



## Article

# Predicting Frequent and Feared Crime Typologies: Individual and Social/Environmental Variables, and Incivilities

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**Abstract:** The lack of organisation in urban spaces plays a decisive role in the level of integration, communication and social bonds of the residents, impacting the citizens' feelings of trust and security. Different personal variables and contextual characteristics have been associated with the fear of crime (FOC). The main objective of this study is to analyse how individual and social/environmental variables, and incivilities, predict crime against people and property, crime that has either happened or is feared to happen. Five hundred and fifty-four residents ( $M = 43.82$ ;  $SD = 18.38$ ) in the Historic Centre of Porto (HCP), Portugal, answered 61 items of the Diagnosis of Local Security (DLS) Questionnaire. The results of this study show that in the most frequent crime category, 72% of occurrences represent crime against property. In the feared crime category, there is a preponderance of crime against people (61%). Age of the respondents predicted the most frequent and feared crime, while sex predicted the most feared crime only. Social/environmental variables, as well as incivilities, also predict the frequent and feared crime in two typologies, i.e., crime against people and crime against property. Practical implications to reduce FOC and areas for further investigation are discussed.

**Keywords:** fear of crime (FOC); individual and social/environmental variables; incivilities; crime



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## 1. Introduction

Past research shows that the physical and social characteristics of a given community/urban space play a crucial role in people's perception of security (Adams 2012), adversely impacting the quality of life of citizens and their physical and mental health (Rader and Haynes 2012). Consequently, socially disorganized urban spaces tend to significantly impact the level of integration, communication and the social bond of residents, which are essential to promote and build feelings of trust and security in the population (Swatt et al. 2013). Accordingly, the existence of disorder in the surrounding community has often been associated with the fear of crime (FOC) (Scarborough et al. 2010). Despite the absence of conceptual consensus (cf. Valente and Pertegas 2018), FOC has been conceptualized in this study as an emotional response, likely to promote fear or anxiety about crime or other indicators associated with crime (Ferraro 1995). Considered as a social problem (Lewis and Salem 2017), FOC has been associated with several negative individual and societal outcomes (Solymos et al. 2020). It has been argued that, faced with the threat of victimization, people tend to restrict their daily activities by avoiding specific places or

interacting with certain people, increasing social isolation and, consequently, negatively impacting people's quality of life (Rader and Haynes 2012). Examining the factors that may contribute to mitigate FOC and feelings of insecurity is crucial to better design community policing approaches and promote greater community resilience against perceived and real crime (Reid et al. 2020). Therefore, this study aims to understand how specific individual, socio/environmental and incivility variables could contribute to predict crime against people and property, either frequent or feared.

### *1.1. Predictors of Fear of Crime: Individual and Social/Environmental Variables*

To explain the perception of crime that has either already frequent or is feared to occur, two categories of variables have been studied: individual characteristics and contextual features. Individual predictors are often associated with the notion of vulnerability, whether physical or social. In turn, physical vulnerability has been assessed through demographic variables (e.g., age, sex, race and self-defence capacity) (Jackson 2009; Killias 2000). Sex has been consistently identified as a strong individual predictor of FOC, with women fearing crime at much higher level than men (Ferraro 1995; Russo et al. 2013; Scarborough et al. 2010; Skogan 1995; Valera-Pertegas and Guàrdia-Olmos 2017). These sex differences seem to persist in different types of crime (Ferraro 1995; Schafer et al. 2006), which is surprising considering that women are less likely than men to be victims of crime, with the exception of sexual and family crimes (Rand 2008). Several explanatory hypotheses have been advanced for this perception of greater female insecurity with particular emphasis on gender-differentiated socialization, with socializing women thought to be more fearful than men (Rader 2008), as well as the documented disparity in the underlying sources of fear evidenced by men and women, with the latter showing a generalized fear of sexual aggression (Schafer et al. 2006). Age has also been frequently identified as an individual characteristic associated with greater physical vulnerability and higher levels of FOC, with the elderly population experiencing greater physical vulnerability to victimization (Kullberg et al. 2009; Scarborough et al. 2010). Another group of individual predictors involves victimization experiences, both direct and indirect, with people who are regularly exposed to crime demonstrating more FOC (Dowler 2003).

Although previous FOC research has focused on analysing individual variables or victimization experiences, the need to analyse FOC as a context-specific experience (Solymos et al. 2020) to an ecological level or under a multifactorial approach has been defended in several studies (Chadee et al. 2017; Valera-Pertegas and Guàrdia-Olmos 2017; Russo et al. 2013). In line with this, social/environmental variables (e.g., crime rate, police performance, neighbourhood disorder, collective efficacy, economic disadvantage, low spending on education and low social protection) constitute another category of predictors of the FOC (Wu and Wareham 2017), that should be analysed and that were addressed in this study.

Neighbourhood social and infrastructural problems have been consistently associated with FOC (Chadee et al. 2017). Undeniably, the performance of the police force as a formal institution of social control and crime prevention also plays a crucial role in the population's perception of risk, being generally associated with a reduced risk of victimization (Skogan 2009). However, this connection between satisfaction with police and FOC is complex, with some research suggesting that there is no association between both and a distinction between physical and social disorder has been established when neighbourhood disorder is considered (Scarborough et al. 2010). Physical disorder is associated with the deterioration of spaces, and social disorder with the occurrence of anti-social behaviour, both of which are strong predictors of a high level of FOC among residents of urban spaces (Skogan 1995). Physical-environmental variables have consistently been associated with FOC, more particularly with signs of neglect such as littering and graffiti (Lorenc et al. 2012). The broken windows and integration/social cohesion theories emerge as two important theoretical explanations assisting in understanding the relationship between physical and social disorder and FOC (Bolger and Bolger 2019). According to the broken windows theory, the existence of physical and social disorder suggests the presence of weaknesses

of social control in the community, in terms of police performance and crime prevention measures, generating FOC and reducing the probability of citizens becoming involved in actively contributing to solve FOC-related social problems. Additionally, social disorder is perceived by offenders as reduced direct police control or indirect community control, promoting the opportunity for crime (Scarborough et al. 2010). According to the social integration theory, informal social control, such as neighborhood communities, promotes trust in the environment and the community, thereby reducing FOC levels. This implies that there is a certain degree of connection and commitment of residents to each other and to the surrounding community, through mutual trust and social ties in terms of cooperating with neighbours, as well as to recognize common values and goals and solve problems (Xu et al. 2005).

Incivilities also emerge as an important factor used to explain FOC (Bolger and Bolger 2019). Incivilities are described in Lewis and Salem's (2017) study as involving a variety of circumstances that indicate to neighbourhood residents that something is not right in their communities. Incivilities may oscillate according to the interests, values and resources that characterize the various populations of the neighbourhood. Thus, incivilities may involve unacceptable behaviour, physical deterioration in homes, commercial areas or public spaces, the intrusion of other population groups into the area, or an increase in deviant and criminal behaviour, such as drug use and vandalism.

Considering that FOC has been equally associated with crime occurring in specific urban areas, it is essential to determine the crime identified by the population as frequently occurring or not and whether the area is perceived as involving a high concentration of local crime (Azevedo et al. 2021a). According to the Portuguese Annual Internal Security Report (Sistema de Segurança Interna [Internal Security System] (SSI) 2020), violent and serious crime in Portugal is more prevalent in the main cities, Lisbon, Porto and Setúbal, with particular emphasis on the crimes of robbery on public roads, resistance and employee coercion, representing about 72% of violent crime. However, it is also important to note that the relationship between FOC and community crime rates is complex and non-consensual, and some studies consider that real crime rates have little or no relationship with the FOC (Scarborough et al. 2010). Other studies (Hicks and Brown 2013; Reid et al. 2020) reported that areas with low perceived crime rates are associated with greater collective effectiveness, greater social cohesion and higher levels of interaction with neighbours.

### 1.2. Current Study

The present study focuses on the Historic Centre of Porto (HCP) (Azevedo et al. 2021b) and is based on the need to understand the FOC as a contextually specific problem, based in a place and captured by people's emotional and behavioural responses, which can lead to the resolution of social problems (Solymos et al. 2020). It is important to note that the HCP refers to an urban area included in the second largest city in the North of Portugal, Porto. After being classified by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1996 as a World Heritage Site as the Best European Destination, HCP is no longer just a residential area, being frequented by workers, students and many tourists all day long. There is also a higher percentage of the population aged above 65, and a significant part of them live alone, although the middle-aged population predominates. It should also be highlighted that despite the most recent efforts towards urban redevelopment, particularly related to tourism and tertiary activities, HCP still includes a considerable percentage of deteriorated buildings, constituting a potential vulnerability and risk factor for insecurity and criminality, alongside with the aforementioned sociodemographic indicators.

Thus, the present study intends to make an important contribution to the understanding of FOC, analysing several indicators of insecurity perception (Porter et al. 2012; Valente and Pertegas 2018), and focusing on two main categories of crime, i.e., crime against people and crime against property, which emerge as the most prevalent crimes (Sistema de Segurança Interna [Internal Security System] (SSI) 2020). The main objective of this study

is to analyse how individual and social/environmental variables, and incivilities, predict crime against people and property, either already taking place or feared to take place. Incivilities were separated from other social/environmental variables, considering them as a specific subgroup, integrating an important disorder model used to predict FOC (Bolger and Bolger 2019). Specifically, it was intended to: (i) describe the prevalence of the assessed crimes against people and property, identified as the most frequent and feared crimes, as well as the accompanying social/environmental variables and incivilities; (ii) identify the sociodemographic variables (i.e., age and sex) associated with the most feared and the most frequent crime against people and property; (iii) identify the social/environmental variables associated with crime against people and property which occur most and are more feared; (iv) identify the incivilities associated with crime against people and property; (v) predict the most frequent and the most feared crimes against people and property, based on individual and social/environmental variables, and incivilities. Some hypotheses are considered:

**H1.** *Age and sex emerge as individual variables that are associated with the most feared and frequent crimes against people and property.*

**H2.** *Age and sex emerge as the main predictors of the most feared and frequent crimes against people and property.*

**H3.** *Social/environmental variables emerge as important predictors of the most feared and frequent crimes against people and property.*

**H4.** *Incivilities emerge as important predictors of the most feared and frequent crimes against people and property.*

## 2. Materials and Methods

### 2.1. Participants

Five hundred and fifty-four residents, workers and students, over 18 years old and fluent Portuguese speakers, were recruited in the present research. The sample's age varied from 18 to 96 years ( $M = 43.82$ ;  $SD = 18.38$ ); 41.3% were male and over 90% were Portuguese. Participants were uniformly distributed regarding education. While 64% were actively working at the moment, 17.5% were students and 4.5% were unemployed. 51.7% of the participants reported been living and working/studying in the HCP for seven or more years.

### 2.2. Instruments

Including not only closed but also open-ended questions, the Diagnosis of Local Security (DLS) Questionnaire (Sani and Nunes 2013) comprises 61 items regarding different variables, organized into five different sections: (i) sociodemographic information (e.g., sex, age), (ii) perception of (in)security, (iii) victimisation, (iv) social control and (v) community participation. In addition to sociodemographic information, only the variables corresponding to the perception of (in)security were used in this study. Through that specific section of the questionnaire, from a list of fourteen crimes (i.e., fraud, theft, robbery, residential theft, theft in commercial establishment, sexual aggression, physical aggression, domestic violence: against/among minors, domestic violence: against/between spouses, domestic violence: against/among the elderly, damage to public spaces/equipment, road crimes, drug trafficking, arms trafficking), participants were asked to identify the most frequent crimes ("From the following list, choose the crimes that most often occur in HCP—choose one or more options") and crimes they most feared ("From the following list, choose the crimes you fear the most in HCP—choose one or more options"). Moreover, from a list of twelve social/environmental variables (i.e., drug use/alcohol consumption, poverty/unemployment, family problems, conflicts and juvenile delinquency, poor street lighting, bad areas/streets, absence of green/leisure spaces, reduced movement at night, deficient policing, inability of law enforcement officers to act, diminutive severity of offenders), participants were

expected to select the ones they could identify in the HCP (*“From the following list, choose the conditions that, in HCP, most seem to favour the occurrence of crime—choose one or more options”*). Finally, from a list of seven common incivilities (i.e., urinating on the public road, producing noise on the public road, leaving pet animals’ faeces on the public road, scattering garbage down the street, violate traffic rules, parking chaotically, illegal beggars), participants should choose the ones they believed to promote crime, by checking them of a list (*“From the following list, choose the incivilities that most often occur at HCP—choose one or more options”*).

This instrument was both developed and validated among the Portuguese population (Sani and Nunes 2013) and is widely used in the Portuguese context (Nunes et al. 2018; Sani and Nunes 2016).

### 2.3. Procedure

After being approved by the University Ethics Committee in charge of this study and the HCP Parish Council, participants were recruited in several public and private spaces (e.g., streets, shops, offices, schools or parks), and then invited to contribute to a research study assessing the perception of (in)security and crime at HCP. After presenting the study’s conditions, written informed consent was obtained from the participants and trained professionals conducted the face-to-face enquiries. Individuals who participated were not given any financial incentive, as the participation was voluntary.

### 2.4. Data Analysis

Data were analysed through the IBM Statistical Package for Social Sciences software (IBM SPSS for Windows, version 27.0, IBM Corp, Armonk, KY, USA). According to the main aims of this study, univariate descriptive and inferential statistics were carried out. The present sample was characterized regarding the variables assessed through absolute frequencies, a basic but valuable statistical analysis. Then, the crimes identified as the most frequent and most feared, as well as the environmental/social variables and the incivilities, were coded into dichotomic variables (i.e., present or absent). In order to understand the possible associations between sociodemographic variables, social/environmental variables or incivilities, and the type of frequent or feared crime (i.e., crime against property or against people), Spearman coefficient correlations were calculated. This test is a nonparametric measure of the strength and direction of the association that exists between two variables measured on at least an ordinal scale. Only those variables considered significant on the Spearman’s tests were further analysed using binary logistic regressions, a common statistical regression technique to predict the group belonging of dichotomous dependent variables, with only two categorical outcomes, which is the case in the present study, with one or more independent variables, either continuous or categorical. Accordingly, binary logistic regression analyses were performed in order to understand if the presence of sociodemographic factors, environmental/social variables or incivilities (as independent variables) would predict a crime’s membership to the crime against people group or the crime against property group (as dependent variable). The Wald test, a way to find out if explanatory variables in a model are important, was used. As is known, it is in fact a multivariate generalization allowing to test a set of parameters simultaneously to see if they are sufficiently unimportant (Wald 1943).

## 3. Results

### 3.1. Descriptive Statistics

The crimes identified in this study were divided in two different categories: (i) crime against people (sexual offense, domestic violence against minors, domestic violence against a spouse, domestic violence against the elderly), and (ii) crime against property (fraud, theft, robbery, assault on residence, assault on a commercial establishment, damage to public equipment). Additionally, it should be emphasized that this division was carried out for both frequent and feared crimes. Among the present sample of 207 frequent crimes,



72% represented crime against property and 28% crime against people. Moreover, among the 497 feared crimes, 61% related to crime against people and 39% crime against property.

Table 1 includes the results of the descriptive statistics, namely the number of cases and percentages, regarding the assessed social/environmental variables and incivilities of the studied territory. Among the different social/environmental variables, drug use/alcohol consumption was the most prevalent, followed by poverty/unemployment. Concerning incivilities, urinating and leaving pet animals' faeces on the public road were the most common.

**Table 1.** Frequencies and percentages of the social/environmental variables and incivilities assessed.

	Variables	Absent		Present	
		N	%	N	%
Social/environmental variables	Absence of green/leisure spaces	455	82.1	99	17.9
	Bad areas/streets	402	72.6	152	27.4
	Poor street lighting	373	67.3	181	32.7
	Presence of strange people	367	66.2	187	33.8
	Diminutive severity to offenders	340	61.4	214	38.6
	Reduced movement at night	331	59.7	223	40.3
	Inability of law enforcement officers to act	322	58.1	232	41.9
	Family problems	312	56.3	242	43.7
	Conflicts and juvenile delinquency	294	53.1	260	46.9
	Deficient policing	242	43.7	312	56.3
	Poverty/unemployment	153	27.6	401	72.4
	Drug use/alcohol consumption	115	20.8	439	79.2
Incivilities	Illegal beggars	265	47.8	289	52.2
	Violation of traffic rules	250	45.1	304	54.9
	Producing noise on the public road	213	38.4	341	61.6
	Parking chaotically	177	31.9	377	68.1
	Leaving pet animals' faeces on the public road	175	31.6	379	68.4
	Urinating on the public road	155	28.0	399	72.0

### 3.2. Associations between the Most Frequent or Feared Crimes and Individual and Social/Environmental Variables

In order to characterize possible associations between the crimes described as the most frequent or feared and the presence of individual and social/environmental variables, Spearman correlations were calculated concerning sociodemographic characteristics, the different social/environmental variables and incivilities assessed in this study. Sex was found to be only significantly correlated to the feared crimes ( $r = 0.150$ ,  $p < 0.001$ ), while age was significantly correlated to both frequent ( $r = -0.217$ ,  $p = 0.002$ ) and feared crimes ( $r = -0.279$ ,  $p < 0.001$ ). Moreover, as can be observed on Table 2, frequent crimes only presented a significant positive correlation concerning diminutive severity to offenders. Additionally, feared crimes were significantly and positively correlated with poverty/unemployment and family problems.

Table 3 presents the Spearman correlations between frequent and feared crimes, and incivilities, present in the studied territory. Frequent crimes were significantly and positively correlated with producing noise on the public road and violating traffic rules, while feared crimes were significantly positively correlated to urinating on the public road, violating traffic rules and illegal beggars.

**Table 2.** Spearman correlations between frequent and feared crimes, and the social/environmental variables of the studied territory.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Frequent Crimes	1	0.233 **	−0.011	0.051	0.079	−0.006	0.025	0.033	0.061	0.129	0.130	0.127	0.084	0.196 **
2. Feared Crimes	-	1	0.053	0.143 **	0.164 **	0.032	0.012	0.040	−0.022	0.068	0.059	0.004	0.046	0.041
3. Drug use/alcohol consumption	-	-	1	0.321 **	0.244 **	0.232 **	0.110 **	0.105 *	0.076	0.158 **	0.139 **	0.204 **	0.191 **	0.196 **
4. Unemployment	-	-	-	1	0.397 **	0.176 **	0.086 *	0.145 **	0.098 *	0.202 **	0.178 **	0.172 **	0.230 **	0.200 **
5. Family problems	-	-	-	-	1	0.236 **	0.108 *	0.111 **	0.112 **	0.118 **	0.123 **	0.115 **	0.189 **	0.146 **
6. Juvenile delinquency	-	-	-	-	-	1	0.147 **	0.151 **	0.109 *	0.140 **	0.194 **	0.208 **	0.279 **	0.324 **
7. Poor street lighting	-	-	-	-	-	-	1	0.477 **	0.318 **	0.227 **	0.260 **	0.295 **	0.275 **	0.238 **
8. Bad areas	-	-	-	-	-	-	-	1	0.241 **	0.254 **	0.287 **	0.272 **	0.224 **	0.218 **
9. Absence of green/leisure spaces	-	-	-	-	-	-	-	-	1	0.205 **	0.117 **	0.183 **	0.168 **	0.220 **
10. Presence of strange people	-	-	-	-	-	-	-	-	-	1	0.231 **	0.228 **	0.176 **	0.202 **
11. Reduced movement at night	-	-	-	-	-	-	-	-	-	-	1	0.233 **	0.288 **	0.279 **
12. Deficient policing	-	-	-	-	-	-	-	-	-	-	-	1	0.504 **	0.392 **
13. Inability of law enforcement officers to act	-	-	-	-	-	-	-	-	-	-	-	-	1	0.521 **
14. Less severity to offenders	-	-	-	-	-	-	-	-	-	-	-	-	-	1

\*  $p < 0.050$ ; \*\*  $p < 0.001$ .**Table 3.** Spearman correlations between frequent and feared crimes, and incivilities in the territory.

Variables	1	2	3	4	5	6	7	8
1. Frequent crimes	1	0.233 **	0.145 *	0.161 *	0.064	0.144 *	−0.001	0.132
2. Feared crimes	-	1	0.124 **	0.075	−0.037	0.097 *	0.078	0.096 *
3. Urinating on the public road	-	-	1	0.210 **	0.182 **	0.162 **	0.185 **	0.208 **
4. Producing noise on the public road	-	-	-	1	0.181 **	0.223 **	0.238 **	0.075
5. Leaving pet animals' faeces on the public road	-	-	-	-	1	0.180 **	0.151 **	0.072
6. Violation of traffic rules	-	-	-	-	-	1	0.444 **	0.134 **
7. Parking chaotically	-	-	-	-	-	-	1	0.165 **
8. Illegal beggars	-	-	-	-	-	-	-	1

\*  $p < 0.050$ ; \*\*  $p < 0.001$ .

### 3.3. Predictors of Either Frequent or Feared Crimes

In order to verify if the individual or contextual characteristics would predict either frequent or feared crimes, logistic binary regressions were performed and Wald test was used to assess the least significant parameters. Nevertheless, it should be stated that only characteristics that presented a significant correlation with the frequent or feared crimes were included in the model. Therefore, a total of six models were tested (see Table 4).

**Table 4.** Logistic Binary Regression Models examining criminal occurrences (against people vs against property).

Dependent Variable	Predictive Variable	Model	$\beta$	SE	Wald	Odds Ratio	95% CI	p
Frequent crime	Sociodemographic variables	$\chi^2 (1) = 9.155$ , $p = 0.002$	−0.033	0.010	8.607	0.971	[0.952, 0.990]	0.003
	Age							
	Social/environmental Variables	$\chi^2 (1) = 7.838$ , $p = 0.005$	−0.882	0.316	7.778	0.414	[0.223, 0.769]	0.005
	Diminutive severity to offenders							
	Incivilities							
Feared crime	Urinating in the public road	$\chi^2 (3) = 10.757$ , $p = 0.013$	−0.601	0.366	2.703	0.548	[0.268, 0.123]	0.100
	Producing noise on the public road		−0.604	0.344	3.089	0.547	[0.279, 1.072]	0.079
	Violating traffic rules		−0.431	0.327	1.737	0.650	[0.342, 1.234]	0.187
	Sociodemographic variables	$\chi^2 (2) = 49.140$ , $p < 0.001$	−0.606	0.196	9.543	0.545	[0.371, 0.801]	0.002
	Sex		−0.033	0.005	35.430	0.968	[0.958, 0.978]	<0.001
Feared crime	Age							
	Social/Environmental Variables	$\chi^2 (2) = 17.066$ , $p < 0.001$	−0.415	0.221	3.517	0.660	[0.428, 1.019]	0.660
	Poverty/unemployment		−0.542	0.205	6.958	0.582	[0.389, 0.870]	0.582
	Family Problems							
	Incivilities	$\chi^2 (3) = 12.874$ , $p = 0.005$	−0.459	0.213	4.632	0.632	[0.416, 0.960]	0.031
Feared crime	Urinating in the public road		−0.315	0.189	2.775	0.730	[0.504, 1.057]	0.096
	Violating traffic rules		−0.272	0.191	2.011	0.762	[0.524, 1.109]	0.156
	Illegal beggars							

Note:  $\beta$ —logistic regression coefficient; SE—standard error; CI—confidence interval;  $p$ — $p$ -value;  $\chi^2$ —chi-squared statistic. Crimes against property = 1; Crimes against people = 2.

From the six logistic regression models, several results emerged. Regarding the crimes identified as most frequent, the first model correctly classified 72% of the cases. Thus, younger participants identified crimes against people as more prevalent. The second model also correctly classified 72% of the cases. Participants who perceived lower severity regarding offenders were the ones identifying crimes against people as more prevalent. Lastly, the third model it correctly classified 72% of the cases. Although none of the incivilities made a significant individual contribution, producing noise on the public road was indeed marginally significant.

When considering the crimes identified as most feared, the fourth model classified 64.3% of the cases correctly. Younger and female participants identified crimes against people as the most feared more frequently. Concerning the fifth model, 60.4% of the cases were correctly classified. Participants who identified the presence of poverty/unemployment and family problems are the ones who feared crimes against people the most. Finally, the sixth model classified 62.8% of the cases correctly.

## 4. Discussion

The present study was carried out in the HCP aimed to explore crime that has already frequent or is feared to occur in terms of people's experiences in their immediate surrounding environments. This study can be faced as an opportunity to develop a more comprehensive understanding of FOC and policies to reduce it, as well as to contribute to knowledge on the formulation of evidence-based policies and urban planning for safer places (Solymos et al. 2020).

Different social/environmental variables and incivilities were assessed in this study. Drug and alcohol consumption, followed by poverty/unemployment, were the most reported social/environmental variables. In the case of incivilities, urinating and leaving pet animals' faeces on the public road were the most frequently identified in the context of this study. Nevertheless, it is important to observe that the remaining social/environmental



variables and incivilities have considerable prevalence. Accordingly, these variables must necessarily be considered when designing social policies and conceiving preventive and intervention programs in the context of safer places, as they have a significant impact on crime occurrences and on the citizens' perception of (in)security, i.e., FOC.

In line with what was testified in the Annual Report on Internal Security ([Sistema de Segurança Interna \[Internal Security System\] \(SSI\) 2020](#)) participants reported crime against property as being more frequent. However, crime against people emerged as the most feared, which can be explained by people perceiving that the potential impact of a crime against a person could cause a significant serious impact on the victim's life ([Jackson 2009](#)).

Concerning sociodemographic characteristics, while age was significantly associated with frequent and feared crimes, sex was only significantly correlated with feared crimes, which only partially confirmed the first hypothesis, H1, i.e., age and sex associated with the most feared and frequent crimes against people and property. Additionally, age was a significant predictor of both frequent and feared crimes, with younger participants identifying crime against people more frequently. Therefore, the second hypothesis, H2, i.e., age and sex as the main predictors of the most feared and frequent crimes against people and property, was, once again, partially confirmed. This result is coherent with [Jackson's \(2009\)](#) study, who reported that younger participants were more concerned with the possibility of a criminal occurrence against people. The same author argues that the FOC is a product of the perception of oneself as a potential target and the feeling of a lack of control over whether the crime will occur or not. In contrast, sex was only a significant predictor of feared crimes, with females fearing crime against people more frequently. This result seems to be in line with previous research, as sex differences ([Ferraro 1995](#); [Schafer et al. 2006](#)) and greater insecurity in females have been documented before ([Rader 2008](#)).

The third hypothesis, H3, stated that social/environmental variables are predictors of the most feared and frequent crimes against people and property. However, in this study, only the perception of lower severity towards offenders was found to be a significant predictor of crime identified as frequent. Thus, this hypothesis was only partially confirmed. In fact, participants with this perception were the ones who identified crimes against people as the most frequent ones. In the case of the most feared crimes, participants who perceived the presence of poverty/unemployment and family problems were the ones who feared crime against people the most. This is a similar result to the one found by [Wu and Wareham \(2017\)](#), concerning FOC in general. The broken windows theory may contribute to explain these findings, as it states that social disorders may translate to the existence of weaknesses in social control, promoting FOC and citizens' detachment concerning the social problems present in their community ([Xu et al. 2005](#)).

Lastly, the fourth hypothesis, H4, stated that incivilities are predictors of the most feared and frequent crimes against people and property. Indeed, some of the incivilities assessed had an important individual contribution to FOC as well, but only in the case of the most feared crimes. Therefore, this fourth hypothesis was partially confirmed. The participants who described the presence of people urinating or producing noise in the public road, as well as the presence of illegal beggars, feared crimes against people the most. This result may be in line with the social integration theory ([Xu et al. 2005](#)), since, by definition, incivilities involve unacceptable behaviours ([Lewis and Salem 2017](#)) and, consequently, do not translate to any degree of connection and commitment among the residents. Furthermore, it could be argued that, on the one hand, these incivilities may translate into a lack of formal and informal social control. On the other hand, the absence of effective social control is an important factor in the maintenance of these incivilities in the territory.

The present study presents some limitations that should be acknowledged. The fact that the study area is limited to a specific geographic area, i.e., the HCP, may hinder the generalization of the results. Similarly, the fact that the tourists' perception was not considered may result in the loss of important information regarding criminal occurrence, as the HCP is an extremely touristic area over the entire year. In fact, the present study

did not consider racial diversity either, which is an important variable to understand FOC, and that should be considered in future studies. Data analysis was carried out based on two criminal categories, i.e., crime against people and crime against property, making it possible for some patterns and specificities of crimes to remain hidden and unknown. It should be also pointed out that, in both the case of social/environmental variables and of incivilities, only their presence or absence were assessed. In addition, the statistical strategy only included bivariate correlations, followed by logistic regression and using the Wald test. This test procedure can be misleading in small samples when used empirically to search for unimportant parameters. In this sense, it is important that future studies include other analyses that allow for a greater range of knowledge about the predictors of FOC. Although the risk of victimization might be a variable playing an important role on FOC, it was not analysed.

Despite the above-mentioned limitations, the authors believe that this study represents an important contribution to the field of criminology in particular. In fact, and to the authors' knowledge, this is the first study that, in contrast to considering FOC in general, differentiates FOC in relation to crime against people and crime against property, thus providing greater enlightenment regarding both crime typologies. Future studies might consider the study of each specific type of crime separately, as the influence of social/environmental variables and incivilities may change accordingly. Additionally, the fact that the perceptions of residents, workers and students of HCP have been considered can transform this study into a great asset for the local authorities when designing new measures and policies to combat crime and promote a feeling of security between citizens.

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