%
3	0.3%	Physical abuse	2.2%
4	0.1%	Robbery	1.5%
Missing	3.8%	Theft of something valuable	4.2%
		Burglary	1.6%
		Threatened with weapon	0.3%
		Mobbing	0.1%
		Other type of crime	2.9%
		Missing	3.8%

Source: Social Capital and Labour Market Integration: A Cohort Study, Second Wave.

4.2. Factors associated with crime victimization

Table 2 presents the results of applying a sequence of negative binomial regression models to the number of types of crime each respondent reported having been subjected to during the last 12 months.³ In Models 1–4, we inserted the different types of independent variables separately: indicators of a risky lifestyle, network characteristics, contextual factors, and the control variables. In Model 5, we included all independent variables together to disentangle the effects of multiple network characteristics and multiple respondent characteristics and behaviours, including their participation in relatively high-risk social contexts.

Regarding the individual behaviour of the focal actor, which we expected to increase the risk of being victimized (Hypothesis 1), Models 1 and 5 indicate that individuals who frequently get drunk reported having been subjected to significantly more different types of crime than those who do not get drunk very often. Although Model 1 also presents a borderline statistically significant coefficient for using cannabis, this association is insignificant when other relevant factors are taken into account. The extent to which the focal actor is risk-averse does not seem to affect her or his likelihood of being victimized.

Regarding the association between network characteristics and crime victimization (Hypotheses 2 and 3), Models 2 and 5 reveal that although individuals with larger networks in general reported having been subjected to significantly fewer types of crime, those with more victimized network members reported having been themselves subjected to more types of crime. These findings support Hypotheses 2 and 3. No statistically significant coefficients were found for the number of regular alcohol consumers in the network or for the average level of risk aversion among the focal actor’s network members.

Furthermore, we assessed whether being subjected to victimization is related to frequently going to or participating in various social contexts that could enhance the likelihood of being victimized (Hypothesis 1). According to Models 3 and 5, we find few statistically significant results associated with these behaviours. Only frequently going to parties is positively associated with being subjected to crime (Model 3), but the

Table 2. Associations between indicators of a risky lifestyle, network characteristics, contextual factors, and crime victimization: results of negative binomial regression analyses^a

	Model 1	Model 2	Model 3	Model 4	Model 5
Indicators of a risky lifestyle					
Frequency of getting drunk					
Never	Ref.				Ref.
Less than once per month	-0.009				0.111
Once per month	0.102				0.417†
Two or three times per month	0.229				0.464†
Once per week or more often	0.603**				0.716*
Using cannabis (0 = no; 1 = yes)	0.305†				0.068
Risk aversion: trying to avoid risks					
Strongly disagree	0.369†				0.253
Disagree	0.035				0.020
Neither disagree nor agree	Ref.				Ref.
Agree	0.016				0.046
Strongly agree	-0.017				-0.132
Network characteristics					
Number of network members		-0.197***			-0.189***
Number of regular alcohol consumers in the network		0.043			-0.071
Average level of risk aversion among network members		0.023			0.050
Number of victims in the network		0.592***			0.535***
Contextual factors					
Going to cinema					
Less than once per quarter of a year			Ref.		Ref.
Once per quarter of a year			-0.020		0.066
Once per month or more often			0.093		0.153
Going to concerts					
Less than once per quarter of a year			Ref.		Ref.
Once per quarter of a year			-0.177		-0.198
Once per month or more often			0.228		-0.049
Going to see sports events					
Less than once per quarter of a year			Ref.		Ref.
Once per quarter of a year			0.107		0.096
Once per month			-0.148		-0.144
Once per week or more often			-0.039		0.010
Going to parties					
Less than once per quarter of a year			Ref.		Ref.
Once per quarter of a year			0.080		0.144
Once per month			-0.217		-0.202
Once per week or more often			0.380†		0.087
Control variables					
Sex: female (male is reference category)				-0.252*	-0.092
Parental country of origin					
Former Yugoslavia				-0.190	-0.164
Iran				0.021	0.050
Sweden				Ref.	Ref.
Level of education					
Primary and lower secondary education				0.467*	0.610**
Non-academic upper secondary education				-0.068	-0.026
Academic upper secondary education				Ref.	Ref.
Post-secondary education				-0.228	-0.146
Tertiary education				0.481	0.649
Household situation					
Lives alone				Ref.	Ref.
Lives with parents (and siblings)				-0.497**	-0.369*
Lives with partner				-0.325*	-0.319*
Lives with other people				-0.139	-0.160
Socio-economic background ^b				0.004	0.006†

(Continued)

Table 2. (Continued).

	Model 1	Model 2	Model 3	Model 4	Model 5
Local population density ^c				0.353**	0.269*
Participation in both waves (0 = no; 1 = yes)				-0.090	-0.058
Constant	-2.122***	-1.630***	-1.843***	-1.657***	-1.962***
N	2119	2120	2147	2121	2045
LR Chi ²	23.16	86.90	18.13	40.67	145.83
Pseudo R ²	0.012	0.045	0.009	0.021	0.079

Source: Social Capital and Labour Market Integration: A Cohort Study, Second Wave.

† $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

^aDependent variable is the number of types of crime each respondent reported having been subjected to during the last 12 months.

^bSocio-economic background is measured as the occupational status of the respondent’s parent with the highest occupational status (using the International Socioeconomic Index of Occupational Status; see Ganzeboom et al., 1992).

^cLocal population density is measured as the number of people living in the respondent’s residential area (using SAMS areas) divided by 10,000.

association is not statistically significant when other relevant factors (in particular the respondent’s frequency of getting drunk) are taken into account (Model 5).

Finally, we find some interesting significant results regarding our control variables. Females seem to have a lower likelihood of victimization, but this association is statistically insignificant when network characteristics and indicators of a risky lifestyle are taken into account. We also find, in general, no higher likelihood of victimization among first- and second-generation immigrants from the former Yugoslavia and Iran. Regarding level of education, we find a higher likelihood of victimization among those who (at the time of the interview) had only completed primary or lower secondary education. Household situation also seems to matter, given our finding that those who live with their parents or with a romantic partner reported lower levels of victimization than those who live alone. Finally, local population density is positively associated with having been victimized, indicating that victimization is more likely to occur in densely populated areas.

5. Conclusions and discussion

The aim of this study was to assess how crime victimization (i.e. being subjected to violence, sexual abuse/harassment, physical abuse, robbery, theft, burglary, mobbing, or threats with weapons) among Swedish youth is associated with the composition of their personal networks (defined as the five persons with whom they spend most leisure time) and in particular with having close contacts who have been victimized and/or who have risky lifestyles, while controlling for the extent to which the respondents themselves have risky lifestyles and for a number of relevant background characteristics. Combining arguments from routine activity theories, lifestyle-victimization theories, and network research, we hypothesized that (1) the risk of crime victimization is higher for individuals with a low level of risk aversion, for those who regularly get drunk, for those who use drugs, and for those who frequently spend nights out at public going-out places; (2) the risk of crime victimization is higher for individuals with smaller numbers of network members who do not have risky lifestyles and/or who have not been victimized; and (3)

the risk of crime victimization is higher for individuals with larger numbers of network members who have risky lifestyles and/or who have been victimized.

Almost 13 per cent of our 23- to 24-year-old respondents reported having been victimized during the past year. Comparing this figure with results from the Swedish Crime Survey suggests that we may have underestimated the prevalence of victimization among young individuals in Sweden (NTU, 2017: 84; for figures on crime victimization in other countries and contexts, see, e.g. Cater et al., 2014; Lauritsen et al., 1991; Schreck et al., 2004; Skardhamar et al., 2014; Svensson & Ring, 2007). We can only speculate on the reasons why this would be the case. It may be, for instance, that the most vulnerable are under-represented in our sample or that our respondents were hesitant to report the occurrence of these offences. Consider, for example, that domestic violence is often not defined or reported as a crime, neither by perpetrators nor by the victims (Walby, Towers, & Francis, 2016).⁴ The finding that very few respondents reported sexual abuse or sexual harassment also supports the idea that respondents may have been hesitant to report serious offences (cf. NTU, 2017).

Using negative binomial regression analyses, we examined how crime victimization is associated with the extent to which an individual has victimized network members and/or network members with risky lifestyles over and above the effects of the extent to which the individual herself or himself has a risky lifestyle, indicated by that individual's level of risk aversion, frequently getting drunk, using cannabis, or regularly spending nights out at relatively high-risk places. We found most support for our hypotheses regarding the effects of *network size and composition* on crime victimization. We found that victimization is less likely among respondents with relatively large networks, a finding that is in line with previous research (see e.g. Maimon & Browning, 2012; Sentse, Dijkstra, Salmivalli, & Cillessen, 2013). At the same time, we find that victimization is substantially more likely among those who have many network members who have been victimized themselves, a finding that is also in line with previous research (see e.g. Mouttapa et al., 2004; Rokven et al., 2017; Sampson & Lauritsen, 1990; Schreck et al., 2006). We found no additional effects of having network members with risky lifestyles. Unfortunately, our data do not allow us to test which of the mechanisms discussed in the theory section is at work here.

In terms of a *risky lifestyle* that may put one into relatively high-risk situations or contexts that increase the likelihood of being victimized, we found only that individuals who get drunk frequently were at somewhat higher risk of being victimized. Neither the use of cannabis, having a low level of risk aversion, or frequently going to or participating in social contexts in which the likelihood of being guarded by others is relatively low or potential offenders are proximate had any additional effect on the likelihood of crime victimization. Thus, going to or participating in relatively 'high-risk' contexts does not seem to further enhance the likelihood of being victimized for 23-to 24-year-old individuals in Sweden when their alcohol consumption is taken into account.

It is important to note that this study is based on ego-centred network information in which each respondent (i.e. the focal actor) reported the extent to which each of his or her contacts had a risky lifestyle and whether they had been subjected to any type of crime. A limitation of data of this type is that they are presumably less reliable than information obtained directly from the network members themselves (cf. Czaja & Blair, 1990). Reports from the focal actor may either be biased towards the focal actor's victimization or the focal

actor may not have the correct information. In a biased report, the level of similarity between the focal actor and his or her network members may be overestimated or overstated, which could lead to overestimated effects of the network members' victimization on the likelihood of crime victimization of the focal actor. Not having the correct information implies that respondents assume that their contacts have not been victimized, which will lead to underestimation of the effects of these contacts' victimization. Biased reports of the extent to which the respondent's contacts have risky lifestyles are less problematic in our study given that we controlled for the extent to which the respondent herself or himself had a risky lifestyle. Importantly, we focused on the inner core of the respondent's personal network; this implies that we can assume that the respondents had accurate information about these core contacts' risky lifestyles and crime victimization experiences.

Another methodological concern relates to selection effects. A positive correlation between individual victimization and victimization of an individual's core contacts may either confirm our hypotheses or may (partially) imply that individuals with risky lifestyles or those who have been victimized select other individuals with risky lifestyles or other victimized individuals as network members (see e.g. Sentse et al., 2013). Indeed, due to these two limitations of our data, findings regarding network effects in this study must be interpreted with some caution.

A major advantage of our network data, however, is that neither the respondents nor their network characteristics were restricted to a single context such as the neighbourhood or the school (cf. Sentse et al., 2013). Another important advantage is that individual characteristics are measured similarly for respondents and their core network members. Together with the simultaneous inclusion of multiple respondent characteristics and behaviours and multiple network characteristics while taking into account differences between native Swedes and two large groups of immigrants in Sweden, these advantages make this research a valuable contribution to the body of knowledge concerning the conditions that are related to crime victimization.

To conclude, our results regarding *crime victimization* provide only limited support for our hypothesis based on routine activity and lifestyle-victimization theories – namely, that crime victimization is somewhat more likely among those who get drunk frequently, but they provide substantial support for our hypotheses about network effects, namely, that having more non-victimized close network contacts decreases the likelihood of being victimized whereas having more victimized close network contacts increases the likelihood of being victimized. Although future research should test the mechanisms underlying these effects and their causal directions, our findings stress the importance of studying network effects on crime victimization. The findings also indicate that to guard young individuals against victimization it might be worthwhile to focus more on whom they associate with than on avoiding 'high-risk' behaviours or avoiding social contexts that are characterized by unstructured activities, low guardianship capacity, and proximate potential offenders.

Notes

1. It may also be that people who have been victimized are more likely to use drugs or alcohol due to stress and depression (e.g. Fagan, Piper, & Cheng, 1987).
2. To define residential neighbourhoods, we used Small Areas for Market Statistics (SAMS), which were created by Statistics Sweden and refer to small geographic areas with

boundaries defined by homogenous types of buildings. Sweden contains approximately 9,200 SAMS areas, and the average population of a SAMS neighbourhood is approximately 2,000 people in Stockholm and 1,000 people in the rest of Sweden.

3. A correlation matrix showing bivariate associations between the dependent and independent variables is presented in [Appendix B](#). Logit models (not presented, but available upon request) on 'being victimized' (0 = not victimized; 1 = had been subjected to one or more types of crime) with the same covariates yielded similar results, although predominantly with somewhat lower significance levels.
4. We have no information about who committed the crimes against the respondents. This implies that crime victimization may include violence by household or family members, but also that crime victimization may be under-reported because the respondent did not define and/or report domestic violence as crime during the interview. The lack of information on the offenders also implies that we were not able to examine whether the associations between risky lifestyles, network characteristics, and crime victimization are different for domestic violence as compared to offences committed by unknown offenders.

Funding

This work was supported by the European Research Council [Starting Grant No. 263422].

References

- Carrington, P. J. (2011). Crime and social network analysis. In J. Scott & P. J. Carrington (Eds.), *Sage handbook of social network analysis* (pp. 236–255). London: Sage Publications.
- Cater, Å. K., Andershed, A. K., & Andershed, H. (2014). Youth victimization in Sweden: Prevalence, characteristics and relation to mental health and behavioral problems in young adulthood. *Child Abuse & Neglect*, *38*, 1290–1302.
- Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, *44*, 588–608.
- Czaja, R., & Blair, J. (1990). Using network sampling in crime victimization surveys. *Journal of Quantitative Criminology*, *6*(2), 185–206.
- Edling, C., & Rydgren, J. (2010). *Social capital and labour market integration: A Cohort study, first wave*. Stockholm University.
- Edling, C., & Rydgren, J. (2014). *Social capital and labour market integration: A cohort study, second wave*. Stockholm University.
- Fagan, J., Piper, E. S., & Cheng, Y. T. (1987). Contributions of victimization to delinquency in inner cities. *Journal of Criminal Law Criminology*, *78*, 586–613.
- Felson, R. B., Savolainen, J., Berg, M. T., & Ellonen, N. (2013). Does spending time in public settings contribute to the adolescent risk of violent victimization? *Journal of Quantitative Criminology*, *29*, 273–293.
- Ganzeboom, H. B. G., De Graaf, P. M., & Treiman, D. J. (1992). A standard international socio-economic index of occupational status. *Social Science Research*, *21*, 1–56.
- Gottfredson, M. R. (1984). Victims of crime: The dimensions of risk. In *Home office research study, no. 81*. London: Her Majesty's Stationery Office.
- Gottfredson, M. R. (1986). Substantive contributions of victimization surveys. *Crime and Justice*, *7*, 251–287.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Hagan, J., & Palloni, A. (1999). Sociological criminology and the mythology of hispanic immigration and crime. *Social Problems*, *46*(4), 617–632.

- Haynie, D. L. (2001). Delinquent peers revisited: Does network structure matter? *American Journal of Sociology*, 106, 1013–1057.
- Haynie, D. L., & Osgood, D. W. (2005). Reconsidering peers and delinquency: How do peers matter? *Social Forces*, 84(2), 1109–1130.
- Hilbe, J. M. (2011). *Negative binomial regression, second edition*. New York: Cambridge University Press.
- Hindelang, M. J., Gottfredson, M. R., & Garofalo, J. (1978). *Victims of personal crime: An empirical foundation for a theory of personal victimization*. Cambridge, MA: Ballinger.
- Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press.
- Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology*, 35(1), 94–101.
- Jensen, G. F., & Brownfield, D. (1986). Gender, lifestyles, and victimization: Beyond routine activity theory. *Violence and Victims*, 1, 85–99.
- Lauritsen, J. L., Sampson, R. J., & Laub, J. H. (1991). The link between offending and victimization among adolescents. *Criminology; an Interdisciplinary Journal*, 29(2), 265–291.
- Luo, F., & Bouffard, L. A. (2016). Immigrants as victims: examining the function of assimilation. *Journal Of Ethnicity in Criminal Justice*, 14(2), 120–136.
- Maimon, D., & Browning, C. R. (2012). Adolescents' violent victimization in the neighbourhood. *British Journal of Criminology*, 52, 808–833.
- Martens, P. L. (2001). Immigrants as victims of crime. *International Review of Victimology*, 8, 199–216.
- Martinez, R., Jr. (2000). Immigration and urban violence: The link between immigrant Latinos and types of homicide. *Social Science Quarterly*, 81, 363–374.
- Maxfield, M. G. (1987). Household composition, routine activity, and victimization: A comparative analysis. *Journal of Quantitative Criminology*, 3(4), 301–320.
- Mears, D. P. (2001). The immigration-crime nexus: Toward an analytical framework for assessing and guiding theory, research, and policy. *Sociological Perspectives*, 44, 1–19.
- Merton, R. K. (1957). *Social theory and social structure, revised edition*. New York: Free Press.
- Miethe, T. D., Stafford, M. C., & Long, J. S. (1987). Social differentiation in criminal victimization: A test of routine activities/lifestyle theories. *American Sociological Review*, 52(2), 184–194.
- Miethe, T. D., Stafford, M. C., & Sloane, D. (1990). Lifestyle changes and risks of criminal victimization. *Journal of Quantitative Criminology*, 6(4), 357–376.
- Mouttapa, M., Valente, T., Gallaher, P., Rohrbach, L. A., & Unger, J. B. (2004). Social network predictors of bullying and victimization. *Adolescence*, 39(154), 315–335.
- NTU (2017). Nationella Trygghetsundersökningen 2016. Om utsatthet, otrygghet och förtroende. Rapport 2017: 1 [Swedish Crime Survey 2016. Report 2017: 1]. Stockholm: Brottsförebyggande rådet [The Swedish National Council for Crime Prevention].
- Osgood, D. W., Wilson, J. K., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Routine activities and individual deviant behaviour. *American Sociological Review*, 61, 635–655.
- Ousey, G. C., Wilcox, P., & Fisher, B. S. (2011). Something old, something new: Revisiting competing hypotheses of the victimization-offending relationship among adolescents. *Journal of Quantitative Criminology*, 27, 53–84.
- Rokven, J. J., De Boer, G., Tolsma, J., & Ruiter, S. (2017). How friends' involvement in crime affects the risk of offending and victimization. *European Journal of Criminology*, 14(6), 697–719.
- Sampson, R. J. (1987). Personal violence by strangers: An extension and test of the opportunity model of predatory victimization. *The Journal of Criminal Law & Criminology*, 78(2), 327–356.
- Sampson, R. J., & Lauritsen, J. L. (1990). Deviant lifestyles, proximity to crime, and the offender-victim link in personal violence. *Journal of Research in Crime and Delinquency*, 27, 110–139.
- Sampson, R. J., & Lauritsen, J. L. (1994). Violent victimization and offending: Individual, situational, and community-level risk factors. In: A. J. Reiss & J. Roth (Eds.), *Understanding and preventing violence: Social Influences* (Vol. 3, pp. 1–115). Washington, D.C.: National Academy Press.
- Sampson, R. J., & Raudenbush, S. W. (1999). Systematic social observation of public places: A new look at disorder in urban neighbourhoods. *American Journal of Sociology*, 105, 603–651.

- Sampson, R. J., & Wooldredge, J. D. (1987). Linking the micro- and macro-level dimensions of lifestyle-routine activity and opportunity models of predatory victimization. *Journal of Quantitative Criminology*, 3(4), 371–393.
- Schreck, C. J., Fisher, B. S., & Miller, J. M. (2004). The social context of violent victimization: A study of the delinquent peer effect. *Justice Quarterly*, 21(1), 23–47.
- Schreck, C. J., Stewart, E. A., & Fisher, B. S. (2006). Self-control, victimization, and their influence on risky lifestyles: A longitudinal analysis using panel data. *Journal of Quantitative Criminology*, 22, 319–340.
- Sentse, M., Dijkstra, J. K., Salmivalli, C., & Cillessen, A. H. N. (2013). The dynamics of friendships and victimization in adolescence: A longitudinal social network perspective. *Aggressive Behaviour*, 39, 229–238.
- Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas: A study of rates of delinquents in relation to differential characteristics of local communities in American Cities*. Chicago: University of Chicago Press.
- Singer, S. I. (1981). Homogeneous victim-offender populations: A review and some research implications. *Journal of Criminal Law and Criminology*, 72(2), 779–788.
- Skardhamar, T., Aaltonen, M., & Lehti, M. (2014). Immigrant crime in Norway and Finland. *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 15(2), 107–127.
- Skogan, W. G. (1981). Assessing the behavioural context of victimization. *Journal of Criminal Law and Criminology*, 72, 727–742.
- Sparks, R. F. (1982). *Research on victims of crime*. Washington DC: Government Printing Office.
- Sutherland, E. H. (1934). *Principles of criminology*. Philadelphia: Lippincott.
- Svensson, R., & Ring, J. (2007). Trends in self-reported youth crime and victimization in Sweden, 1995–2005. *Journal of Scandinavian Studies in Criminology and Crime Prevention*, 8, 185–209.
- Tonry, M. (1997a). Ethnicity, crime, and immigration. *Crime and Justice*, 21, 1–29.
- Tonry, M. (1997b). *Ethnicity, crime, and immigration: Comparative and cross-national perspectives*. Chicago: University of Chicago Press.
- Tseloni, A. (2000). Personal criminal victimization in the United States: Fixed and random effects of individual and household characteristics. *Journal of Quantitative Criminology*, 16(4), 415–442.
- Turanovic, J. J., & Pratt, T. C. (2014). “Can’t stop, won’t stop”: self-control, risky lifestyles, and repeat victimization. *Journal of Quantitative Criminology*, 30, 29–56.
- Van Gelder, J. L., Averdijk, M., Eisner, M., & Ribaud, D. (2015). Unpacking the victim-offender overlap: On role differentiation and socio-psychological characteristics. *Journal of Quantitative Criminology*, 31, 653–675.
- Walby, S., Towers, J., & Francis, B. (2016). Is violent crime increasing or decreasing? A new methodology to measure repeat attacks making visible the significance of gender and domestic relations. *The British Journal of Criminology*, 56(6), 1203–1234.
- Waters, T. (1999). *Crime and immigrant youth*. Thousand Oaks CA: Sage.
- Zhang, L., Welte, J. W., & Wieczorek, W. F. (2001). Deviant lifestyle and crime victimization. *Journal of Criminal Justice*, 29, 133–143.

Appendix A. Descriptive statistics for independent variables

	Mean	Std. Dev.	%	N
Indicators of a risky lifestyle				
Frequency of getting drunk (per year)				2,140
Never			26.07	
Less than once per month			30.05	
Once per month			17.71	
Two or three times per month			17.29	
Once per week or more often			8.88	
Using cannabis (0 = no; 1 = yes)			11.08	2,157
Risk aversion (trying to avoid risks)				2,141
Strongly disagree			10.65	
Disagree			18.68	
Neither agree nor disagree			33.91	
Agree			23.40	
Strongly disagree			13.36	
Network characteristics				
Number of network members	3.96	1.24		2,191
Number of regular alcohol consumers in the network (at least two or three times per month)	1.55	1.54		2,191
Average level of risk aversion among network members (on a 10-point Likert scale: 1 = very risk-seeking; 10 = very careful)	5.68	1.52		2,191
Number of victims in the network	0.35	0.68		2,191
Contextual factors				
Frequency of going to cinema				2,151
Never or less than once per quarter of a year			30.54	
Once per quarter of a year			34.68	
Once per month			33.29	
Once per week or more often			1.49	
Frequency of going to concerts				2,151
Never or less than once per quarter of a year			72.43	
Once per quarter of a year			20.73	
Once per month			5.72	
Once per week or more often			1.12	
Frequency of going to see sports events				2,150
Never or less than once per quarter of a year			65.40	
Once per quarter of a year			15.12	
Once per month			14.23	
Once per week or more often			5.26	
Frequency of going to parties				2,149
Never or less than once per quarter of a year			19.31	
Once per quarter of a year			14.61	
Once per month			53.28	
Once per week or more often			12.80	
Control variables				
Sex: female (male = reference category)			48.22	2,244
Parental country of origin				2,244
Former Yugoslavia			29.95	
Iran			22.15	
Sweden			47.91	
Level of education				2,224
Primary and lower secondary education			9.04	
Non-academic upper secondary education			37.32	
Academic upper secondary education			14.21	
Post-secondary education			38.58	
Tertiary education			0.85	
Household situation				2,238
Lives alone			30.88	

(Continued)

(Continued).

	Mean	Std. Dev.	%	N
Lives with parents (and siblings)			32.80	
Lives with partner			26.81	
Lives with other people			9.52	
Socio-economic background ^a	46.01	18.51		2,081
Local population density ^b	2787.62	4267.93		2,225
Participation in both waves (0 = no; 1 = yes)			70.28	2,244

Source: Social Capital and Labour Market Integration: A Cohort Study, Second Wave.

^aSocio-economic background is measured as the occupational status of the respondent's parent with the highest occupational status (using the International Socioeconomic Index of Occupational Status; see Ganzeboom et al., 1992).

^bLocal population density is measured as the number of people living in the respondent's residential area (using SAMS areas) divided by 10,000.

Appendix B. Correlation matrix showing bivariate associations between dependent and independent variables^a

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Number of types of crimes											
(2) Frequency of getting drunk	0.10										
(3) Using cannabis	0.06	0.25									
(4) Risk aversion	-0.05	-0.18	-0.12								
(5) Network size	-0.04	0.19	0.05	-0.10							
(6) Number of regular alcohol consumers in the network	0.03	0.60	0.21	-0.18	0.38						
(7) Average risk aversion of network members	-0.00	-0.14	-0.05	0.20	-0.05	-0.16					
(8) Number of victimized network members	0.22	0.14	0.14	-0.12	0.15	0.19	-0.08				
(9) Frequency of going to the cinema	0.00	0.07	0.02	-0.06	0.06	0.06	-0.03	0.05			
(10) Frequency of going to concerts	0.00	0.15	0.11	-0.10	0.07	0.15	-0.05	0.07	0.12		
(11) Frequency of watching sports	-0.01	0.05	-0.05	-0.03	0.01	0.04	-0.04	0.02	0.09	0.09	
(12) Frequency of going to parties	0.04	0.54	0.18	-0.15	0.17	0.42	-0.12	0.12	0.12	0.21	0.09

Source: Social Capital and Labour Market Integration: A Cohort Study, Second Wave.

^aThe correlation coefficients show the strength and direction of the association between the two variables (Pearson's correlation for two continuous variables, otherwise Spearman's correlation).