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Does Location Matter? Fear of Crime and its Determinants in Disadvantaged and More Affluent Neighborhoods in Czechia

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Abstract
Despite a long and rich history of fear of crime research, studies which focus on the importance of local specifics are rather limited. This study fills this gap by analyzing fear of crime—measured as concerns about crime and feeling of safety—among residents of disadvantaged neighborhoods. Drawing on victimization and vulnerability theories, the aim of the study is to examine fear of crime and its determinants and assess whether there are significant differences between people living in disadvantaged and more affluent neighborhoods in Czech municipalities. For this purpose, the data obtained from a cross-sectional face-to-face survey carried out across 13 regions of Czechia were used and a hierarchical binary logistic regression analysis was employed. In line with existing literature on fear of crime in the general population, the results of the analysis confirm that fear of crime among inhabitants of disadvantaged neighborhoods is mainly associated with crime-related variables. The strongest effect was found with respect to crime trend perception, with those who perceived crime in their municipality to be increasing being more fearful than those who perceived it to be stable. Higher levels of fear of crime were observed among inhabitants of disadvantaged neighborhoods, though the effect of locality proved negligible. In addition, once respondents perceived crime to be on the rise, the difference between fear of crime among inhabitants of SELs and non-SELs became blurred.

Keywords Fear of crime · Feeling of unsafety · Victimization · Vulnerability · Place · Disadvantaged neighborhood

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Introduction

Although fear of crime research has a long tradition dating back to the 1970s, studies that venture beyond commonly used individual and social characteristics (e.g., Ferraro, 1995) and also examine the importance of local specifics are still lacking. In this regard, disadvantaged neighborhoods are considered to be particularly overlooked, despite being characterized by higher levels of victimization and the concentration of people with lower education and socio-economic status (Friedson & Sharkey, 2015; Wacquant, 2008). In addition, available studies suggest that disadvantaged neighborhoods are often associated with higher levels of fear of crime (Will & McGrath, 1995; Pantazis, 2000: p. 426; Kling et al., 2005; Simon, 2017: p. 87). However, only few studies that "address fear of crime in vulnerable/poor neighborhoods at the national level" (Ladenburg et al., 2016: p. 3) have been published to date.

The higher levels of fear in these neighborhoods may primarily stem from the fact that their inhabitants are often exposed to a number of psychologically and socially challenging situations such as low income, unemployment, limited social mobility, low quality of public services, antagonistic social relationships as well as high crime prevalence (Chataway & Bourke, 2020; Sampson, 2012). This situation, coupled with the lack of economic, social, and other resources available for preventing or remedying the consequences of crime, may contribute to an increase in fear of crime among neighborhood residents and may ultimately have a detrimental impact on their quality of life (Brunton-Smith & Sturgis, 2011; Kujala et al., 2019; Ruijsbroek et al., 2015; Zuberi, 2018).

This study continues the discussion on whether location matters in fear of crime. Focusing on disadvantaged neighborhoods in Czechia, the aim of the study is to analyze fear of crime within this population and to compare it with people living in other neighborhoods within the same municipality. More precisely, we aim to provide a detailed analysis of fear of crime and its determinants among people living in disadvantaged neighborhoods as well as a comparison of the results with those living in more affluent parts of these municipalities. The study uses two indicators of fear of crime: concerns about crime in the municipality and feeling of safety on the street in the neighborhood at night. The determinants of fear of crime are derived from the most prominent approaches employed when ascertaining why certain people are more fearful than others: victimization and vulnerability theory.

The remainder of the study is structured as follows: first, the theoretical background is outlined with regard to the conceptualization of fear of crime, testing the victimization and vulnerability hypothesis in the general population and also in terms of research on fear of crime in disadvantaged neighborhoods, both international and Czech. The second section specifies the parameters of this study, including the research questions, data, variables, and analytic strategy. Subsequently, the results of the analysis are presented, followed by the conclusions and discussion section.

Theoretical Background

Conceptualization of Fear of Crime

Previous studies have confirmed that fear of crime is a multidimensional concept (Caro Cabrera & Navarro Ardoy, 2017; Ferraro & LaGrange, 1987) that is difficult to operationalize and measure (Farrall et al., 1997; Gray et al., 2011). While some authors use terms

such as "fear", "anxiety" and "perceived risk", others talk about "feeling of safety" or "concerns", which further complicates fear of crime research and the consistency of findings. As Farrall et al., (1997: p. 658) state in their study, "our understanding of the fear of crime is a product of the way it has been researched rather than the way it is". For this reason, authors often examine numerous indicators of fear of crime or combine them into complex indexes (e.g., Hanslmaier, 2013; Vauclair & Bratanova, 2017).

In our study, we take advantage of two commonly used indicators of fear of crime: feeling of unsafety and concerns about crime. While the first is considered a "standard indicator" of fear of crime and captures "feelings of insecurity" in general (Hummelsheim et al., 2011: p. 332; cf. Jackson, 2006), the second refers directly to crime itself and evaluates whether people consider crime to be a serious social problem (Ferraro, 1995; Ferraro & LaGrange 1987). The comparison of both indicators and their determinants thus allows us to cover the fear of crime phenomenon more broadly and also helps support the robustness of our findings.

Victimization and Vulnerability Hypothesis in General Population

Victimization theory postulates that a person's concerns are rooted in a rational, objective cause. Therefore, fear of crime is often explained as a consequence of a person's experience with victimization, with victims of crime declaring higher levels of fear than non-victims (Garofalo, 1979; Skogan, 1987; Farrall et al., 2007: p. 2). Direct victimization experience extends to individuals who have themselves been victims of crime. Nevertheless, opinions regarding the impact of direct victimization on fear of crime are conflicting. While certain studies have confirmed this association (Sironi & Bonazzi, 2016; Skogan, 1987), others have not (Box et al., 1988; McGarrell et al., 1997). The incongruity of these results is often attributed to other intervening factors relevant to fear of crime such as gender, age and perceived victimization risk (Agnew, 1985; Sutton & Farrall, 2005), the type of crime in question, i.e., property and violent (Chon & Wilson, 2016; Lee et al., 2020; Nalla et al., 2011; Rountree, 1998), as well as inconsistencies in victimization measures in general (Hale, 1996).

Since some studies have confirmed that people may fear crime despite not being previously victimized (Doran & Burgess, 2012), the role of indirect victimization has started gaining traction. Indirect victimization refers to an individual's awareness of the victimization of relatives, neighbors or peers, and also includes neighborhood gossip and the media crime information (Hale, 1996: p. 80; Heath & Gilbert, 1996; Pickles, 2021). One case of direct victimization may thus indirectly influence a much larger number of people (Covington & Taylor, 1991; Mellgren & Ivert, 2019; Skogan & Maxfield, 1981). In this regard, the relationship between fear of crime and the level of crime gleaned from official crime statistics is often discussed. According to some studies (Miethe & Lee, 1984; Visser et al., 2013), fear of crime is higher in areas with a higher crime rate. However, other authors (e.g., Farrall et al., 2009; Ferraro, 1995) have pointed out that factors which shape our subjective perception of the social world carry greater weight when explaining fear of crime. Such conclusions are bolstered by studies which point to the perceptible discrepancy between trends in official crime statistics and how crime is subjectively assessed by ordinary citizens. While officially registered crime and victimization rates have long been on the decline or have remained stable in many countries across Europe (Aebi et al., 2014; van Dijk et al., 2012), subjective assessments of crime trends have veered in the opposite direction (cf. Forde, 1993). In Czechia, most respondents perceived crime to be increasing

after 2000, despite the fact that the official crime rate was on the decline (Zeman et al., 2010; cf. Tomášek et al., 2019).

In addition to direct and indirect victimization, fear of crime is also influenced by an individual's ability to cope with stressful life events. This ability is closely interlinked with the individual's vulnerability. Killias (1990) defined this as a multidimensional concept, positing that an individual becomes more vulnerable in situations where the individual (1) is exposed to a significant risk of victimization, (2) is unable to prevent potential victimization and (3) expects victimization to yield serious consequences (cf. Jackson, 2009; Killias & Clerici, 2000). At a more general level, vulnerability is understood as a set of factors which make it impossible to effectively prevent or adequately respond to crime, or which prolong the recovery period for coping with the consequences of victimization (Hale, 1996; Pantazis, 2000).

Vulnerability is typically inferred from an individual's physical and social characteristics (Lee et al., 2020; Skogan & Maxfield, 1981). The physical characteristics that are commonly cited are gender, age, ethnic origin and state of health. Fear is most often reported by women (Blöbaum & Hunecke, 2005; May et al., 2010), the elderly (Ceccato & Bamzar, 2016; Chon & Wilson, 2016), racial/ethnic minorities (Brunton-Smith & Sturgis, 2011; Randa & Mitchell, 2018) and disabled people (Vauclair & Bratanova, 2017). On the other hand, social characteristics primarily include socio-economic factors such as income and education, with poor respondents generally exhibiting a higher fear of crime (Pantazis, 2000; Larsson, 2009; cf. Hernández et al., 2020), along with people with lower educational attainment (Kujala et al., 2019).

One understudied characteristic in particular which may affect an individual's fear of crime is a history of perpetration (Lane & Fox, 2013). On the one hand, offenders tend to be victimized more frequently, which may increase their level of fear. On the other hand, their history of perpetration may make them less vulnerable to fear of crime (Sampson & Lauritsen, 1990). According to studies targeted at juvenile and adult offenders, it can generally be said that offenders declare lower levels of fear than non-offenders (Lane, 2006; Lane & Fox, 2012; Wolff & Shi, 2011). This can be attributed to their "immersion in a criminal lifestyle": the more entrenched in crime, the lower the fear of crime, even despite the high declared risk of victimization (Lane & Fox, 2012).

Fear of Crime, Victimization, and Vulnerability in Disadvantaged Neighborhoods

Only a limited number of studies have tackled the issue of fear of crime among inhabitants of disadvantaged neighborhoods. Mostly situated in a US context, such studies provide deep, albeit scarcely comparable insight based on different research designs, ranging from qualitative analyses of in-depth interviews (Carvalho & Lewis, 2003; Zuberi, 2018) to sample surveys (Ladenburg et al., 2016; Skogan, 1987) to mixed-method studies (Kohm, 2009). The comparability of results is further limited by the fact that these studies use diverse conceptualizations of disadvantaged neighborhoods and indicators of fear of crime. In addition, only few studies work with representative samples of inhabitants from disadvantaged neighborhoods at a national level (e.g., Ladenburg et al., 2016).

In line with findings from the general population, the relationship between direct victimization and fear of crime takes conflicting forms in studies addressing disadvantaged neighborhoods. For example, Skogan (1987) purports that property victimization has a stronger association with worry about victimization and concerns about crime in high-crime areas than violent victimization, citing the generally lower incidence of

violent victimization compared to property victimization as one possible reason (cf. Skogan & Maxfield, 1981). Conversely, Ladenburg et al., (2016: p. 27) found experience with violent victimization in socially vulnerable neighborhoods to be more important in lowering the respondent's feeling of safety than property victimization, a relationship which was corroborated at a neighborhood level as well: the more officially recorded violent victimization in an area, the lower the feeling of safety reported by its inhabitants.

Further, in a study based on in-depth interviews with African American adolescents from dangerous neighborhoods, Zuberi (2018: p. 109) claims that "witnessing an incident or knowing someone who was victimized made youth more likely to feel unsafe." This is also consistent with research on the fear of crime–victimization link within the general population (cf. Ferraro, 1995; Hale, 1996; Tseloni & Zarafonitou, 2008). According to Zuberi (2018), feeling of unsafety is contextually conditioned and decreases along with the individual's ability to maintain social distance from dangerous people and events. Similarly, Carvalho and Lewis (2003), who conducted interviews with recipients of welfare benefits from high-crime zones, stress the role of context and individual experience, suggesting that the relationship between indirect victimization and fear of crime is likely to be partly mediated through local knowledge and routinization. They found that the extent of an individual's fear of crime depends on whether crime is perceived as central or as one of many common situations in disadvantaged neighborhoods. The more commonly crime occurs in the lives of residents of disadvantaged neighborhoods, the easier it is to avoid or cope with, just like other everyday problems.

In addition, some studies support the vulnerability hypothesis in the context of disadvantaged neighborhoods. While Skogan (1987) calls attention to the more pronounced fear of crime exhibited by females, the elderly and other vulnerable inhabitants of high-crime areas, Ladenburg et al. (2016) confirm the non-linear relationship between feeling of safety and age (cf. Ferraro, 1995; Moore & Shepherd, 2007). In contrast to findings from the general population, the authors do not identify any relationship between feeling of safety and social characteristics such as education, income or employment status (cf. Kujala et al., 2019; Larsson, 2009). Furthermore, Zuberi (2018) and Carvalho and Lewis (2003) point to the significance of local contexts and define vulnerability as the (in)ability to interpret local patterns of behavior. Nevertheless, none of these studies reflect the "criminal lifestyles" of their respondents (cf. Lane & Fox, 2012), something which could situate their findings in the broader context of everyday life in disadvantaged neighborhoods.

In sum, the studies under review suggest that the results gleaned from testing victimization and vulnerability theories in the population of disadvantaged neighborhoods are not fundamentally different from those obtained from the general population. However, we believe that this conclusion may be conditioned by the fact that the inhabitants of disadvantaged neighborhoods are already included in the samples of the general population, which can obscure results. A study by Kohm (2009: p. 11) examined differences in fear of crime between inhabitants of a disadvantaged neighborhood and the whole city or country, stating that "residents of Spence felt far less safe than residents of Winnipeg or Canadians generally." However, a comparison between this neighborhood and more affluent localities in the city was missing. Our study thus strives to fill this gap by examining fear of crime and comparing its determinants in both the disadvantaged and more affluent neighborhoods within a single municipality.

Disadvantaged Neighborhoods in Czechia

Disadvantaged neighborhoods in Czechia, officially referred to as "socially excluded localities" (SELs), are defined as areas where more than 20 people subsist on welfare benefits and at the same time are materially and symbolically excluded from the surrounding environment (GAC, 2015). Since administrative statistical data on welfare benefits in the country are not available at a level lower than municipal, the identification of SELs is typically based on utilizing local knowledge about which areas are stigmatized as "ghetto", "Bronx" or "houses of horror" (cf. Hurrle et al., 2016). As a result, the boundaries of SELs only rarely correspond to the administrative divisions of municipal areas, meaning that data on socio-demographic and socio-economic characteristics of SEL residents are those acquired through face-to-face surveys, not through administrative registers (see Toušek et al., 2018b).

In 2015, 606 SELs were identified across Czechia, including both small rural neighborhoods as well as metropolitan areas with over 5000 inhabitants. The number of SEL residents has been estimated to be between 95,000 and 115,000, which corresponds to an average of 188 inhabitants per locality (GAC, 2015). Compared to other disadvantaged neighborhoods, such as the American and Danish neighborhoods analyzed in the above studies, Czech SELs are thus substantially smaller (Růžička & Toušek, 2014). Nevertheless, the unifying thread for disadvantaged neighborhoods across national contexts is a high level of victimization and concentration of vulnerable populations.

The prevalence and incidence of violent and property victimization in populations of SELs is significantly higher than in populations outside these areas. With respect to socio-demographic characteristics, inhabitants of SELs, compared to the general population of Czechia, tend to be unmarried, have lower education and income, be more likely unemployed, live in rental housing and move more often (Toušek et al., 2018b). They are also much more likely to have a history of criminal behavior (Toušek et al., 2018a: pp. 189–190, 198).

SELs present an interesting case for testing victimization and vulnerability theories, as their inhabitants are perceived to be dangerous by respondents in studies on fear of crime in Czech towns (Toušek & Hejnal, 2011: pp. 24–25; Toušek et al., 2015: p. 37; Šimáček et al., 2020: p. 317). In the past, this reputation has led to the implementation of numerous safety measures (Kupka et al., 2022), justified by high crime rates and incivilities in these neighborhoods, though such rationale was often not substantiated by official crime statistics (Toušek et al., 2018a: p. 25). This study thus shifts the focus to how fear of crime is experienced by those who tend to be deemed the very source of crime in public discourse.

Current Study

Drawing on literature on fear of crime in disadvantaged neighborhoods and victimization and vulnerability theories, this study has two objectives. First, using the whole sample of respondents living in SELs, we examine fear of crime—measured as concerns about crime and feeling of unsafety—and the effect of various socio-economic (education, employment, household income) and crime-related (victimization, crime perpetration, crime trend perception) determinants on fear of crime in disadvantaged neighborhoods in Czechia. Second, we take advantage of data collected in both SELs

and more affluent neighborhoods within the same municipality (non-SELs) in five regions of Czechia and analyze differences in fear of crime and the effect of the aforementioned determinants on fear between the two populations.

We pose the following research questions:

1. What is the effect of socio-economic and crime-related determinants on fear of crime in SELs?
2. Is fear of crime and the strength of the effect of determinants on fear of crime equal in both SEL and non-SEL populations?
3. Are there any differences in fear of crime and its determinants with respect to different concepts of fear of crime?

Data

The data for this study were constructed via a cross-sectional survey that took place in 2016 and focused on SEL inhabitants and their neighbors in Czech municipalities. The survey concentrated primarily on victimization but also covered topics such as perception of social issues, fear of crime, satisfaction with formal institutions of social control, experience with discrimination, crime perpetration and illicit drug consumption.

The respondents were selected in two steps. First, municipalities where SELs were identified by the Czech administration (GAC, 2015) were divided into five quantiles according to the number of municipal inhabitants and the percentage of SEL residents in the municipality's total population. Municipalities with SELs were then selected from each region, not including Prague, to obtain representative examples of all possible combinations of quantiles from both categories. This yielded a set of 181 towns with 289 SELs. Out of this set, municipalities in five regions, namely Hradec Králové, Karlovy Vary, Liberec, Moravia-Silesia, and Ústí nad Labem, were used to include people living outside SELs for comparative purposes.

Second, both SEL and non-SEL respondents were selected based on quota sampling. Given that SEL residents are a typical example of a hard-to-survey population (Tourangeau et al., 2014), standard sampling techniques could not be applied. There was no database for random sampling, and a random walk approach proved unfeasible due to the low number of inhabitants of many SELs and low response rate in the pilot phase of the study conducted in the Karlovy Vary region in March 2016 (cf. Toušek et al., 2018a, b: pp. 22–23). The quotas were based on data provided by the Czech Statistical Office and corresponded to the demographic structure of SELs and towns (gender and age).

The data were collected face to face by interviewers recruited mainly among students of cultural and social anthropology; many had previous experience with interviewing marginalized groups of people. All interviewers were given specific instructions about research ethics and safety concerns in the context of SELs. The respondents were considered eligible if they had been living at their current address (SEL/non-SEL) for at least 1 month and were at least 15 years old (for a reflection of the survey, see Walach et al., 2019). A total of 2,566 questionnaires were filled out by SEL residents and 590 questionnaires by non-SEL residents.

Dealing with the Missing Values

Values were missing for three of the variables included in our analysis. A negligible proportion of respondents did not state their employment status (2.1%) and did not express their perception of the crime trend in their municipality (6.6%). The highest number of missing values was associated with the question on household income. In sum, 15.8% of respondents did not know the exact amount or refused to answer the question entirely.

Due to the relatively high proportion of missing values for household income, we applied a multiple imputation technique to the data which is considered to work well with all types of missing data (Pedersen et al., 2017). Nevertheless, when comparing the estimated models with and without multiple imputation, no significant differences in the analysis results were found. Therefore, we decided to exclude the above-mentioned missing values from the subsequent analysis. Our sample consisted of 1,996 respondents living in SELs and 449 non-SEL respondents.

Dependent Variables

Our study uses two common measures of fear of crime to ensure the robustness of our results: feeling of unsafety and concerns about crime. To measure *concerns about crime* we asked respondents: "In general, how concerned are you about crime in (name of municipality)?", with answer categories ranging from "1" = not at all concerned to "7" = very much concerned. This variable can be perceived as a more "specific" measure of fear of crime because respondents were asked to assess their concerns about crime in a municipality. On the other hand, feeling of unsafety is considered a "general" indicator of fear of crime as it does not refer to crime explicitly (Garofalo, 1979). To measure *feeling of unsafety*, we asked respondents: "When you walk alone at night on the street in your neighborhood, how safe do you feel?", with answer categories ranging from "1" = very safe to "7" = very unsafe. Both variables were binarized[1] so that categories "6" and "7" were coded as "1" = high feeling of unsafety/concerns about crime, and other categories as "0".

Independent Variables

We examine the effect of three socio-economic variables and four crime-related variables on fear of crime. *Education* consists of four categories: "1" = elementary education, "2" = high school without diploma, "3" = high school with diploma and "4" = university. *Employment status* is measured using five categories: "1" = housework, maternity or parental leave, "2" = retired, "3" = student, "4" = unemployed and "5" = employed. Finally, respondents were asked to assess their total net monthly *household income*, including pensions, maternity allowances, scholarships, etc. and to place themselves in one of 11 household income categories, where "1" = 0–6,000 CZK and "11" = 50,001 CZK or more.[2]

[1] Converting dependent variables into binary has analytical justification. The variables are skewed and the absence of heteroscedasticity, one of the assumptions of OLS regression, was not met. Similarly, ordered logistic regression could not have been used since the proportional odds assumption was not met either. In addition, we generally prefer not to use multinomial regression because the scales of dependent variables cannot be easily divided into natural categories.

[2] 1 CZK was the equivalent of 0.037 € in 2016 (Kurzy.cz, 2022).

Crime perpetration is a categorical variable measuring the respondent's self-reported lifetime criminality. First, we asked respondents whether they had ever been sentenced to unconditional imprisonment. Then we asked whether they had ever violated the law in addition to the criminal offense that led to imprisonment. This resulted in four answer categories: "1" = unconditional imprisonment and (other) violation of law, "2" = unconditional imprisonment only, "3" = violation of law only and "4" = none. We used *property* (larceny, car theft, car break-in, bicycle/motorcycle/moped theft, fraud, burglary, attempted burglary, vandalism, corruption, loansharking, labor exploitation) and *violent* (assault, psychological violence, bullying, robbery, threatening, extortion, sexual harassment, sexual assault, sexual exploitation, hate crime) *victimization indexes*, which refer to the percentage of all analyzed offenses that the individual was victimized by in the last 12 months, with higher values indicating a greater extent of victimization. The main advantage of such victimization indexes is that they do not only measure whether an individual has been victimized[3] but also assess the variability of victimization. For the sake of the subsequent regression analysis, square roots were taken of both victimization indexes due to their skewed distribution. Finally, we were interested in the respondent's *perception of the crime trend* in their municipality: "Do you think that the crime rate[4] (in your municipality) has decreased, increased or remained stable in the last five years?", with answer categories "1" = decreased, "2" = increased and "3" = stable.

Control Variables

We control for the standard set of variables used in fear of crime research (Hale, 1996). *Gender*, the most consistent socio-demographic determinant of fear of crime, is a binary variable coded as "1" = men and "0" = women. *Age* enters the analysis as a continuous variable ranging from 15 to 94 years of age. We also introduced age squared to examine the non-linear nature of the fear of crime–age link (Ferraro, 1995). Finally, *size of municipality* is a categorical variable consisting of five categories: "1" = less than 2,000, "2" = less than 5,000, "3" = less than 30,000, "4" = less than 80,000 and "5" = more than 80,000 inhabitants.

Analytic Strategy

The analysis proceeds in three steps. First, we present descriptive statistics, associations of independent variables with fear of crime and differences between the analyzed variables when comparing SEL and non-SEL populations on a bivariate level. Second, we use the whole sample of respondents living in SELs across Czech municipalities and apply binary logistic regression analysis to estimate two separate hierarchical models for feeling of unsafety and concerns about crime to find significant determinants of fear of crime in SELs and assess the unique role of socio-economic and crime-related factors in fear of crime. Third, we limit the dataset to the five regions where data from both SEL and non-SEL

[3] 49% of the SEL population were victimized compared to 33% in the non-SEL population.

[4] We did not include official crime data in our analysis as they are only available at the level of police precincts and thus only rarely correspond geographically to SELs. In addition, research suggests that perception indicators such as perceived crime trend may be even better determinants of fear of crime compared to official statistics, since people usually have distorted information about criminality and crime trends in their neighborhood (e.g. Forde, 1993; Tomášek et al., 2019).

populations were collected and examine differences in the effect of the analyzed determinants on fear of crime in both populations.

Results

Descriptive Statistics and Bivariate Analysis

Table 1 presents descriptive statistics and bivariate correlations separately for all variables included in the analysis for the whole sample of SELs and for the limited dataset of SEL and non-SEL populations in five regions. Regarding the whole sample (N = 1,996), higher fear of crime was declared by more than one third of SEL residents (36% for concerns about crime and 39% for feeling of unsafety). At the bivariate level, the analysis shows that perceived crime trend exhibit a moderate association (CV = 0.332) with concerns about crime. Weak associations can be found with respect to property and violent victimization (r = 0.121 and 0.112 respectively). The effect of socio-economic variables, on the other hand, is more pronounced with respect to feeling of unsafety. A significant association was confirmed between feeling of unsafety and education (CV = 0.107), employment status (CV = 0.206) and household income (r = − 0.093). Data suggest that those with higher education, the employed and people with higher household income declare lower fear of crime. Feeling of unsafety is also gender-specific, with women showing more fear than men (r = −0.312). A significant, though rather weak, relationship was revealed between feeling of unsafety and crime trend perception (CV = 0.182).

Fear of crime and the associations with its determinants between SEL (N = 1,208) and non-SEL populations (N = 449) were calculated for the limited dataset. Significantly higher levels of concerns about crime (38%) and feeling of unsafety (39%) were found among SEL residents. There is a moderate relationship between type of population and education (CV = 0.552) as well as employment status (CV = 0.370). The effect of household income is rather weak (r = −0.352). Data suggest that people living in SELs attain lower education, are less often employed and have lower household income compared to those living in non-SEL neighborhoods. Residents of SELs also have greater experience with crime perpetration and are more often victimized. No statistically significant difference was found in crime trend perception, where about two-fifths of respondents from both populations perceived crime in their municipality to be increasing; only about 16% of respondents declared a decrease in crime.

Regression Analysis

The effect of socio-economic and crime-related determinants on concerns about crime and feeling of unsafety was examined using binary hierarchical logistic regression analysis. Table 2 shows the estimated models for the entire sample of SEL residents. In model 1, we control for gender, age, and size of municipality. In model 2, we estimate the effect of education, employment status and household income in order to assess their role in explaining fear of crime. Finally (model 3), crime-related factors enter the analysis while controlling for all socio-economic variables. Hosmer–Lemeshow test was used to assess the goodness of fit of all models. Only at the most restrictive, model 1 of concerns about crime proved the p value < 0.05 and thus a worse goodness of fit of the model. This is likely due to the fact that

Table 1 Descriptive statistics, association of independent variables with fear of crime, and differences between SEL and non-SEL populations

Variables	Range	SEL–full							SEL–comp			Non-SEL–comp			SEL x non-SEL	
					Association with fear of crime (Cramer V/r)											
		Mean	SD	%	Concerns about crime		Feeling of unsafety		Mean	SD	%	Mean	SD	%	Association between populations (Cramer V/r)	
Concerns about crime	0–1	0.36	0.48						0.38	0.49		0.25	0.44		0.116	***
Feeling of unsafety	0–1	0.39	0.49						0.39	0.49		0.28	0.45		0.098	***
Gender (1 = men)	0–1	0.46	0.50		−0.101	***	−0.312	***	0.48	0.50		0.49	0.50		ns	
Age	15–94	42.41	16.39		ns		ns		42.96	16.62		42.67	18.55		ns	
Municipality size (ref. 5 = over 80,000 inhabitants)	1–5			12.98	0.131	***	0.108	***			11.84			24.05	0.158	***
Less than 2,000				6.51							6.54			4.45		
Less than 5,000				13.58							16.23			13.81		
Less than 30,000				45.89							43.54			41.43		
Less than 80,000				21.04							21.85			16.26		
Education (ref. 4 = university)	1–4			1.55	ns		0.107	***			0.91			13.81	0.552	***
Elementary				61.82							61.18			13.36		
High school without graduation				29.86							30.79			32.29		
High school with graduation				6.76							7.12			40.53		
Employment status (ref. 4 = unemployed)	1–5			31.56	0.070	*	0.206	***			32.62			5.12	0.370	***
Housework, maternity or parental leave				14.63							13.08			5.35		
Retirement				21.94							22.19			20.94		
Student				3.51							3.73			12.25		
Employed				28.36							28.39			56.35		
Household income	1–11	5.77	2.52		−0.047	*	−0.093	***	5.76	2.53		7.88	2.44		−0.352	***
Experience with crime perpetration (ref. 4 = none)	1–4			69.34	0.080	*	0.153	***			68.79			84.19	0.204	***

Table 1 (continued)

Variables	Range	SEL–full							SEL–comp			Non-SEL–comp			SEL x non-SEL	
					Association with fear of crime (Cramer V/r)											
		Mean	SD	%	Concerns about crime		Feeling of unsafety		Mean	SD	%	Mean	SD	%	Association between populations (Cramer V/r)	
Imprisonment and violation of law				4.76							4.64			1.34		
Imprisonment only				11.77							12.91			0.89		
Violation of law only				14.13							13.66			13.59		
Property victimization	0–54.55	4.91	7.57		0.121	***	0.056	*	5.34	7.91		3.18	6.28		0.127	***
Violent victimization	0–60	3.81	7.48		0.112	***	0.077	***	3.84	7.43		1.96	5.32		0.120	***
Crime trend perception (ref. = stay same)	1–3			41.23	0.332	***	0.182	***			38.66			44.77	ns	
Decrease				16.73							16.56			16.04		
Increase				42.03							44.78			39.20		
N	**1,996**								**1,208**			**449**				

Note: Crime trend perception in the municipality

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 2 Binary logistic regression—determinants of concerns about crime and feeling of unsafety among inhabitants of SELs

	Concerns about crime								Feeling of unsafety							
	M1			M2			M3		M1			M2			M3	
Variables	OR		S.E	OR		S.E	OR	S.E	OR		S.E	OR		S.E	OR		S.E
Gender (1 = men)	0.643	***	0.061	0.634	***	0.066	0.617	*** 0.076	0.249	***	0.025	0.280	***	0.030	0.320	***	0.039
Age	1.012		0.016	1.003		0.018	1.017	0.019	0.973		0.015	0.975		0.018	0.987		0.018
Age^2	1.000		0.000	1.000		0.000	1.000	0.000	1.000	*	0.000	1.000		0.000	1.000		0.000
Municipality size (ref. = over 80,000 inhabitants)																	
Less than 2,000	0.352	***	0.091	0.356	***	0.092	0.463	** 0.126	0.435	**	0.107	0.450	**	0.112	0.516	*	0.132
Less than 5,000	0.602	**	0.112	0.599	**	0.112	0.785	0.157	0.659	*	0.126	0.664	*	0.129	0.765		0.152
Less than 30,000	0.878		0.127	0.881		0.128	1.010	0.158	0.898		0.136	0.912		0.140	0.996		0.156
Less than 80,000	1.158		0.188	1.156		0.188	1.225	0.214	1.206		0.204	1.198		0.206	1.257		0.220
Education (ref. = university)																	
Elementary				1.702		0.720	1.444	0.640				3.019	*	1.451	3.093	*	1.500
High school without graduation				1.606		0.685	1.315	0.587				2.527		1.225	2.459		1.202
High school with graduation				1.247		0.571	0.883	0.424				1.835		0.945	1.687		0.876
Employment status (ref. = unemployed)																	
Housework, maternity or parental leave				0.814		0.133	0.782	0.137				1.299		0.214	1.285		0.216
Retirement				0.959		0.159	1.046	0.186				1.185		0.203	1.184		0.207
Student				0.593		0.192	0.519	0.178				0.542		0.180	0.486	*	0.164
Employed				0.879		0.118	0.938	0.136				0.831		0.118	0.839		0.122
Household income				0.990		0.021	0.996	0.022				0.959		0.021	0.959		0.021
Experience with crime perpetration (ref. 4 = none)																	
Imprisonment and violation of law							2.114	** 0.520							0.784		0.206
Imprisonment only							1.123	0.198							0.709		0.131
Violation of law only							0.826	0.132							0.709	*	0.113
Property victimization							1.099	** 0.033							1.078	*	0.032
Violent victimization							1.104	** 0.034							1.098	**	0.034

Table 2 (continued)

	Concerns about crime						Feeling of unsafety					
	M1		M2		M3		M1		M2		M3	
Variables	OR	S.E	OR	S.E	OR	S.E	OR	S.E	OR	S.E	OR	S.E
Crime trend perception (ref. = stay same)												
Decrease					0.667 *	0.112					0.628 **	0.100
Increase					3.381 ***	0.377					1.546 ***	0.172
Constant	0.593	0.204	0.537	0.323	0.183 **	0.119	1.976	0.699	0.901	0.589	0.458	0.309
R2 (Nagelkerke)	**0.040** [a]		**0.046**		**0.198**		**0.150**		**0.172**		**0.213**	

Note: Property and violent victimization square-rooted

[a]Hosmer-Lemeshow test (p value) < 0.05

N = 1,996; SEL–full

*p < 0.05, **p < 0.01, ***p < 0.001

the model does not contain the key determinants of fear of crime. All other models fit the data well.

In line with the bivariate analysis, concerns about crime are mainly associated with crime-related variables. The results show that both property and violent victimization are related to a higher fear of crime. However, the strongest association was found with crime trend perception. For example, those who perceived crime in their municipality to be increasing had an approximately three times higher chance (OR = 3.381) to declare higher concerns about crime than those who thought it was stable. Similarly to concerns about crime, the data point to a relationship between feeling of unsafety and crime-related factors, especially crime trend perception. Nevertheless, a significant effect was also identified with respect to education and employment status. While people with elementary education had a three-times-higher chance (OR = 3.093) to declare higher fear than those with a university degree, students were characterized by lower levels of fear compared to the unemployed (OR = 0.486). Interestingly, crime perpetration was associated with higher concerns about crime (both imprisonment and violation of law) and lower feeling of unsafety (violation of law only).

With respect to the control variables, across all models significant associations were found for gender and size of municipality, with women and those living in bigger cities declaring higher levels of fear than their counterparts. Model 1 of feeling of unsafety pointed to the non-linear relationship between the dependent variable and age. However, when other variables entered models 2 and 3, the relationship turned out to be non-significant.

Subsequently, using a limited sample of five Czech regions, we wanted to ascertain whether there were any differences in fear of crime based on the respondent's place of residence and examine the strength of the effect of independent socio-economic and crime-related variables on fear of crime between SEL and non-SEL populations (Table 3). First, we estimated model 1 containing a binary variable that measures locality, i.e., whether an individual lives in a SEL = "1" or non-SEL = "0". However, the effect of locality proved negligible. Further, we proceeded step by step with a set of separate models with interactions terms of locality and independent variables (not presented here). No significant differences in the effects were found except for crime trend perception (model 2). The estimated odds ratios suggest that the difference between fear of crime among residents of SELs who perceive crime to be increasing and those who perceive it as stable is less pronounced (OR = 0.545 for concerns about crime and 0.345 for feeling of unsafety) than among non-residents of SELs.

To facilitate the interpretation of results, we plotted the estimated values of interaction between locale (SEL versus non-SEL population) and crime trend perception into graphs which show predictive margins for concerns about crime (Graph 1) and feeling of unsafety (Graph 2). In general, we can observe higher levels of fear of crime in SELs, as already suggested by the descriptive statistics in Table 1. However, once respondents perceive crime to be on the rise, the difference in fear of crime between inhabitants of SELs and non-SELs disappears.

Discussion and Conclusions

Despite a long tradition of research on fear of crime and its determinants (e.g., Furstenberg, 1971; Garofalo, 1979), there is a lack of studies that focus beyond the general population. Previous studies have revealed that residents of disadvantaged neighborhoods suffer from higher vulnerability and victimization (Friedson & Sharkey, 2015; Toušek et al., 2018a; Wacquant, 2008), which may make them more susceptible to fear of crime (Will &

Table 3 Binary logistic regression—differences between SEL and non-SEL populations

	Concerns about crime						Feeling of unsafety					
	M1			M2			M1			M2		
Variables	OR		S.E	OR		S.E	OR		S.E	OR		S.E
Gender (1 = men)	0.637	**	0.086	0.637	**	0.086	0.293	***	0.040	0.289	***	0.039
Age	1.041		0.022	1.041		0.022	0.990		0.021	0.991		0.021
Age^2	1.000		0.000	1.000		0.000	1.000		0.000	1.000		0.000
Municipality size (ref. = over 80,000 inhabitants)												
Less than 2,000	0.394	**	0.123	0.389	**	0.122	0.455	*	0.140	0.429	**	0.134
Less than 5,000	0.698		0.149	0.695		0.149	0.834		0.179	0.824		0.178
Less than 30,000	0.884		0.151	0.881		0.151	1.117		0.193	1.110		0.194
Less than 80,000	0.950		0.183	0.956		0.185	1.170		0.228	1.191		0.234
Education (ref. = university)												
Elementary	1.348		0.458	1.291		0.448	1.374		0.446	1.270		0.420
High school without graduation	1.356		0.450	1.301		0.442	1.053		0.334	0.975		0.316
High school with graduation	1.038		0.351	1.027		0.356	0.897		0.288	0.881		0.288
Employment status (ref. = unemployed)												
Housework, maternity or parental leave	0.950		0.209	0.960		0.210	1.252		0.267	1.261		0.269
Retirement	1.154		0.251	1.150		0.248	1.909	**	0.412	1.905	**	0.411
Student	0.596		0.204	0.596		0.205	0.581		0.191	0.584		0.193
Employed	1.092		0.184	1.091		0.183	0.895		0.154	0.890		0.153
Household income	0.964		0.024	0.964		0.024	0.970		0.025	0.968		0.025
Experience with crime perpetration (ref. 4 = none)												
Imprisonment and violation of law	1.829	*	0.562	1.791		0.547	0.802		0.266	0.798		0.264
Imprisonment only	1.168		0.252	1.158		0.248	0.797		0.181	0.796		0.180
Violation of law only	1.126		0.202	1.114		0.200	0.479	***	0.094	0.467	***	0.092
Property victimization	1.136	***	0.038	1.137	***	0.038	1.097	**	0.038	1.100	**	0.038
Violent victimization	1.096	*	0.040	1.092	*	0.039	1.127	**	0.042	1.120	**	0.041

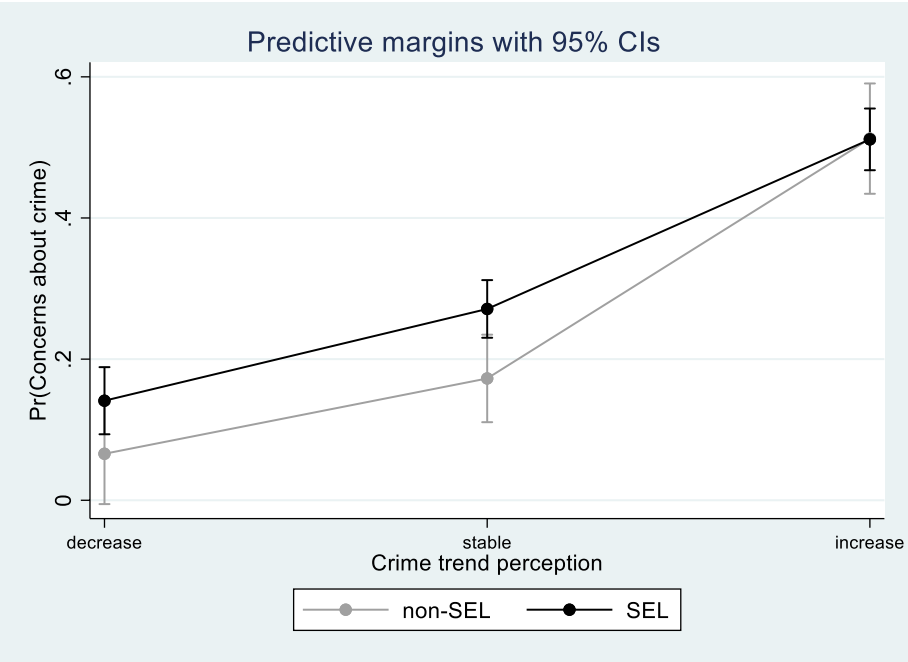
Table 3 (continued)

	Concerns about crime						Feeling of unsafety					
	M1			M2			M1			M2		
Variables	OR		S.E	OR		S.E	OR		S.E	OR		S.E
Crime trend perception (ref. = stay same)												
Decrease	0.424	***	0.091	0.329		0.207	0.558	**	0.107	0.715		0.315
Increase	3.447	***	0.428	5.490	***	1.442	1.897	***	0.237	4.204	***	1.070
SEL (1 = yes)	1.284		0.217	1.828	*	0.479	1.102		0.187	1.982	**	0.491
SEL × Crime trend perception												
Decrease				1.300		0.873				0.704		0.346
Increase				0.545	*	0.162				0.345	***	0.101
Constant	0.107	***	0.066	0.084	***	0.054	0.736		0.443	0.511		0.316
R2 (Nagelkerke)	**0.241**			**0.245**			**0.262**			**0.272**		

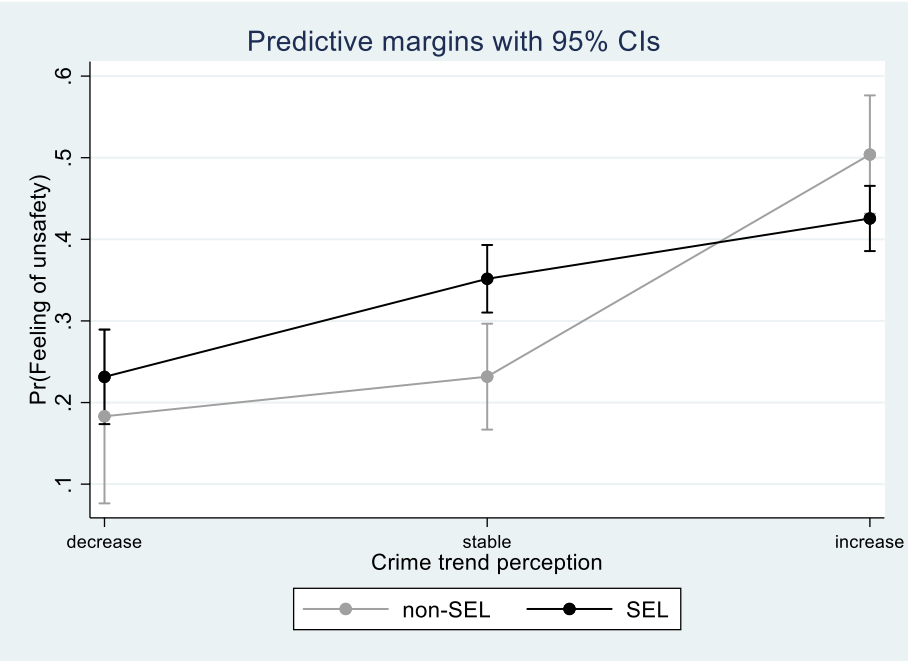
Note: Property and violent victimization square-rooted

$N = 1{,}657$; SEL–comp. and non-SEL–comp

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$



Graph. 1 Concerns about crime and crime trend perception in SEL and non-SEL populations



Graph. 2 Feeling of unsafety and crime trend perception in SEL and non-SEL populations

McGrath, 1995; Pantazis, 2000: p. 426; Kling et al., 2005; Simon, 2017: p. 87). Drawing on victimization and vulnerability theories, our study aimed to examine fear of crime and the effect of various socio-economic and crime-related determinants on fear of crime in disadvantaged neighborhoods (SELs) in Czechia and to analyze differences in fear of crime and these effects across SEL and non-SEL populations. For this purpose, two indicators of fear of crime were used: feeling of safety on the street in the neighborhood at night and concerns about crime in the municipality.

In line with existing research on fear of crime in the general population (e.g., Ferraro, 1995; Jackson & Stafford, 2009; Russo et al., 2013; Tseloni & Zarafonitou, 2008; Warr, 1984), this study has revealed that fear of crime is mainly associated with crime-related variables in the whole sample of SEL residents. For both indicators of fear of crime, the strongest effect was found with respect to crime trend perception; those who perceived a rise in crime in their municipality in the last 5 years were more fearful than those who perceived it to be stable. Feeling of safety also seems to be influenced by socio-economic variables (education, employment status), corresponding with the assumption that it is rather a "general" indicator of fear, not limited to crime or criminal activity (Garofalo, 1979), and can thus be saturated with a wider range of variables. As Jackson (2006: p. 261) asserts, feeling of safety "may operate as a 'sponge', absorbing all sorts of anxieties about related issues of deteriorating moral fabric, from family to community to society". On the other hand, the data suggest that the indicator measuring concerns about crime taps directly into fears associated with criminality. Nevertheless, the stability of the results across models, which correspond with existing research, bolsters the robustness of our findings.

Interestingly, feeling of unsafety decreased for those who violated the law, while experience with both imprisonment and violation of the law was associated with higher concerns about crime. This contradicts findings from other contexts, where a criminal lifestyle is likely to lower an individual's fear of crime (Lane & Fox, 2012). Nevertheless, our study did not inquire into the timeline of the respondent's imprisonment and/or violation of the law. It is thus possible that people with a criminal past who have since become law-abiding citizens were overrepresented in the sample. In this context, it is possible that desistance from crime may exacerbate various emotions in former offenders, including fear of crime (cf. Farrall & Calverley, 2005: pp. 98–130). The role of temporality when analyzing the connection between perpetration and fear of crime is an interesting line of inquiry deserving of further research.

Based on the limited sample of five Czech regions, we found people living in SELs more fearful than those living in more affluent neighborhoods (cf. Kohm, 2009). Nevertheless, the effect of locale itself on fear of crime was revealed to be negligible. This means that factors other than locality are likely to inform fear of crime among its inhabitants. In our study, a significant difference between the populations was found for crime trend perception. The data suggest that fear of crime among non-SEL inhabitants is likely to be much more influenced by changes in crime trend perception than in the case of the SEL population.

This supports the findings of Franklin et al. (2008), who pointed to the fact that people who live in potentially dangerous locations for a long time can eventually suffer from desensitization, i.e., perceive criminality and their adverse living conditions as something "normal" (cf. Carvalho & Lewis, 2003; Reid et al., 1998). In addition to desensitization, the possible influence of political institutions and the media on fear of crime cannot be neglected (Reiner, 2002; Simon, 2009), as we can assume that reports on local crime and crime trends are likely to induce higher fear among people with higher socio-economic status and no victimization experience (cf. Callanan, 2012; Weitzer & Kubrin, 2004). Future

research should thus focus on the relevant local political and media landscape as well as the specifics of how these institutions communicate with both populations.

Our study brought forth evidence that determinants of fear of crime do not differ substantially when comparing SEL and non-SEL populations, except for crime trend perception. Nevertheless, there are several limitations that should be considered. First, given that we use cross-sectional data, the causality of the analyzed relationship cannot be determined (e.g., fear of crime–perceived crime trend link). However, we draw on existing studies when considering determinants in the analysis and our findings prove in line with the conclusions of these studies. Second, since the research design did not contain indicators of perceived social disorder—an important fear of crime determinant in both general and disadvantaged populations (Farrall et al., 2007; Kohm, 2009; Ladenburg et al., 2016)—we could not consider it in the analysis. However, as the differences in fear of crime determinants between the two populations are rather small, this variable could have proved to be significant. Third, the fact that the inhabitants of SELs and non-SELs were from the same municipality may be a reason as to why our study did not reveal any differences in fear of crime determinants other than crime trend perception. On the other hand, by measuring the differences in fear of crime within the given populations, it allowed us to control structural variables that affect the inhabitants of these municipalities. Finally, the differences between the determinants of fear of crime within both populations were examined using a limited dataset of five Czech regions. A data analysis based on all regions in Czechia would thus aid in supporting the robustness of our findings.

As mentioned earlier, disadvantaged neighborhoods are often considered a source of fear to outsiders, though little attention has been paid to whether their inhabitants also fear crime and what affects such fear. Our study has pointed to the fact that people living in these neighborhoods are more fearful than those who live in more affluent localities. However, the question remains as to how reliable the differences in fear of crime among both populations really are, given that people living in SELs are likely to be subjected to desensitization. In other words, people from SELs may tend to downplay their problems or consider them to be normal, which further complicates fear of crime research in these localities. In addition, the indistinct population differences in fear of crime may be further attributed to the influence of information on crime and crime trends from the spheres of politics and the media. Future research should thus place a heightened focus on the mechanisms that induce or mitigate fear of crime not only in the general population, but also in localities where the problem of fear and its impact on quality of life is often overlooked.

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