The effect of neighbourhood characteristics on self-reported serious offending

Examining the mediating effects of parental supervision and peer influence

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Date	June 17th, 2016
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Abstract

This paper will examine the relationship between neighbourhood characteristics and self-reported serious offending among adolescents in the Netherlands. The focus of this study will be on the mediating effects of peer influence and parental supervision. The results partially support the idea that the link between neighbourhood characteristics and self-reported serious offending is mediated through these social processes. Parental supervision was not found to be a significant mediator. Whereas peer influence did significantly mediate this relationship.
Keywords: Neighbourhood characteristics, serious offending, social disorganization, peer influence, parental supervision.

Introduction

In 2012, the Dutch Central Statistical Office estimated the total costs of crime and law enforcement to society at 26,1 billion euro annually (Centraal Bureau voor de Statistiek [CBS] 2012: 227). The statistical office also found that the number of adolescent suspects accounted for 10% of the total number of criminal suspects (CBS, 2014). Although this percentage may look relatively small, studies have shown that criminal behaviour and age are associated. More specifically, it is shown that the crime-age curve peaks in the period of (young) adolescence (Moffit, 1993;Sampson & Laub, 2003; Stolzenberg & D'Alessio, 2008), thus emphasizing the importance of conducting research on this specific group. Not only the role of age is shown to be of importance, but also external factors play a role in explaining criminal behaviour.

A lot of research has been conducted on the effects of neighbourhood characteristics on criminal behaviour of which the majority of studies stress the importance of the effects of both context and individual characteristics (Sampson Raudenbush, & Earls, 1997; Simons, Johnson, Beaman, Conger & Whitbeck, 1996; Simcha-Fagan & Schwartz,1986). Simcha-Fagan & Schwartz (1986: 694) describe that "*An analysis of contextual effects requires simultaneous use of indices of social aggregates and individual behaviour*".

Previous studies emphasize the importance of two distinctions when studying neighbourhood characteristics: structural and social characteristics (Fagan & Wright, 2012; Chung & Steinberg, 2006; Sampson et al., 1997). Multiple researchers show that both affect delinquent behaviour (Osgood & Chambers, 2000; Sampson et al., 1997; Sampson & Groves, 1989**;** Shaw & McKay, 1942). Neighbourhood structural characteristics include sociodemographic features of communities, like employment rate or income, whereas the neighbourhood social characteristics focus on the social organization of a community

measured by social connections and levels of cohesion, and the like (Chung & Steinberg, 2006).

With regard to the social characteristics, multiple scholars studied the role of parental control on the behaviour of youths in relation to delinquency (Cookston, 1999; Coley & Hoffman, 1996; Jang & Smith, 1997; Wilson, 1980). A direct effect of parenting on youth delinquent behaviour is acknowledged by several (Loeber & Stouthamer-Loeber, 1986; Jang & Smith, 1997; Sampson & Laub, 1993), holding that lower levels of parental supervision can result in higher levels of delinquency among youths. Furthermore, Stacy, Sussman, Dent and Burton (as cited in Cookston, 1999, p.110) have related parental supervision to susceptibility to peer influence. Peer influence on its own is shown to have a significant influence on youth delinquency, as it affects future participation in delinquent acts, and the positive perception towards anti-social behaviour (Henry Tolan & Gorman-Smith, 2001; Patterson, Dishion & Yoerger, 2000; Wikström & Loeber, 2002).

Other studies have shown the importance of peer influence and parental supervision as mediating effects on youth outcomes (Chung & Steinberg, 2006; Rankin & Quane, 2002; Tolan, Gorman-Smith & Henry, 2003). Rankin and Quane (2002) found that more collective efficacy was related to better parental supervision, fewer deviant peer affiliations and lower levels of adolescent deviant behaviour. They also found that the link between collective efficacy and deviant behaviour was mediated by parenting and peer group influences. Tolan et al. (2003) found that parenting practices and having deviant peers mediated the link between neighbourhood effects on violent offending. Chung & Steinberg (2006) found that parental supervision indirectly affected youth delinquency through peer influence. In contrast, Loeber & Stouthamer-Loeber (1986) found a direct effect of parenting on youth delinquent behaviour.

This shows that findings on the social processes are inconsistent. When taking into account these different findings of the direct and indirect effects of peer influence and parental supervision on youth delinquency, this study can contribute to the knowledge on this topic and help elucidate previous inconsistencies. Furthermore, the number of empirical studies of neighbourhood effects on deviant and delinquent behaviour formalized outside the United Stated is limited (Bruinsma, Pauwels, Weerman & Bernasco, 2013; Oberwittler, 2007), and the fact that the joint influence of parents and peers as simultaneous mediators of community risk has received little empirical attention (Chung & Steinberg, 2006) is reason to study these effects outside the United States. In this paper, we will take into consideration neighbourhood contextual factors as well as individual characteristics. Specifically, we will

look at the mediating effects of peer influence and parental supervision on self-reported adolescent behaviour. This leads to the following question: *To what extent is the effect of neighbourhood characteristics on self-reported delinquent behaviour among adolescents in the Netherlands, mediated through peer influence and parental supervision?*

Theory

The neighbourhood provides the space people live in, the people we can interact with, the school you go to and so on. Neighbourhood characteristics are important for knowing what a community can provide its residents (McCulloch, 2003). For example, characteristics that decrease the quality of a neighbourhood are associated with criminal behaviour. As described by Mennis, Harris, Obradovic, Izenman, Grunwald & Lockwood, (2011), both delinquency and recidivism are concentrated in impoverished neighbourhoods with violent crime. Disadvantaged neighbourhoods are less able to maintain local institutions that help suppress crime (Peterson, Krivo & Harris, 2000). Ellen and Turner (1997) explain that people who are living in a high-crime neighbourhood have more risk of being victimized, injured or even getting killed, than people living in safer neighbourhoods. Moreover, these kinds of neighbourhoods can influence children in that they witness crimes or know people who are victimized, leading them to believe the world is violent, dangerous and unjust. This might cause children to have greater acceptance towards violence and crime later in life.

A large part of neighbourhood research focused on social disorganization theories, incorporating three basic neighbourhood characteristics: socioeconomic status (SES), ethnic heterogeneity, and residential mobility (Shaw & Mckay, 1942; Sampson, 1987; Sampson and Groves, 1989; Coleman, 1988; Putnam, 1995). These characteristics can influence criminal behaviour as follows: high residential mobility is associated with lower SES, higher ethnic heterogeneity, which results in less neighbourhood trust, less local friendship networks and less participation in local organizations that can solve neighbourhood problems, which can lead to higher crime rates and offender rates in that neighbourhood (Bruinsma et al., 2013; Putnam, 1995; Coleman,1988; & Bourdieu, 1986). We will take this point of view for our concept of neighbourhood characteristics.

Disorder

Social disorganization theories originate from the idea of William Thomas (1927) (Bruinsma et al., 2013). The basic premise is that due to a decrease in social rules, the influence of institutions on neighbourhood residents weakens. The idea was based on the rapid changing

population of American cities where immigrants moved to the big cities to work in the new industries. These immigrants lost their traditional roots when they settled in the large growing cities of America. The focus of studies incorporating this idea, became the interaction of problematic behaviour of individuals with the ongoing changes on the macro level in societies. This is when Chicago became an important basis for research on social disorganization theory, since it rapidly grew into a metropolis with a lot of industry. Inspired by this idea Shaw and Mckay (1942) argued that social disorganisation is the result of three structural neighbourhood characteristics: high residential mobility, ethnic heterogeneity, and low socioeconomic status. These characteristics make it hard for a community to suppress unconventional behavioural norms. They assumed that in ethnically heterogeneous neighbourhoods, institutional participation and informal social control are hard to realize because residents are not able to effectively communicate with each other. Moreover, high residential mobility in neighbourhoods limits the possibility to generate informal social control and create shared values because the citizens only reside in disorderly neighbourhoods for a short time. Subsequently, low socioeconomic status limits residents in resources which may be needed for collective action or primary needs.

Collective efficacy

The term collective efficacy refers to the ability of members of a community to control the behaviour of individuals in that community. Control of people's behaviour allows community residents to create a safe and orderly environment (Bruinsma et al., 2013). Collective efficacy is defined as the process of activating or utilising social ties among neighbourhood residents in order to achieve collective goals (Sampson, Morenoff & Gannon-Rowley, 2002). The idea of collective efficacy springs from the concept of social capital. Social capital is based on relations between people, which can facilitate action (Coleman, 1988). This kind of capital is not so much a single entity, but is rather defined by its function. Moreover the concept is not just bound to the individual level but also encompasses larger groups. A clarifying example of this is provided by Coleman (1988): the diamond market in New York, where Jewish jewelers let peers appraise their diamonds, taking the risk of false information or a switch of stones for less valuable ones. Yet, this did not seem to happen because of a high level of mutual trust. If this trust were to be broken or absent, the market could not function as it does now. Collective efficacy builds upon these relations between people that can facilitate action and the importance of mutual trust.

The basic idea of collective efficacy is that people live in small communities, as defined by neighbourhoods, in which people strive for common goals and values. An example of such a goal is the safety of all residents. For a community to realize common goals, a certain level of cohesion is needed. When people do not interact with each other, when there is no solidarity among residents, and there is no mutual trust among residents, it can be very hard to strive for common goals. Moreover, when people are not willing to intervene on behalf of the common good, these goals cannot be realized. The latter encompasses the function of informal social control. This informal social control includes things like monitoring groups of playing, or 'hanging', youth, intervening when people are causing disorder in the neighbourhood, or addressing children who are playing truant (Sampson et al., 1997). It is the combined effort of mutual trust and willingness to intervene that will determine the neighbourhood context of collective efficacy, according to Sampson et al. (1997). They propose that the ability of a neighbourhood, to accomplish the common goals of the inhabitants and conserve informal social controls, is a big contributor to neighbourhood variation in violence. Sampson et al. (1997) found that the effect of structural neighbourhood characteristics on violent crime rates is mediated by collective efficacy. This combined measure proved to be a strong predictor of lower rates of violence (Sampson et al., 1997:923). Sampson et al.(1997) also found evidence that collective efficacy also mediated a substantial portion of the association between concentrated disadvantage and residential stability with violence.

Collective efficacy and other social processes are often regarded as intervening, mediating, or moderating variables (Bruinsma et al., 2013). However in this study we will look whether we can also find a direct effect of collective efficacy on criminal behaviour. The idea is that the degree of collective efficacy functions as a neighbourhood social characteristic that influences criminal behaviour. High degree of collective efficacy would result in less criminal behaviour and low degree of collective efficacy would result in more criminal behaviour.

Peer Influence

Sutherland's (as cited in Matsueda & Heimer, 1987: 827) Theory of Differential Association suggests that both criminal and law-abiding behaviour are learned through interaction with others. This would suggest that when someone is surrounded by people with certain behavioural patterns and attitudes, this individual is likely to adopt this behaviour. Akers (1977) added concepts such as self-reinforcement, imitation, and anticipated reinforcement to

the Differential Association Theory and presented the Social Learning Theory. The Social Learning Theory is an integration of differential association and behavioural learning theories, which states that interaction with other people influences the individual in displaying certain behaviour. Akers Krohn, Lanza-Kaduce & Radosevich (1979) found strong support for Social Learning Theory by testing survey data of adolescent drinking and drug behaviour.

Corresponding with the ideas of Social Learning Theory, we would expect that an individual that is surrounded by people with criminal behavioural patterns and attitudes, tend to show similar behavioural patterns. More concrete: when someone has friends who show delinquent behaviour to a greater extent, that person tends to show more delinquent behaviour himself. This concept of delinquent peers has been the subject of various studies which found evidence that individuals who have more friends who display delinquent behaviour, tend to show more delinquent behaviour themselves (Warr & Stafford, 1991). Haynie, Silver & Teasdale (2006) found support for their hypothesis that neighbourhood structural characteristics increase opportunities for youth to associate with particular types of peers. Furthermore, Haynie (2001) found that the influence of delinquent peers also indicate that friends' delinquency is associated with an adolescent's own delinquency involvement.

Haynie et al. (2006) also found that exposure to peer violence had a moderately strong association with adolescents' participation in serious violence. They additionally found that exposure to academically oriented peers was associated with a reduction in violence. Their findings suggest that delinquent peer influence mediates part of the association between neighbourhood disadvantage and violence (Haynie et al., 2006). In line with this, Rankin & Quane (2002) found that when youths have more positive peers, they will be more socially competent and will be less sensitive to delinquent behaviour. They note that the quality of peers is dependent on levels of collective efficacy and concentrated disadvantage within the neighbourhood, and that peers are a mediating factor for both neighbourhood and family effects on youths outcomes.

Simons et al. (1996) found evidence as well that involvement with delinquent peers might explain the association between neighbourhood context and youth violence. Their idea is that delinquency would be widespread in communities characterized by a high proportion of disadvantaged persons or single parents. Such communities are less pleasant environments than those with more resources. A high proportion of disadvantaged persons increases the likelihood that adolescents will engage in delinquent behaviour, because the probability that they will form friendships with peers that encourage antisocial behaviour is higher in those neighbourhoods (Simons et al., 1996: 150). Subsequently, they found that community

disadvantage increased the probability of a boy's affiliating with deviant peers (Simons et al., 1996: 167).

Based on these theoretical frameworks, our expectation is that neighbourhood characteristics are associated with exposure to delinquent peers, thus the better the neighbourhood, the less the exposure to delinquent peers will be. Meanwhile, having delinquent peers will have a positive effect on someone's self-reporting in delinquent behaviour. Thus the more someone will be exposed to delinquent peers, the more delinquent behaviour someone will engage in. This brings us to the following hypothesis:

Respondent delinquent behaviour is influenced by neighbourhood characteristics and mediated through peer influence, in which negative neighbourhood characteristics lead to more delinquent peers, and having more delinquent peers leads to more self-reported delinquent behaviour.

Parental Supervision

When investigating the influence of the role of the parents in youth delinquency, different concepts which help in understanding children's deviant behaviour have been used by Loeber and Stouthamer-Loeber (1986). They introduced the '*Neglect Paradigm*', this paradigm describes the way in which parents treat their children, can result in the display of certain behaviour. The parenting aspect in this paradigm is often referred to as '*parental supervision*'. It states that when parents spend insufficient time positively interacting with their children, this could result in parents being unaware of problematic behaviour their children engage in. Subsequently, the probability is higher that their children will display deviant behaviour. Because of the lack of time spent with their children and the lack of supervision, parents are unable to intervene when the child shows signals of deviant/delinquent behaviour. Picking up these signals would be possible when monitoring their children's' whereabouts, activities, or choice of friends. In addition, Jang & Krohn (1995) argue that the power of the effect of parental supervision varies with the youth's age. They say that for younger adolescents the effect is bigger compared to older adolescents since they enter a phase of becoming more independent, which will result in less supervision by the parents, but does not necessarily worsen the relationship with the parents.

With regard to neighbourhoods, Leventhal and Brooks-Gunn,(2000) argue that parental supervision can mediate the effect between neighbourhood characteristics and youth behaviour, in which the neighbourhood characteristics influence the extent to which parents

supervise their children. Different authors found that the stress associated with living in disadvantaged neighbourhoods can cause parents to reduce affection towards their children, consequently to spend less time with them, and to lose the energy for monitoring them, and it may even result in parents using substances themselves to cope with the stressful environment (Chuang Ennett, Bauman, & Foshee, 2005; Klebanov Brooks-Gunn & Duncan, 1994; Leventhal & Brooks-Gunn 2000; Simons et al., 1996; Simons, Johnson, Conger & Lorenz 1997). In turn, Rankin and Quane (2002) showed that higher rates of collective efficacy are related to better parental supervision, fewer deviant peer affiliations, and lower levels of adolescent problem behaviour.

Considering the above, we expect that the effect of neighbourhood characteristics on delinquent behaviour is mediated by parental supervision, resulting in the following hypothesis:

Respondent delinquent behaviour is influenced by neighbourhood characteristics and mediated through parental supervision, in which negative neighbourhood characteristics lead to less parental supervision, and less parental supervision leads to more self-reported delinquent behaviour.

Method

Data

This study is based on data from the second International Self-Reported Delinquency Study (ISRD-2) (Junger-Tas, Marshall, Enzmann, Killias, Steketee & Gruszczynska, , 2010). The ISRD-2 is a large international collaborative study of delinquency and victimization of adolescent students. The data consisted of 71.400 respondents from 31 countries, namely 25 European countries and 6 American countries, and was collected between 2005-2007. The ISRD-2 was either city level or national level based. The questionnaires were distributed in schools. In general, the cross-national description of the prevalence and incidence of delinquent behaviour allowed for the assessment of national crime rates by comparison with the crime rates of other countries (Junger-Tas et al., 2010). The cities that were selected were considered typical for that country and were comparable to other cities of the same size, which provided reasonable representation of the countries that participated, although they were not randomly selected. The researchers made a distinction between three city levels: large metropolitan area, with a population of about 1,150,000, mid-sized cities, with a population of about 120,000 and small cities, with a population of about 10,000-70,000.

These city levels were combined with a random selection of 7th, 8th and 9th degree school classes, consisting of adolescents roughly within age group 12-15.

Our study will focus only on Dutch adolescents between the age of 12 to 15, because this age category consists of the highest number of respondents (n=2153). The final number of respondents for our analyses is 1855. In the Netherlands, the researchers had some difficulties in achieving a large representative sample of schools, because schools have developed into larger 'school communities'. These communities include all types of education, so there can be no distinction between 'primary' or 'secondary' schools. This was problematic because some small cities chosen for the study had no secondary school. These schools were considered as independent schools (Junger-Tas et al., 2010). Many schools refused to cooperate in the study because they were asked to participate in a large number of school studies as well. Only 17.5% of the schools that were approached agreed to participate. The researchers were able to draw a sample of classes that was representative of the different education types in the Netherlands. In contrast to the school response, the number of respondents approached had a response rate of 99.8%. The whole sample was believed to be reasonably representative of the national school population, and the ratio of males to females in this study suggests that it was also representative to that of the national ratio. The sample is predominantly urban, and includes an overrepresentation of ethnic minorities.

Dependent Variables

For measuring delinquent behaviour of adolescents, respondents were asked to report on a variety of questions regarding delinquent behaviour. The questions range from minor offenses like shoplifting to more serious offenses like assault or car theft. The items (n=12) provide information on lifetime prevalence, last year prevalence, frequency, age of onset, and social reactions to these acts of behaviour. We will use a composite measures provided by the dataset (Junger-Tas et al., 2010), a total measure of serious delinquency representing the engagement in serious offenses in the year before the survey, prevalence and frequency. Prior studies support making the distinction between criminal behavioural categories, doing so will make it easier to interpret and compare results with other studies (Thornberry & Krohn, 2000). Moreover, looking at serious offences which incorporates the more violent offences, is in line with the findings of Sampson et al. (1997). All composite measures constructed by Junger-Tas et al. (2010) have to meet the conditions that there are at least two valid variables and at most ⅓ of the variables can have missing values. When these conditions are not met,

the variables are set to missing. Thus, for example, a composite variable with 11 items can have a maximum of 3 items with missing values.

Serious total offenses

In order to measure serious offending, respondents were asked to answer the following items: '*Did you ever intentionally beat up someone, or hurt him with a stick or knife, so bad that he had to see a doctor?*', '*Did you ever threaten somebody with a weapon or to beat them up, just to get money or other things from them?*', '*Did you ever snatch a purse, bag or something else from a person?*', '*Did you ever steal something out or from a car?*', '*Did you ever steal a motorbike or car?*', '*Did you ever steal a bicycle, moped or scooter?*', '*Did you ever break into a building with the purpose to steal something?*', and '*Did you ever sell any (soft or hard) drugs or act as an intermediary?*'. The respondents could answer whether they engaged in these acts, and if so, what the frequency of the activity was over the past year. Every item is categorized accordingly: (0) never last year (1) once last year (2) 2-4 times last year (3) 5-9 times last year (4) >=10 times last year. For the composite measure Junger-Tas et al. (2010) summed and categorized the items within the same values. Thus a higher score on serious total offenses means more self-reported delinquent behaviour in the past year. Sampson et al. (1997) used a measurement of violence which measured how often certain items had occurred over the last 6 months. The measure we used looked at serious offending that occurred over the last year.

Independent Variables

Collective efficacy

Collective efficacy measures the degree of informal social control and social cohesion between neighbours. We used different items that were measured in the ISRD-2 to make a representation of collective efficacy. Respondents were asked '*my neighbours notice when I am misbehaving and let me know*', in which informal social control was measured on a 4 point Likert-scale, ranging from (1) fully agree, (2) somewhat agree, (3) somewhat disagree, to (4) fully disagree.

Social cohesion was measured by using 6 items which consisted of: *'If I had to move, I would miss the neighbourhood', 'I like my neighbourhood', 'People around here are willing to help their Neighbours', 'This is a close-knit neighbourhood', 'People in this neighbourhood can be trusted',* and *'People in this neighbourhood generally don't get along with each other',* measured on the same 4 point Likert-scale. Items were recoded so that the

higher the score on each of these items, the higher the level of collective efficacy in the neighbourhood. These items partially correspond with the items used by Sampson et al. (1997) to measure collective efficacy.

When conducting factor analysis on the 13 neighbourhood items, we expected the results to show three different factors: social disorganization, informal social control, and social cohesion. However, the first factor analysis shows only two significant factors (with eigenvalues above 1), shown in table 1.

Table 1. *Factor analysis on neighbourhood characteristics*

	Social disorganization	Social Cohesion	Informal control
If I had to move, I would miss the neighbourhood			.678
My neighbours notice when I am misbehaving and let me know			
I like my neighbourhood			.849
There is a lot of space for children to play			.314
There is a lot of crime in my neighbourhood (r)	.810		
There is a lot of drug selling (r)	.807		
There is a lot of fighting (r)	.815		
There are a lot of empty and abandoned buildings (r)	.489		
There is a lot of graffiti (r)	.598		
People around here are willing to help their neighbours		.837	
This is a close-knit neighbourhood		.794	
People in this neighbourhood can be trusted		.660	
People in this neighbourhood generally don't get along with each other (r)		.341	
Eigenvalues	4.233	2.360	.938

Note: Factor loadings lower than .3 are not shown, items with *r* were recoded.

Interestingly, is that the item considered for the measure of social control does not load on any of the factors. Moreover, the items *'If I had to move, I would miss the neighbourhood'; 'I like my neighbourhood',* which could be regarded as neighbourhood bonding, also load on the informal control factor. In the second factor analysis, we incorporate

Sampson's combined collective efficacy measure. Therefore we expect social cohesion and informal control to load on the same factor.

Table 2. *Factor analysis on neighbourhood characteristics*

	Social disorganization	Collective efficacy
If I had to move, I would miss the neighbourhood		.579
My neighbours notice when I am misbehaving and let me know		.345
I like my neighbourhood		.701
There is a lot of space for children to play		.395
There is a lot of crime in my neighbourhood (r)	.812	
There is a lot of drug selling (r)	.808	
There is a lot of fighting (r)	.817	
There are a lot of empty and abandoned buildings (r)	.490	
There is a lot of graffiti (r)	.601	
People around here are willing to help their neighbours		.676
This is a close-knit neighbourhood		.804
People in this neighbourhood can be trusted		.740
People in this neighbourhood generally don't get along with each other (r)		.410
Eigenvalues	2.360	4.233

Note: Factor loadings lower than .3 are not shown, items with *r* were recoded.

When looking at the second factor analysis, we see that the informal social control item now loads on the theorized collective efficacy measure, also the bonding items load on this factor. Although the questions about neighbourhood bonding do not explicitly mention people in the neighbourhood, we assume that the concept of neighbourhood still encompasses the people who live in that neighbourhood, assuming people will like their neighbourhood if they like the people living in it. Considering the latter, the items concerning social cohesion will be closely related since they focus on the people in the neighbourhood. This would explain the loading on the same factor. A reliability test on all the items for the collective

efficacy scale results in an alpha of .797. If we were to remove '*My neighbours notice when I am misbehaving and let me know*' alpha increases to .825, however, because this item represents informal social control which is important for the theory and .797 is still a considerably good score, we decided to leave this item in the scale. Our measure of collective efficacy is constructed without the measure *'there is a lot of space for children to play',* because it does not fit in our theoretical framework.

The findings of Sampson et al. (1997) are based on the relationship between structural neighbourhood characteristics and violent behaviour, in which social processes have a mediating effect. However, in the present study, which relies solely on data gathered from self-reported youth surveys, these kind of administrative structural neighbourhood characteristics cannot be included. Considering the significant effect of structural characteristics on collective efficacy found by Sampson et al. (1997), we expect that collective efficacy can be used as a reflection of a part of the structural neighbourhood characteristics, and can thus function as a proxy.

Neighbourhood Quality

Based on the argument of Shaw and Mckay (1942) that disorganization is the outcome of three structural characteristics, we argue that using disorder items can give us a reflection of these structural characteristics. This means that using disorder items as a reflexion of neighbourhood characteristics, we are using a proxy variable. Thus, the idea is that disorder represents low quality of a neighbourhood. This is measured by the following questions: *'There is a lot of crime in my neighbourhood', 'There is a lot of drug selling', 'There is a lot of fighting', 'There are a lot of empty and abandoned buildings', 'There is a lot of graffiti'* (as shown in table 2). These items are measured with a 4-point Likert scale, ranging from (1) fully agree, (2) somewhat agree, (3) somewhat disagree, to (4) fully disagree. Values are recoded such that higher scores on these measures can be interpreted as higher quality of the neighbourhoods. Furthermore, factor analysis shows that these items all load on one factor (Eigenvalue=2.360). A reliability test shows positive correlations between the items and provides an alpha of .83 on the combined measure of neighbourhood quality. The final measure we used consists of the mean scores on these variables.

In our model we will use these measures of collective efficacy and neighbourhood quality as proxies representing neighbourhood characteristics which are part of the direct effect on self-reported serious offending, due to the limitations in our dataset to examine structural neighbourhood characteristics.

Peer influence

In order to measure influence by deviant friends, respondents were asked to answer the following items: *'I have friends who used soft or hard drugs like weed, hash, XTC, speed, heroin or coke', 'I have friends who did steal something from a shop or department store', 'I have friends who entered a building with the purpose to steal something', 'I have friends who did threaten somebody with a weapon or to beat him up, just to get money or other things from him'*, and *'I have friends who did beat someone up or hurt someone badly with something like a stick or a knife*'. Respondents could answer these items by the number of friends who engaged in these kinds of criminal behaviour. We recoded each of these items into a dichotomous variable to measure if respondents have peers that engage in any of these activities.

By summing these variables we are able to measure the intensity of exposure to delinquent behaviour from peers for each respondent. If peers to a greater extent engage in different delinquent acts, the score on delinquent peer influence will be higher. By measuring delinquent peer influence this way, we want to encompass the idea that when a respondent has friends which act in multiple different delinquent ways, the exposure to delinquent behaviours, attitudes, and activities will be higher. Subsequently, when exposure is higher, we expect the chance of a respondent acting in a delinquent way to be greater.

Parental supervision

Parental supervision was measured by the item '*Do your parents (or the adults you live with) usually know who you are with when you go out?*'. The values ranged from (1) "never", (2) "sometimes", to (3) "always". In the original measure, constructed by the ISRD-2, the value "I don't go out" was set to missing. Their expectation was that parents who know with whom their children are usually hanging out are able to supervise their children more, i.e. intervening when their children are hanging out with 'the wrong kind of friends'. However, it is argued that parents of students who don't go out, know better with whom their children associate with and that the chance of parental supervision of students staying at home is much higher (Junger-Tas et al., 2010). This is why the answer "always" and "I don't go out" eventually are combined to measure parental supervision (Junger-Tas et al., 2010).

Table 3. *Descriptive Statistics*

	N	Min	Max	Mean	SD
Serious delinquency	1855	0	4	.19	.658
Collective efficacy	1855	1	4	3.01	.64
Neighbourhood quality	1855	1	4	3.42	.69
Delinquent Peers	1855	0	5	.95	1.29
Parental Supervision	1855	1	3	2.60	.57
Education	1855	1	3	1.82	.81
Male	1855	0	1	.50	.50
Nativity	1855	0	1	.68	.47
Self-control	1855	0	100	63.45	18.88
Risk behaviour	1855	0	5	.55	.92
Attitude towards violence	1855	0	100	33.09	21.01

Control Variables

Education

Education was measured by looking at the level of education a respondent was currently attending. A distinction was made between *'Lower school level: Level of schools preparing for the job market but not offering certificates that give access to higher vocational or professional education', 'Medium: Level that gives access to higher vocational or professional education but not to academic studies',* and *'Higher': Level that gives access to academic studies'.*

Nativity

Despite the fact that the data for the Netherlands has a representative portion of minorities, information on ethnicity is not available. Instead, information on whether someone is native or immigrant is available. This was measured by asking respondents in which country they, and their parents, were born. We created a dichotomous variable (0=non-native, 1=native) which on the one hand measures if respondents were born in the country of survey, and on the other hand if the respondent or one of respondent's parents is born in another country. The

latter encompasses first and second generation immigrants. By controlling for nativity we can see if behavioural outcomes differ significantly for natives and non-natives.

Self-control

The theory of self-control argues that the lack of individual self-control is the main factor behind criminal behaviour. It states that "*Criminal acts are a subset of acts in which the actor ignores the long-term negative consequences that flow from the act itself. All acts that share this feature, including criminal acts, are therefore likely to be engaged in by individuals usually sensitive to immediate pleasure and insensitive to long-term consequences. The immediacy of the benefits of crime implies that they are obvious to the actor, that no special skill or learning is required. The property of individuals that explains variation in the likelihood of engaging in such acts we call 'self-control*'"(Hirschi & Gottfredson, 1994:1-2). The theory suggests that individuals with low self-control are more prone to criminal behaviour.

In this study, self-control was measured by a combined measure which consisted of a recoded mean score of four subscale scores (a=.805) being: impulsivity, risk taking, self-centeredness, and temperament. Impulsivity was measured by asking respondents *'I act on the spur of the moment without stopping to think', 'I do whatever brings me pleasure here and now, even at the cost of some distant goal', 'I'm more concerned with what happens to me in the short run than in the long run*'. Risk taking was measured by the items *'I like to test myself every now and then by doing something a little risky', 'Sometimes I will take a risk just for the fun of it', 'Excitement and adventure are more important to me than security'*. Self-centeredness was measured by asking respondents *'I try to look out for myself first, even if it means making things difficult for other people', 'If things I do upset people, it's their problem not mine',* and *'I will try to get the things I want even when I know it's causing problems for other people'.* Temperament was measured by the following items '*I lose my temper pretty easily', 'When I'm really angry, other people better stay away from me',* and *'When I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset'.* The values are, as presented by the ISRD-2, transformed into POMP (= Percentage of Maximum Possible) scores, ranging from 0 to 100. Higher scores represent higher levels of self-control. These transformed mean scores were already provided by the ISRD-2 dataset. This is convenient for the comparison of scores based on Likert items with different numbers of categories.

The most important reason for taking self-control as a control variable is that it is a well-researched individual characteristic. Multiple studies provided evidence on the relation between self-control and criminal and delinquent behaviour, as shown in the study of Pratt and Cullen (2000). Although their study does show that self-control is not the sole cause of criminal behaviour, it still has a positive significant effect, also when other social variables are included (Pratt & Cullen, 2000). Thus, we expect self-control to have a significant effect since it is considered to be an important individual characteristic.

Risk behaviour

For this variable we used a composite measure consisting of five risk items: truancy, consumption of spirits last month, drunk more than once, consumption of soft drugs last month, and consumption of hard drugs last month. It is a sum score of the five risk items, where one point is added for every item, resulting in a scale ranging from 0 to 5. The idea is that if respondents show problematic behaviour, they have a higher probability to commit crimes. In other words, respondents show certain problematic behaviour that is seen as a risk for showing criminal behaviour as well. Prior research has shown strong evidence for covariation of those risk behaviours that are labelled as problematic by society (Jessor, 1991). These behaviours include truancy, alcohol abuse, drug use, sexual precocity and delinquency. Since we are not conducting a longitudinal study we are not able to examine whether risk behaviour has any effect on becoming more criminal, however we can examine whether there is a significant association between risk behaviour and serious offending.

Attitude towards violence

Kraus (1995) showed evidence that attitudes have an important influence on behaviour. Cotten, Resnick, Browne, Martin, McCarraher, & Woods, J.(1994) found that individuals with violent attitudes reported more aggressive behaviour. Positive attitude towards violence was measured by the mean scores of five items: *'A bit of violence is part of the fun', 'One needs to make use of force to be respected', 'If somebody attacks me, I will hit him/her back', 'Without violence everything would be much more boring',* and *'It is completely normal that boys want to prove themselves in physical fights with others'.* The mean scores were transformed into POMP scores ranging from 0 to 100. This transformed mean scores were already provided by the ISRD-2 dataset.

Analysis

Multiple regression analyses were used to test the hypotheses. To examine if a mediation effect is present, we started with looking if the variables we used in our analyses are correlated. The correlations are shown in Table 4. The initial and outcome variables, and the proposed mediators all correlated significantly. The effect of collective efficacy and neighbourhood quality will be tested separately and together in an overall model. The separate models will show if there is a mediating effect for the independent variables individually, the total model will show if the effect of neighbourhood quality and collective efficacy are mediated through the social processes of both parental supervision and delinquent peer influence. In every regression model we first measured the direct effect (M1) after which we added one of the mediating variables (M2), subsequently adding the other mediating variable and removing the former (M3). Next we used both proposed mediators simultaneously accounting for the independent variable (M4), then we added control variables for both mediators separately (M5 and M6). Lastly we added the control variables and both mediators in one total model(M7).

Table 4. *Correlations between variables.*

Variable	1	2	3	4	5	6	7	8	9	10
1.Collective efficacy	-									
2.Neighbourhood quality	.26**	-								
3.Delinquent peers	-.14**	-.36**	-							
4.Parental supervision	.08**	.22**	-.30**	-						
5.Male	.03	-.07**	.05	-.12**	-					
6.Education	.01	.18**	-.03	.07**	.01	-				
7.Self-control	.05*	.39**	-.40**	.30**	-.15**	.12**	-			
8.Native	.07**	.19**	-.09**	.05*	.05*	.23**	.12**	-		
9.Attitude towards violence	-.05*	-.32**	.32**	-.26**	-.25**	-.18**	-.58**	-.16**	-	
10.Risk behaviour	-.09**	-.21**	.47**	-.24**	.01	-.01	-.30**	.02	.20**	-
11.Serious offending	-.05*	-.24**	.41**	-.20**	.13**	-.06*	-.28**	-.04	.24**	.41**

*Notes: **p<.01, *p<.05*

To test whether the suggested mediators carry the influence of neighbourhood quality to serious offending we conducted another analysis. We used an SPSS macro designed by Preacher and Hayes (2013), called PROCESS, which allows us to test the effect of multiple mediators simultaneously. The additional SPSS-macro uses bootstrapping, a nonparametric resampling procedure, to test for mediation. As described by MacKinnon et al. (as cited in Preacher and Hayes, 2008) this method is preferred over other methods, i.e. a Sobel test or the causal steps approach, because the former has higher power while maintaining reasonable control over the Type I error rate. Preacher and Hayes explain that bootstrapping involves repeatedly sampling from the dataset and estimates the indirect effect in each resampled data set (Preacher & Hayes, 2008). This process is repeated thousands of times and builds an empirical approximation of the sampling distribution of the indirect effect. This empirical approximation is used to construct confidence intervals for the indirect effect (Preacher & Hayes, 2008).

When using bootstrapping, we will look at the confidence interval. When zero does not lie within the 95% confidence interval, we can conclude that the indirect effect is indeed significantly different from zero at p=.05 (two tailed). However, when zero does lie within the 95% confidence interval, we cannot conclude that the indirect effect is significantly different from zero, thus providing no evidence that a mediating effect is present. The process macro does not provide standardized output. Therefore, before conducting the PROCESS analyses, we used our own standardized variables for comparability with our regression analyses.

Results

The first regression analysis includes results of collective efficacy on serious offending (shown in Appendix 1). The results show that the direct effect of collective efficacy on self-reported serious offending is significant and negatively directed ($\boldsymbol{\beta}$=-.047; p=.042), suggesting that more collective efficacy leads to less serious offending. However, the explained variance is very small (R^2=.007) and after adding our suggested mediators separately, the effect of collective efficacy does not remain significant. Further, when only adding 'Peer delinquency' the direction of collective efficacy changes to a positive one, although this might be due to chance because of the non-significance. When taking into account the control variables, the suggested mediators shrink in effect size but remain significant, the effect of collective efficacy is not significant ($\boldsymbol{\beta}$=.016;p=.437). These results could suggest that collective efficacy is partially mediated by peer delinquency and parental

supervision. The final model which incorporates both mediators in the model at the same time, shows that parental supervision (***β***=-.016;p=.461) is not significant anymore and peer delinquency (***β***=.248;p<.001) stays significantly associated with serious offending. When we look at the control variables we notice that the effect of risk behaviour (***β***=.264; p<.001) is considerably and significantly contributing to the variance in serious offending. Further, school level, self-control, attitudes towards violence and nativity do not significantly contribute to the variance in serious offending. When looking at the explained variances of the different models, the total model and the model for delinquent peers seem to be the same (R^2=.253), suggesting that the influence of parental control is very small and/or has overlapping variance.

The second analysis we conducted includes the results of neighbourhood quality on self-reported serious offending (shown in Appendix 2). The first model represents the direct effect of neighbourhood quality on self-reported serious offending, showing that the effect is negatively directed (***β***=-.241;p<.001). Peer influence (***β***=.361;p<.001) and parental supervision (***β***=-.066;p=.003) both separately and together, significantly associate with serious offending when accounting for neighbourhood quality. This would suggest that both partially mediate the relation between neighbourhood quality and serious offending. However, when we add the control variables in the total model, parental supervision loses its significance (in M6 and M7). This would mean that for neighbourhood quality only peer influence has a mediating effect on serious offending. Furthermore, showing more risk behaviour (***β***=.262;p<.001) is significantly associated with serious offending and males are more likely to commit serious offences than women (***β***=.097;p<.001). Again, like the first analysis the explained variance of the total model and the model for delinquent peers is the same (R^2=.255).

The third analysis we conducted includes the results of both collective efficacy and neighbourhood quality on self-reported serious offending (shown in Table 5). Collective efficacy is non-significant. After adding our suggested mediators the effect of neighbourhood quality reduces (still significant), though the effect of collective efficacy increases (again, the effect is not significant). Both mediators (peer influence: ***β***=.363;p<.001 and parental supervision: ***β***=-.066;p=.003) are significantly associated with self-reported serious offending when controlled for both neighbourhood quality and collective efficacy, suggesting a partial mediation for peer influence at first sight. After adding the control variables, the effect of neighbourhood quality still remains significant, although smaller in effect size. Peer

delinquency seems to be still influencing serious offending significantly, whereas parental control loses its significant effect. Further, males are more likely to commit serious offending compared to women (***β***=.095;p<.001). Risk behaviour is positively related to serious offending, respondents showing more risky behaviour tend to score higher on serious offending (***β***=.263;p<.001). Self-control, education, nativity and attitude towards violence do not show significant effects on serious offending.

Process

The results of the additional testing for mediation are shown in figure 1 and 2. The bootstrapped intervals are shown for both mediators separately. For the indirect effect of collective efficacy, the 95% confidence interval is [-.0055;.0014] for parental supervision and [-.0358; -.0112] for peer delinquency. The interval for parental supervision contains zero, thus finding evidence that the indirect effect between collective efficacy on serious offending is not mediated through parental supervision. However, the findings suggest that the indirect effect between collective efficacy and serious offending is mediated through peer influence, this is in line with our previous findings when conducting the regression analyses. The direct effect of collective efficacy on serious total offending was not significant (***β***=.0159; p=.437). The total indirect effect of collective efficacy is -.0229 and significant (zero not in interval [-.0389;-.0123]). The R^2 for the model including collective efficacy is 0.25.

For neighbourhood quality the upper and lower bound interval is [-.0062; .0032] for parental supervision and [-.0651; -.0269] for peer delinquency. The R^2 for the model including neighbourhood quality is 0.26. The fact that the confidence interval for parental supervision also contains zero provides evidence that also for neighbourhood quality parental supervision cannot be seen as a mediator, peer delinquency however does partially mediate the effect of neighbourhood quality on serious offending. The direct effect of neighbourhood quality on serious total offending is significant (***β***=.0195; p<.001). The Total indirect effect of neighbourhood quality on serious total offending is .0466 and significant (zero not in interval [-.0694; -.0284]). Thus, these additional tests confirm our first analyses in that peer influence mediates the association between neighbourhood characteristics and serious offending, but there is no mediating effect of parental supervision.

Table 5. *Multiple regression analysis of the combined effect of collective efficacy and neighbourhood quality on serious criminal behaviour with mediation of both parental supervision and delinquent peers.*

	M1		M2		M3		M4		M5		M6		M7	
	β	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error
Neighbourhood quality	-.246**	.022	-.213**	.022	-.113**	.022	-.104**	.022	-.107**	.023	-.067*	.022	-.066*	.022
Collective efficacy	.016	.024	.019	.024	.037	.022	.037	.022	.019	.022	.029	.021	.029	.021
Delinquent peers					.380**	.011	.363**	.012			.237**	.013	.235**	.013
Parental supervision			-.149**	.026			-.066*	.026	-.039	.026			-.013	.025
Male									.089**	.028	.096**	.027	.095**	.028
Education									-.015	.018	-.027	.017	-.027	.017
Risk behaviour									.343**	.016	.265**	.016	.263**	.017
Self-control									-.074*	.001	-.039	.001	-.038	.001
Native									-.005	.030	.002	.030	.002	.030
Attitude towards violence									.060*	.001	.040	.001	.039	.001
R^2	.058		.080		.183		.187		.221		.256		.256	

Notes: ***p<.001, *p<.05.*

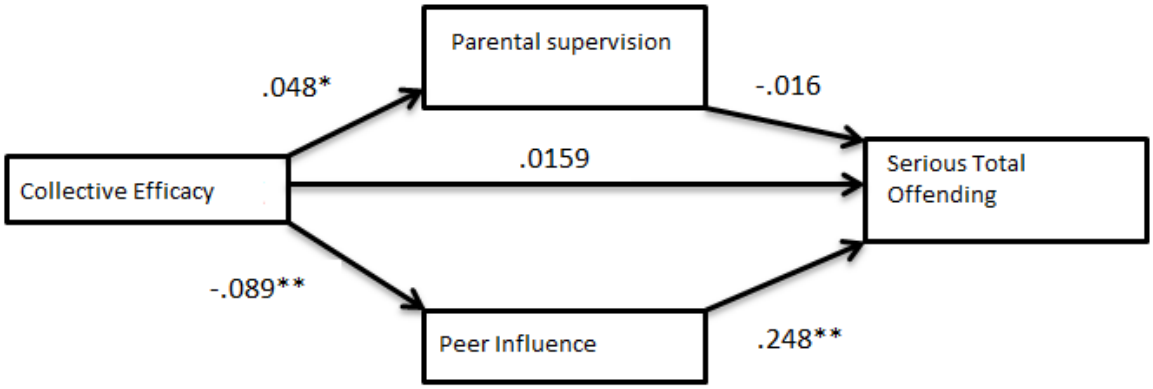

Figure 1. Direct and indirect effects of collective efficacy on serious total offending. * $p < .05$, ** $p < .001$.

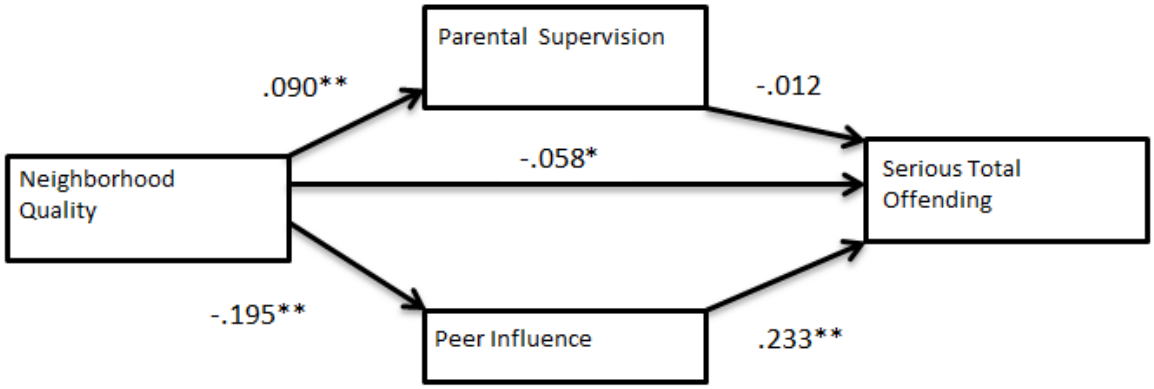

Figure 2. Direct and indirect effect of neighbourhood quality on serious total offending. * $p < .05$, ** $p < .001$.

Conclusion

In this study we tried to answer the question *to what extent is the effect of neighbourhood characteristics on self-reported behaviour among adolescents in the Netherlands, mediated through peer influence and parental supervision?* In order to answer this question we first tested the direct effects of the neighbourhood characteristics on serious offending. Taken separately, both collective efficacy and neighbourhood quality have a significant influence. However, after incorporating the covariates only neighbourhood quality is significantly associated with serious offending.

Then we turned to possible social processes that might influence the relation between neighbourhoods and individual serious offending. We find that exposure to more different kinds of delinquent behaviour by peers mediate the effect of neighbourhood quality and

serious offending. Thus, neighbourhoods influence the extent to which one is exposed to delinquent behaviour through peers, which influences the probability of serious offending. Furthermore, our additional tests for mediation also show that peer influence mediates both neighbourhood quality and collective efficacy. Moreover, these results corroborate the theorized directions, where more collective efficacy and neighbourhood quality significantly reduces peer influence and more peer influence significantly influences serious offending. We can conclude that this confirms our first hypothesis.

Our second hypothesized mediator, parental supervision, does not seem to mediate in the total models. Only when neighbourhood quality and peer influence are not in the model, parental supervision mediates a small portion of the relation between collective efficacy and serious offending. However, our final results show parental supervision is not significantly mediating serious offending. The additional mediating tests confirm these findings: for both collective efficacy and neighbourhood quality parental supervision does not function as a mediator when controlled for covariates. This leaves us to say that our second hypothesis is not confirmed.

In conclusion, we can say that the effect of neighbourhood characteristics on self-reported behaviour among young adolescents in the Netherlands is partially mediated through peer influence. Collective efficacy and peer influence do not significantly contribute to this relation.

Discussion

Concerning our results on neighbourhood characteristics, we were not expecting collective efficacy to be so little in explanatory power. Considering the vast literature we expected collective efficacy to have a significant effect. Possible explanations for these findings could be that the Sampson et al. (1997) measure is context specific for American cities like Chicago, where most of his research is conducted. And that those cities possibly have more neighbourhoods with clear distinct characteristics than in Europe, in this case the Netherlands. The study of Bruinsma (2013) also did not find a significant effect of collective efficacy in the Netherlands.

Another possible explanation could be that there are differences in our measure of collective efficacy. Although we have quite some similarities in the questions that measure the concepts of social cohesion and informal social control, the difficulty could lie in the

measure of informal social control. Our question '*my neighbours notice when I am misbehaving and let me know'* contains less information compared to Sampson's (1997) question '*Would you say that your neighbours could be counted on to intervene in various ways if (i) children were skipping school and hanging out on a street corner, (ii) children were spray-painting graffiti on a local building, (iii) children were showing disrespect to an adult, (iv) a fight broke out in front of their house, and (v) the fire station closest to their home was threatened with budget cuts?*'. Moreover, it is noticeable that the questions are directed at different groups. Our measure is directed at adolescents between 12-15 years old, while Sampson's measure is directed at neighbourhood residents and is more hypothetical. This could also mean that our group has a different interpretation of the question or do not know whether 'informal social control' is present in the whole neighbourhood.

With regards to parental supervision as a mediator, we expected it to mediate the relation between neighbourhood characteristics and serious offending because the neighbourhood can influence the way parents supervise their children. Interestingly, parental supervision mediates a small portion of the relation between collective efficacy and serious offending, which was also found by Rankin and Quane (2002). An underlying mechanism for this could be that parents living in a cohesive neighbourhoods share the same parenting and monitoring values. However, our final results do not support this hypothesis. Our findings have more similarities with the results of Chung & Steinberg (2006), which implicate that the effect of parental supervision on youth offending is mediated by peer influence. This could be a reasonable thought if you consider that parents, who do not monitor their children, do not know if their children are mixing with delinquent peers and are therefore not able to correct behaviour. This could be the case in our study, since every time peer influence was added to a model containing parental supervision, the effect of parental supervision is reduced to non-significance.

Further, our results show a great influence of one of the covariates. Risk behaviour is a considerable factor influencing serious offending, sometimes even bigger in effect size than peer influence. However, we have to be careful when interpreting these results, since we do not have a solid theoretical ground. We know that it is found to be a common covariate (Jessor, 1991), however we do not know enough for causal directions. Moreover, we cannot say that showing risk behaviour influences the onset of serious offending. In order to test this, longitudinal studies are a better alternative. What we can say is that risk behaviour and serious offending go hand in hand. With regards to gender, our results show that male adolescents are more prone to participate in serious offending compared to female adolescents.

The reader should bear in mind that this study does not aim to find causal relationships, as this thesis is based on cross-sectional data. This study, for example, does not engage with the distinction between peer influence or peer selection, or whether neighbourhoods foster crime or crime influences the quality of the neighbourhood. Further, this study is unable to encompass the full motion of neighbourhood characteristics as used in prior studies, which would provide more information on structural characteristics. Our recommendation for further research on neighbourhood effects in Europe would be to include data that can provide information on these structural characteristics. Maybe even look at the additional concepts by Sampson et al. (2002): concentrated disadvantage, residential stability, and immigrant concentration. To end, we can say that we contributed in showing the importance of social processes when looking at criminal behaviour of adolescents, specifically the importance of peer influence.

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Appendix 1.

Multiple regression analysis of the effect of collective efficacy on serious criminal behaviour with mediation.

	M1		M2		M3		M4		M5		M6		M7	
	β	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error
Collective efficacy	-.047*	.024	.015	.022	-.033	.023	.015	.022	.015	.021	-.005	.021	.016	.021
Delinquent peers			.417**	.011			.394**	.011	.250**	.012			.248**	.012
Parental supervision					-.192**	.026	-.078**	.038			-.047*	.026	-.016	.025
Male									.098**	.028	.090**	.028	.097**	.028
Education									-.034	.017	-.025	.018	-.034	.017
Risk behaviour									.266**	.016	.352**	.016	.264**	.017
Self-control									-.053*	.001	-.100**	.001	-.051	.001
Native									-.005	.030	-.017	.030	-.004	.030
Attitude towards violence									.046	.001	.071*	.001	.044	.001
R^2	.007		.173		.039		.178		.253		.212		.253	

Notes: ***p<.001, *p<.05.*

Appendix 2.

Multiple regression analysis of the effect of neighbourhood quality on serious criminal behaviour with mediation.

	M1		M2		M3		M4		M5		M6		M7	
	β	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error	***β***	Std. error
Neighbourhood quality	-.241**	.021	-.104**	.021	-.209**	.022	-.095**	.022	-.059*	.022	-.101**	.022	-.058*	.022
Delinquent peers			.377**	.011			.361**	.012	.235**	.013			.233**	.013
Parental supervision					-.149**	.026	-.066*	.026			-.039	.025	-.012	.025
Male									.098**	.027	.089**	.028	.097**	.028
Education									-.028	.017	-.016	.018	-.028	.017
Risk behaviour									.264**	.016	.342**	.016	.262**	.017
Self-control									-.042	.001	-.076*	-.001	-.040	.001
Native									.003	.030	-.005	.030	.003	.030
Attitude towards violence									.040	.001	.060*	.001	.039	.001
R^2	.058		.182		.079		.186		.255		.220		.255	

Notes: ***p<.001, *p<.05.*