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ORIGINAL ARTICLE

Lost in paradise? The perception of security among immigrant communities in Switzerland and its correlates

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Abstract

Research addressing the perception of security of immigrants in Switzerland dates back to the 2000s. Using data from a victimisation survey conducted in Lugano, Switzerland (N = 7885), this study investigates the security perception of immigrant communities and its correlates. In contrast to previous findings, the analyses suggest that a higher percentage of immigrants perceive the city as highly safe than natives, this being more accentuated among extra-European immigrants and recently arrived migrants. At the neighbourhood level, results are less clear-cut. Collective efficacy, police proximity and the perceived ability of self-defence are the main predictors of high-security perceptions while having been a victim of violent crimes decreases the likelihood of perceiving both city and one's neighbourhood as safe. Despite positive results, the manuscript discusses the need for increasing the reliability and validity of the traditional measures used to question the fear of crime and the need for targeted interventions fostering cultural integration.

Keywords Fear of crime · Migration · Victimisation · Collective efficacy · Community policing

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Introduction

The perception of security: concept, measurement and implications

The perception of security refers to personal judgments about crime and the security levels of a specific environment, and it can be interpreted as the probability that a person perceived the "habitat" as secure (Curiel and Bishop 2016), given a wide range of individual, socio-economic and cultural factors influencing it. The concept of security perception is often exchanged with the concept of fear of crime even if the latter reflects more the emotional reaction resulting from threatening stimulus (Ferraro and Grange 1987; Castro-Toledo et al 2020).[1] From an empirical standpoint, the distinction between the two concepts is not that sharp. The perception of security has been measured either via physiological indicators of fear (Castro-Toledo et al. 2017), by assessing the emotional response to frequent and intense fearful episodes (Gray et al. 2008), or by asking people whether they feel safe in specific situations and in which intensity (Farrall et al. 1997). For instance, the International Victim Crime Survey (van Dijk et al. 2007) measured this concept via (1) respondents' assessment of the likelihood of suffering a burglary and (2) their feeling of security when walking alone in his neighbourhood at night.

The perception of security is not distributed equally among the population. According to several scholars, the fear of crime is more related to the feeling of vulnerability rather than to actual crime rates or victimisation experiences (Castro-Toledo 2019; Killias et al. 2019). In that sense, women and elders show higher levels of fear than men and youngsters. Research has also examined the perception of security of the foreign-born and even though empirical evidence is quite limited, prior studies show mixed results, highly depending on the reference country or the immigrant community analysed. On one hand, immigrants are more likely than natives to express feelings of insecurity, according to most studies conducted in the UK and the USA (Lee and Ulmer 2000; Brown and Benedict 2004; Yun et al. 2010; Andreescu 2013; Wu et al. 2017). Conversely, other pieces of research conducted in continental Europe found almost no differences between the autochthonous and the immigrant population in terms of perceived security; for instance, in Switzerland during the 1990s (Killias 1997; 2009; Pfeiffer et al. 1999; Eisner et al. 2000), in the Netherlands during the 1980s (Junger and van Hecke 1988, as cited in Killias et al. 2019; Junger and Zeilstra 1989, as cited in Killias et al., 2019), and, more recently, in France (Andreescu 2015; Jalain et al. 2020).

While the perception of security of the immigrant communities varies according to different individual and environmental factors (e.g. prior criminal victimisation; degradation of residential areas; socio-economic expectations; cultural assimilation with respect to the host country), the lack of comparable results across different populations and contexts deserves further investigation. The current study extends and updates previous research by studying the perception of security among immigrant

[1] Even though we are aware of the distinction between the two concepts, this article uses the terms fear of crime and perception of (in)security interchangeably.

communities in Switzerland, the factors influencing it, and by researching whether the immigrants share similar perceptions and fears than their native-born counterparts. Given the fact that notions such as immigrants, migrants or foreigners define separate concepts with different meanings and connotations (Blinder 2015), this paper applies the UN definition of immigrant (1998) as a person "who moves to a country other than that of his or her usual residence [….] so that the country of destination effectively becomes his or her new country of usual residence". The following section contextualises the present study.

The perception of security in Switzerland

Switzerland is a federal European country composed roughly of 8.6 million inhabitants (OFS 2020), widely considered as one of the most economically and financially stable nations in the world, as well as one of the most competitive countries in terms of innovation, job market and education (International Monetary Fund 2020). Besides its economic prosperity, Switzerland is also perceived as a safe country, according to comparative crime statistics (Aebi et al. 2021). Because of the high life quality in the country, Switzerland is highly attractive for foreigners and receives a substantial volume of migrants who seek to settle in the country. In this regard, by the year 2019, roughly 25% of Switzerland's population was composed of immigrants (OFS 2020). This rate is much higher than the European average, placing Switzerland among the top five European countries in terms of percentage of immigrants over the total residential population (Eurostat 2020).

Because of the high demand, the country regulates the immigration by prioritising immigrants from member countries of the European Union (EU) whose conditions to establish in Switzerland are less strict than those of extra-European inhabitants. More specifically, the EU citizens have the right to stay in the country—without employment—for three months and, if they wish to stay longer, they have to request a resident permit which is attributed depending on one's possession of a working contract as well as sufficient income to support oneself (Secrétariat d'État aux migrations n.d.). Citizens from non-EU countries face stricter conditions to visit Switzerland and their resident permit request is not accepted unless their staying in the country benefits Swiss economic interests. Accordingly, Switzerland only concedes the resident permit to highly qualified extra-European immigrants if the employer proves that the extra-European worker represents an added value because no Swiss or EU staff could be recruited on the Swiss labour market to satisfy the job requirements (Secrétariat d'État aux migrations n.d.; RS 142.20 Loi fédérale sur les étrangers et l'intégration).

The composition of the immigrant population in the country can present a wide range of adaptation patterns, which might impact differently on the perception and fears of both natives and immigrants. In Switzerland, the majority of migrants comes from Western European nations and are not considered by natives to be particularly different in terms of cultural, religious or linguistic background (Diehl et al. 2018). Even migrants arriving from non-European countries are almost exclusively skilled, in part due to the aforementioned federal regulation, and are only narrowly

conceived as a cultural threat (Spies and Schmidt-Catran 2016). Similarly, the immigrant communities (especially those from extra-European countries) generally adapt to an environment that provides financial opportunities and is safer than their home country. As a result, one could infer that immigrants are likely to report a low perception of insecurity, at least comparable to natives. As announced before, previous studies indicated that immigrants did not feel more unsafe than the Swiss (Killias 1997, 2009; Pfeiffer et al. 1999; Eisner et al. 2000). Despite these premises, Swiss public institutions do not ignore the importance of raising awareness on this issue, paying particular attention to minorities. For instance, the Swiss inter-cantonal service for crime prevention (Prévention.CH n.d.) recommends "minorities afraid of being the victim of violence, threats or name calling […] to check with an advocacy group, association, […] or to call the police by dialling 117 when feeling seriously threatened".

Bearing this in mind, this article aims to shed new light on this topic by investigating the perception of security among immigrant communities in Switzerland, also in comparison to native population. More than one decade has passed since previous research on this topic in Switzerland, and unfortunately, recent victimisation surveys do not delve into the security perception of migrants nor compare nationals and immigrants concerning this aspect.[2] Moreover, given the increasing rate of immigrants resident in the country, it seems valuable to retest the hypothesis of equilibrium between immigrants and Swiss citizens in terms of security perceptions. To this scope, this study relies on data from a victimisation survey conducted in the Swiss city of Lugano in 2019, which allows addressing the main research questions of this study at two different scales: the municipality and the neighbourhood. On these bases, this article poses the following research questions:

1. At a municipality level, how do immigrants perceive the level of security compared to the Swiss, and how does the perception of security change between different immigrant communities?
2. At a municipality level, which factors influence the perception of security of immigrant communities and natives?
3. Do immigrants' and Swiss' perceptions of security at the municipality level differ from perceptions of security at the neighbourhood level?

Answering these research questions provides new updating results about immigrants' perceptions in Switzerland, and on the determinants of such perceptions, and could also be of interest to decision makers and practitioners by signalling which are the populations in more need of intervention.

[2] In 2015, Biberstein et al. (2016) conducted the *Swiss Survey on Experiences and Opinions on Crime*, but they did not explore in depth the differences in fear of crime between foreigners and Swiss. This was also the case in 2019, when Margagliotti et al. (2019) surveyed the population of the Swiss canton of Neuchâtel on their fear of crime, but did not distinguish their analyses by ethnic communities.

Data and method

Data source and operationalisation of the variables

Data come from a self-reported victimisation survey conducted in the Swiss city of Lugano in 2019 (Caneppele et al. 2019). The latter interviewed a representative stratified random sample of citizens (N = 7885) about past victimisation experiences, perceptions of security, protection measures, and neighbourhoods and institutional ties. Most of the questions about the perception of security were addressed at two different scales—the city level and the neighbourhood level—allowing for multiscale analysis of citizens' perceptions of security: the dependent variable of this study. In the following lines, we detail both dependent and independent variables of our research (see also Table 1).

Dependent variable (DV)

The perception of security at the city level was measured using a single ordinal-scale item asking the respondents: "How do you evaluate the level of security in Lugano?". Answer choices ranged from 1 "very low" to 5 "very high". Given the right-skewed distribution of the variable [median: 4; mean: 4.10]—indicating as expected that most of the residents considered Lugano as a safe city –, we created a binary variable to conduct the analysis, taking the figure of 1 for answers equal to

Table 1 Descriptive statistics of the variables included in the analyses. Source: Authors' own elaboration

Variable	Obs	Mean	SD	Min	Max
Perception of security	7802	4.10	0.73	1.00	5.00
Safe in Lugano	7802	0.29	0.45	0.00	1.00
Safe in neighbourhood	7577	0.31	0.46	0.00	1.00
Nationality	7726	1.42	0.60	1.00	3.00
Swiss	7726	0.63	0.48	0.00	1.00
European	7726	0.31	0.46	0.00	1.00
Extra-European	7726	0.06	0.23	0.00	1.00
Balkans	7726	0.04	0.20	0.00	1.00
Latin American	7726	0.01	0.12	0.00	1.00
Eastern-European	7726	0.01	0.12	0.00	1.00
Time of residency in CH	7522	37.30	23.07	0.00	88.00
Collective efficacy	6640	0.63	0.21	0.00	1.00
Victim property crime	7747	0.18	0.38	0.00	1.00
Victim violent crime	7694	0.17	0.37	0.00	1.00
Self-defence	7885	0.09	0.29	0.00	1.00
Police proximity	6107	0.42	0.20	0.00	1.00
Age	7690	52.97	17.70	15.00	92.00
Sex (female)	7865	0.52	0.50	0.00	1.00
University	7701	0.30	0.46	0.00	1.00
Unemployed	7778	0.04	0.20	0.00	1.00

5, and the figure of 0 for answers different from 5. At the neighbourhood level, the survey asked the respondents: "how often do you feel safe when you walk alone in the neighbourhood where you live at night?". Answer choices ranged from 1 "never" to 5 "always". For this specific question, participants provided answers for both the week (Monday to Thursday) and the weekend (Friday to Sunday). The distribution of the two variables does not differ [median: 4; mean 3.9]. Again, we generated a binary variable by aggregating the answers concerning the whole week. The dummy assigns a 1 to respondents who always feel safe at walking alone in the neighbourhood at night. Otherwise, a value of 0 is assigned. This operation allows remaining consistent with the analysis at the city level.

Independent variables (IVs)

The dependent variables are regressed on a set of predictors comprising data on citizenship, individual characteristics and economic conditions, time of residency, victimisation experiences, self-defence perception and composite indicators of collective efficacy and police proximity.

The citizenship variable is central to addressing the research questions of this study. Participants were asked to indicate their nationality. The variable was first recoded into three different categories that mirror the entry conditions of migrants as described in the early section of this paper: Swiss, European migrants (from EU member states) and extra-European migrants. The latter category represents only 6% of the entire population, while European immigrants account for 36% of overall respondents. Then, given the size of immigrants coming from specific areas, we decided to categorise three more groups: the Balkans, the Latin Americans and the Eastern European citizens from former Soviet nations.[3] For immigrants, we also add a continuous variable measuring the years of living in the country, assuming that perceptions of security might change depending on the time spent since arrival in Switzerland.

Demographic variables, backgrounds and socio-economic conditions of the respondents are operationalised in the following manner: age of respondents (continuous), sex (a dummy variable coded 1 for women and 0 for men), educational background (a dummy variable coded 1 for residents holding a university degree, and 0 for lower educated respondents) and working condition (a dummy variable coded 1 for unemployed, and 0 for employed).

Victimisation experiences are divided into two categories: property crime and violent crime. The first category includes victims of burglary, vehicle theft, theft of objects from vehicles and pickpocketing. The second category includes victims of verbal and physical aggression (at home and on the street) and victims of sexual

[3] The three populations are of interest for the following reasons: Long-term Balkan immigrants have direct and indirect experiences of the conflicts that occurred during the 1990s. The Latin American community presents different characteristics in terms of linguistic background than the Swiss population. Citizens from former Soviet countries grew in less wealthy and safe conditions.

harassment. Overall, 18% of the sample suffered property crime, and 17% endured violent crimes.

Besides victimisation, we asked the respondents about their self-confidence in self-defence. A single ordinal-scale item measured through the question "When you are away from home, do you think you can physically defend yourself from a person of your physique?" was posed to the participants. Answer choices ranged from 1 "very incapable of" to 5 "very capable of" [median 3; mean: 2.6]. We decided to generate a dummy variable coded 1 for respondents who feel highly able to defend themselves and 0 for those who feel less capable.

The collective efficacy indicator is built, using a principal component analysis (PCA), following the method of Sampson et al. (1997), thus combining the social cohesion indicator (being on good terms with neighbours; helping each other; trusting each other; having the same opinions on neighbourhood issues) and the informal social control indicator (to count on one or more of my neighbours to intervene if in my neighbourhood there are kids drawing graffiti on a public building, if kids behave rudely towards an adult, if a fight breaks out in the street and if a road construction site is badly signposted or dangerous). We have followed the same strategy to develop a proxy of police proximity which combines four items concerning patrol frequency (by car, by motorbike, by bike or on foot) over the last two months. The two composite indicators (collective efficacy and police proximity) are aggregated using as weights the proportion explained in the PCA by each component.[4] Then, the scores have been standardised using the min–max scaling (higher values = 1).

Empirical strategy

Given the ordinal nature of the original dependent variable, we planned to use ordinal logistic regression to model (1) the between-groups differences in terms of perception of security and (2) the impact of a set of predictors on the security perceptions of immigrants and native residents. However, the parallel lines/proportional odds assumption did not hold (i.e. the relationship between each pair of outcome groups is not equal), posing model reliability issues.

Therefore, we opted for logistic regression specifications transforming the ordinal-scale variables of security perception into a series of dummy variables at the city and neighbourhood level as indicated in the previous section. The analysis is first conducted at the city level and then replicated at the neighbourhood level, and it is presented accordingly. First, we test the difference in perception of security between immigrants and Swiss people, and between groups of immigrants. Second, since the perceptions of immigrants vary with respect to the perception of Swiss people, we test which factors influence the perception of security of the immigrants in Lugano. Third, we compare the different groups among each other to understand whether

[4] PCA implies three common rules of thumb as discussed in Jolliffe (2002). First, only components with an eigenvalue > 1 should be retained. Second, each component should explain at least 10% of the overall variance. Third, the cumulative variance of the retained component should be higher than 60%. Both indicators meet the requirements.

specific features emerge as strong predictors of the (in)security of a specific subgroup. At the neighbourhood level, we have conducted additional tests to control for geographical variances in terms of crimes reported to the police and the proportional distribution of migrants.[5]

Empirical results

Perceptions of security in Lugano

Results at the city level show that immigrants are 1.98 times more likely to perceive the town as safe than Swiss people and that residents coming from countries outside the European Union feel even safer (Table 2). Other populations, especially Balkans, Latin Americans and Eastern Europeans, also express a higher feeling of security than the Swiss. Individual characteristics do no change drastically the estimates, which remain significant at 99.9% for every population analysed. The results indicate a departure from previous studies, which revealed very similar attitudes between Swiss and foreign-born regarding the fear of crime and the perception of security (Killias 1997, 2009; Pfeiffer et al. 1999; Eisner et al., 2000). Nevertheless, the results are far from being unexpected. Switzerland is considered a low-risk country, and most immigrants arrived from more risky contexts.

Several factors are associated with the perception of the security of immigrants (Table 3). The background and socio-economic characteristics of respondents (i.e. age, sex, education and the working condition) become progressively less statistically significant after the addition of alternative predictors. This result is remarkable as it indicates that individuals of different ages, studies and conditions perceive the city as a safe place. Furthermore, being able to self-defence increases the likelihood of feeling safe, while being a victim of violent or property crime decreases the perception of security. In line with expectations, the effect of violent crimes on the perception of insecurity is higher than the effects of property crime since the victim is confronted face to face with the offender.

The indicator of collective efficacy is also positively related to the perception of security and increases considerably the likelihood of perceiving the city as very safe. In that sense, the participants who perceive the collective efficacy as high in their neighbourhood are 8 times more likely to perceive the city as very safe compared to those who perceive the collective efficacy as low. The result is consistent with previous research conducted in the US and Europe (Sampson et al. 1997; Brunton-Smith et al. 2014; Hardyns et al. 2018).

The time spent in the county since the arrival is negatively correlated with the perceptions of security, instead. It is conceivable that the more time spent in a place, the greater the convergence of opinions and lifestyles with those of the locals. Once fully adapted to the context, the immigrant perceives a greater detachment from the

[5] The results of these additional tests are not presented in this paper since they do not differ from the results presented in the following sections. Tables with results are available upon request.

Table 2 Differences in the perception of security between groups in Lugano

Safe in Lugano	OR (SE)	OR (SE)	OR (SE)
Immigrants	1.98*** (0.10)		
Nationality: Swiss		Baseline	
European		1.85*** (0.10)	
Extra-European		2.84*** (0.30)	
Nationality: Swiss			Baseline
Balkans			2.29*** (0.27)
Latin American			2.19*** (0.55)
Eastern-European			3.43*** (0.65)
Others			1.87*** (0.10)
Control variables (age, sex, university, unemployment)	Yes	Yes	Yes
Obs	7535	7535	7535
Pseudo-R2 Nagelkerke	0.06	0.06	0.06
LR chi2	290.21	305.78	302.09
Prob > chi2	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00
Hosmer–Lemeshow test	0.38	0.51	0.39

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p < 0.05$; **$p < 0.01$; and ***$p < 0.001$

place of origin, seeing with different eyes (and emerging fears) the context where they live.

Finally, the indicator of police proximity is positively related to the perception of security, increasing 4 times more the likelihood to perceive the city as a very safe. The presence of police officers in the neighbourhood is seen as an element of protection and institutional proximity. This finding corroborates previous results, especially when considering contexts with low crime rates (Gill et al. 2014).

When comparing results across different groups (Table 4), some differences emerge especially concerning the socio-economic variables. Indeed, among the Swiss residents, the elderly and women perceive Lugano's security worse than younger generations and men. Females also feel more unsafe than male among European migrants. The same applies to unemployed European migrants. Moreover,

Table 3 Explaining the perception of security of immigrants in Lugano

Reference population	Immigrants	Immigrants	Immigrants	Immigrants	Immigrants	Immigrants
Safe in Lugano	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Age	0.99** (0.002)	0.99** (0.002)	0.99** (0.002)	0.99*** (0.003)	1.00 (0.003)	1.00 (0.004)
Sex (female)	0.70*** (0.06)	0.74*** (0.06)	0.76** (0.06)	0.78** (0.07)	0.80* (0.07)	0.83 (0.08)
University	1.26** (0.11)	1.29** (0.11)	1.28** (0.11)	1.32** (0.12)	1.04 (0.10)	1.14 (0.12)
Unemployed	1.46* (0.26)	1.40 (0.25)	1.36 (0.25)	1.41 (0.28)	1.42 (0.28)	1.36 (0.28)
Self-defence		1.56*** (0.20)	1.65*** (0.21)	1.59** (0.23)	1.59** (0.23)	1.53** (0.24)
Victim property crime			0.70** (0.08)	0.70** (0.09)	0.74* (0.10)	0.73* (0.10)
Victim violent crime			0.52*** (0.07)	0.55*** (0.07)	0.57*** (0.08)	0.61** (0.09)
Collective efficacy				10.34*** (2.43)	9.07*** (2.14)	8.11*** (2.07)
Time of residency in CH					0.97*** (0.004)	0.97*** (0.004)
Police proximity						4.01*** (0.99)
Obs	2772	2772	2720	2387	2377	2096
Pseudo-R2 Nagelkerke	0.02	0.03	0.05	0.11	0.14	0.15
LR chi2	49.45	61.69	100.66	206.53	249.09	250.04
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00	0.00	0.00	0.00
Hosmer–Lemeshow test	0.14	0.15	0.19	0.28	0.33	0.46

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p<0.05$;**$p<0.01$; and***$p<0.001$

among the Swiss population, holding a university degree has a significant effect on the security perception while it loses strengths and significance for the other groups considered. Regarding the complementary set of variables, findings do not diverge from the results presented in Table 3 and are consistent across groups, collective efficacy and police proximity being the most predictive factors.[6]

[6] The lack of significant correlation levels for extra-European migrants could be imputed to the specificity of the sample with a low sample size. Nonetheless, the sign is almost never reverted. For the same reason, the determinants of the subgroups mentioned above (Balkans, Latin Americans and Eastern Europeans) are also not displayed due to the low sample size.

Table 4 Explaining the perception of security among different groups in Lugano

Reference population	All Sample	Swiss	Immigrants	European	Extra-European
Safe in Lugano	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Age	0.99*** (0.002)	0.99** (0.002)	1.00 (0.004)	1.00 (0.004)	1.00 (0.01)
Sex (female)	0.73*** (0.05)	0.72*** (0.06)	0.83 (0.08)	0.77* (0.09)	1.02 (0.26)
University	1.56*** (0.10)	1.46*** (0.13)	1.14 (0.12)	1.24 (0.14)	0.95 (0.28)
Unemployed	1.29 (0.19)	1.16 (0.25)	1.36 (0.28)	1.62* (0.39)	0.67 (0.30)
Self-defence	1.66*** (0.17)	1.77*** (0.25)	1.53** (0.24)	1.52* (0.26)	1.77 (0.67)
Victim property crime	0.83* (0.07)	1.02			
(0.11)	0.73* (0.10)	0.75 (0.11)	0.62 (0.20)		
Victim violent crime	0.62*** (0.06)	0.70** (0.08)	0.61** (0.09)	0.66** (0.10)	0.40** (0.14)
Collective efficacy	8.67*** (1.45)	8.03*** (1.82)	8.11*** (2.07)	9.45*** (2.71)	3.77* (2.07)
Time of residency in CH			0.97*** (0.004)	0.97*** (0.004)	0.98 (0.01)
Police proximity	4.54*** (0.72)	3.12*** (0.67)	4.01*** (0.99)	3.43*** (0.94)	6.57** (0.13)
Obs	5615	3505	2096	1772	324
Pseudo-R2 Nagelkerke	0.12	0.09	0.15	0.17	0.11
LR chi2	505.71	208.24	250.04	233.64	28.23
Prob > chi2	0.00	0.00	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00	0.00	0.00
Hosmer–Lemeshow test	0.29	0.25	0.46	0.43	0.33

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p < 0.05$; **$p < 0.01$; and ***$p < 0.001$

Perceptions of neighbourhood security

We replicate the analysis at the neighbourhood level, and the results are less robust and more in line with the hypothesis of "equilibrium" suggested in previous studies (Table 5). When controlling for the socio-economic characteristics of respondents, immigrants are 1.11 more likely to feel safer than Swiss, but the relationship is statistically significant at 95%, and the goodness of fit of the model does not meet the standards. The alternative tests on different populations confirm that the difference between immigrant communities and Swiss at

Table 5 Differences in the perception of security between groups at the neighbourhood level

Safe in the neighbourhood	OR (SE)	OR (SE)	OR (SE)
Immigrants	1.11* (0.06)		
Nationality: Swiss		Baseline	
European		1.11 (0.06)	
Extra-European		1.17 (0.14)	
Nationality: Swiss			Baseline
Balkans			1.08 (0.14)
Latin American			1.45 (0.31)
Eastern-European			1.51 (0.33)
Others			1.10 (0.06)
Control variables (age, sex, university, unemployment)	Yes	Yes	Yes
Obs	7342	7342	7342
Pseudo-R2 Nagelkerke	0.12	0.12	0.12
LR chi2	648.68	648.86	653.13
Prob > chi2	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00
Hosmer–Lemeshow test	0.01	0.01	0.01

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p < 0.05$; **$p < 0.01$; and ***$p < 0.001$

the neighbourhood level is not statistically relevant. It seems plausible that this discrepancy is partly due to how the perception of security is measured, as we suggest in the discussion section.

Delving into factors that explain the security perceptions of immigrants in the neighbourhood, the results are almost in line with the findings at the city level. Nonetheless, two individual characteristics preserve the sign and the significance even after the addition of alternative predictors: being female is associated with higher insecurity while holding a university degree is positively correlated with security perceptions (Table 6). Regarding the other variables, findings are consistent with the results shown in Table 3, with the sole exception of the effect of being a victim of a property crime that loses significance. Previous victimisation, confidence in self-defence, the indicator of collective efficacy and the time spent

Table 6 Explaining the perception of security of immigrants at the neighbourhood level

Reference population	Immigrants	Immigrants	Immigrants	Immigrants	Immigrants	Immigrants
Safe in neighbourhood	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Age	0.99** (0.003)	0.99* (0.003)	0.99* (0.003)	0.99* (0.003)	1.00 (0.004)	1.00 (0.004)
Sex (female)	0.33*** (0.03)	0.37* (0.03)	0.37*** (0.03)	0.35*** (0.03)	0.36*** (0.04)	0.37*** (0.04)
University	1.37*** (0.12)	1.45*** (0.13)	1.45*** (0.31)	1.43*** (0.14)	1.19 (0.12)	1.29* (0.14)
Unemployed	1.36					
(0.26)	1.25 (0.24)	1.22 (0.24)	1.18 (0.24)	1.19 (0.25)	1.31 (0.28)	
Self-defence		2.56*** (0.34)	2.60*** (0.35)	2.58*** (0.38)	2.60*** (0.38)	2.58*** (0.40)
Victim property crime			0.82 (0.10)	0.85 (0.11)	0.89 (0.12)	0.90 (0.13)
Victim violent crime			0.53*** (0.07)	0.56*** (0.08)	0.57*** (0.08)	0.57*** (0.09)
Collective efficacy				6.97*** (1.72)	6.22*** (1.54)	5.10*** (1.35)
Time of residency in CH					0.98*** (0.004)	0.98*** (0.004)
Police proximity						1.79* (0.46)
Obs	2691	2691	2646	2354	2344	2083
Pseudo-R2 Nagelkerke	0.10	0.12	0.14	0.17	0.19	0.19
LR chi2	203.67	254.32	272.82	316.37	341.26	305.46
Prob > chi2	0.00	0.00	0.00	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00	0.00	0.00	0.00
Hosmer–Lemeshow test	0.04	0.00	0.01	0.27	0.37	0.39

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p < 0.05$; **$p < 0.01$; and ***$p < 0.001$

in the country since the arrival are the factors that impact the most the perception of security of immigrants.

By comparing Swiss and immigrants, two noticeable differences arise (Table 7). Age confirms to be a strong predictor of the insecurity of Swiss residents, as in Table 4. More surprisingly, police presence in the neighbourhood does not emerge as a reassuring element for the Swiss population. While an immigrant considers himself 1.8 times safer when he frequently sees the police patrolling the area, the Swiss might classify this activity as a sign that something bad happened which had required police intervention. Or, Swiss residents may associate the frequency of community patrolling with a greater need for monitoring the presence of illegal

Table 7 Explaining the perception of security among different groups at the neighbourhood level

Reference population	All Sample	Swiss	Immigrants	European	Extra-European
Safe in neighbourhood	OR (SE)	OR (SE)	OR (SE)	OR (SE)	OR (SE)
Age	0.99*** (0.002)	0.99** (0.002)	1.00 (0.004)	1.00 (0.004)	1.00 (0.01)
Sex (female)	0.30*** (0.02)	0.27*** (0.02)	0.37*** (0.04)	0.36*** (0.04)	0.36*** (0.10)
University	1.36*** (0.09)	1.26** (0.11)	1.29* (0.14)	1.33* (0.16)	0.99 (0.33)
Unemployed	1.37* (0.20)	1.50* (0.30)	1.31 (0.28)	1.68* (0.42)	0.56 (0.27)
Self-defence	2.49*** (0.26)	2.46*** (0.34)	2.58*** (0.40)	3.14*** (0.55)	1.12 (0.43)
Victim property crime	0.84* (0.07)	0.84 (0.09)	0.90 (0.13)	0.93 (0.14)	0.73 (0.26)
Victim violent crime	0.55*** (0.05)	0.56*** (0.06)	0.57*** (0.09)	0.59** (0.09)	0.73 (0.26)
Collective efficacy	6.89*** (1.14)	7.61*** (1.64)	5.10*** (1.35)	8.13*** (2.43)	0.69 (0.02)
Time of residency in CH			0.98*** (0.004)	0.98*** (0.004)	2.97 (0.02)
Police proximity	0.97 (0.15)	0.64* (0.13)	1.79* (0.46)	1.57 (0.43)	2.84 (2.01)
Obs	5588	3491	2083	1762	321
Pseudo-R2 Nagelkerke	0.19	0.20	0.19	0.22	0.13
LR chi2	809.19	523.88	305.46	299.06	31.90
Prob > chi2	0.00	0.00	0.00	0.00	0.00
Omnibus tests	0.00	0.00	0.00	0.00	0.00
Hosmer–Lemeshow test	0.38	0.40	0.39	0.32	0.36

Odd ratio with standard errors in parentheses. The omnibus test is a likelihood-ratio chi-square test benchmarking the current model versus the null model. The Hosmer–Lemeshow test is a statistical test for goodness of fit

*$p < 0.05$; **$p < 0.01$; and ***$p < 0.001$

activities in the area. Whatever the reason, it is a result that deserves further investigation as it might require rethinking policing activities in the neighbourhood to ensure improved intergroup perceptions of security.

Discussion and conclusion

This article addressed the perception of the security of foreign-born compared to non-migrants in a Swiss city, and its correlates. Although the political discourse and public policies have assumed that migrants are a vulnerable social group likely to experience fears (Prévention.CH n.d.), empirical evidence does not support this

claim. Based on the analyses conducted, we conclude that immigrants feel safer than the Swiss in Lugano. Additionally, to be an extra-European or a recently arrived immigrant increases this likelihood even more. The same is true for the different populations considered in this study. Nonetheless, results at the neighbourhood level are less straightforward because no differences between migrants and Swiss were found and thereby findings at the neighbourhood level are somehow consistent with the results found in early works by Eisner et al. (2000), Killias (1997; 2009) and Pfeiffer et al. (1999), whose studies found almost no difference between Swiss and immigrants in regards to the perceptions of security in the neighbourhood at night.

The indicator of collective efficacy is the most predictive -for Swiss and migrants- for perceiving both the city and the neighbourhood as very safe. The result is consistent with previous research conducted in the USA and Europe (Sampson et al. 1997; Brunton-Smith et al. 2014; Hardyns et al. 2018). The indicator of police proximity is highly correlated to the perception of security of migrants and Swiss at the municipality level. At the neighbourhood level, the presence of police officers is seen as an element of protection and institutional proximity by the immigrant communities. This finding corroborates previous results, especially when considering contexts with low crime rates (Gill et al. 2014). However, the Swiss respondents perceived the police presence in the neighbourhood as not reassuring. We hypothesise that the Swiss may associate police patrolling with ongoing crime or disorder. Whatever the reason, this finding deserves further investigation and may require rethinking community policing to increase perceptions of safety in a more general sense. Additionally, in line with expectations, the effect of violent victimisation on fear is higher than the effects of property crime since the victim approaches the offender personally. About immigrants, the more time spent in the host country, the lower the perception of security. It is conceivable that the more time spent in a place, the greater the convergence of opinions and lifestyles with those of the locals. In our view, once fully adapted to the context, immigrants may associate the environment with new fears and concerns.

Regarding our study, our sample is city-representative and therefore our findings generalisable to all Lugano. However, even though we considered many other variables besides ethnicity, and controlled many confounders such as age, sex, occupation and education, our models, in the best case, explained 22% of the variance of the dependent variables (Table 7). This is something common in social sciences. However, the results were robust independently of the tests or controls performed. Hence, in our opinion, the results are valid and generalisable.

How to explain differences in perceptions of security at the municipal and neighbourhood level? We hypothesise that the labelling of the questions can partially explain differences in the perception of security between the city and the neighbourhood. The victimisation survey asked the respondents: (1) "*How do you evaluate the level of security in Lugano*?" and (2) "*How often do you feel safe when you walk alone in the neighbourhood where you live at night?*". Both questions are subjective, but they address the security feeling in different forms (see Fig. 1). The first question concerns a rational and more abstract issue. In this sense, the cognitive outputs of the respondents are related to the prefrontal cortex of the brain. The second question is related to an emotional response regarding a potentially threatening situation,

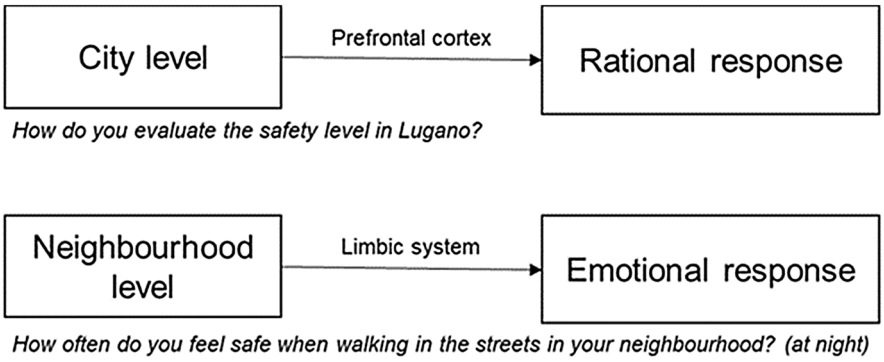

Fig. 1 Mental path followed by the respondents according to the labelling of the question. Source: Authors' own elaboration

and, therefore, it is also more connected to the limbic system (LeDoux and Pine, 2016). Indeed, it is reasonable that if we had asked identical questions at the city and neighbourhood level, the answers would have mirrored each other.

On these premises, the fact that immigrants assess the city as safer than natives is far from unexpected: they compare the security level of their home cities with Lugano and thereby concluding that Lugano is a very safe place. This point of comparison is not accessible for the Swiss, who have lived in a relatively stable environment and show a more moderate view of the city. In the same line, the long-term immigrant residents get used to the situation in Switzerland and share the same opinions and concerns of the Swiss citizens. Therefore, their security perceptions of the city are similar to the evaluation of the Swiss citizens. Instead, when asked about their security feeling in their neighbourhood, immigrants and Swiss respond in similar manners. We suspect that this coincidence is related to the fact that this question activates both a rational and an emotional and intuitive circuit. In that sense, it is plausible that regarding this question, respondents might combine their own experiences, their perception of the likelihood of being victimised with their emotional memory when walking into their area at night. Therefore, even though at a local level Swiss and immigrants have similar perceptions, the mental representations of immigrants about security and crime in Switzerland could differ because of their different life experiences in at least two countries.

Clearly, our data do not fully support this statement, and further research is needed. Although complex and expensive, criminology should embrace more biology and neuroscience perspectives, which would increase the reliability and validity of the concept we seek to measure. Examples of these studies applied to fear of crime are the analysis of physiological variables (e.g. the heart rate, skin perspiration) when walking alone at night (see Castro-Toledo et al. 2017). Although not applied thus far to this domain, it would be equally interesting to monitor the brain activity (see, for instance, Moffitt 2018) when answering a questionnaire or even when walking through a dark street to seize which parts of the brain (and therefore which circuits) activate in different situations. Research would benefit by increasing

the reliability of security perceptions indicators and the identification of precise confounders. For instance, by doing so, we would be able to seize if one group presents a higher tendency to deny feeling fear because of social desirability or cultural norms as it has been shown for instance in the case of men when being asked about their fear (Sutton and Farrall 2005).

Given the fact that immigrants do not perceive the city as more insecure than the Swiss, we recommend that public policies should not focus on increasing immigrants' security perceptions per se. There is a need for target interventions that encourage cultural integration, ties between the neighbours and thereby the collective efficacy. Indeed, collective efficacy is strongly related to the security perceptions in both the neighbourhood and the city. Strengthening the social inclusion of immigrants into Swiss society is of interest for the public authorities to increase the feeling of security, social cohesion and the informal control of neighbourhoods. We assume that an increase in collective efficacy could potentially lead to a decrease in community policing activities (more informal control and less formal presence of police in the territory), given the fact that Swiss residents perceived the frequency of patrolling as a source of emotional stress that increased insecurity.

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Declarations

Conflict of interest The authors declare that there is no conflict of interest.

References

Aebi, M.F., S. Caneppele, S. Harrendorf, Y. Hashimoto, J.-M. Jehle, T.S. Khan, O. Kühn, C. Lewis, L. Molnar, R. Þórisdóttir, and P. Smit. 2021. *European sourcebook of crime and criminal justice statistics 2021*, vol. 1. Lausanne: University of Lausanne.

Andreescu, V. 2013. Fear of violent victimisation among the Foreign-born. *Journal of Identity and Migration Studies* 7 (1): 69–94.

Andreescu, V. 2015. Concerns about violent crime in France: Does immigrant status make a difference in public perceptions of safety? *Journal of Identity and Migration Studies* 9 (1): 49–68.

Biberstein, L., M. Killias, S. Walser, S. Iadanza, and A. Pfammatter. 2016. *Sondage au sujet des expériences et opinions sur la criminalité en Suisse. Analyses dans le cadre du sondage national de sécurité 2015*. Lenzburg: Killias Research and Consulting.

Blinder, S. 2015. Imagined immigration: The impact of different meanings of 'immigrants' in public opinion and policy debates in Britain. *Political Studies* 63 (1): 80–100.

Brown, B., and W.R. Benedict. 2004. Bullets, blades, and being afraid in hispanic high schools: An exploratory study of the presence of weapons and fear of weapon-associated victimisation among high school students in a border town. *Crime and Delinquency* 50 (3): 372–394.

Brunton-Smith, I., J. Jackson, and A. Sutherland. 2014. Bridging structure and perception: On the neighbourhood ecology of beliefs and worries about violent crime. *British Journal of Criminology* 54: 503–526.

Caneppele, S., R. Milani, C. Burkhardt, and M.F. Aebi. 2019. *La sicurezza a Lugano nel 2019: 1. Qualità della vita, percezione della sicurezza e rapporto dei cittadini con la Polizia Città di Lugano*, vol. 1. Lausanne: Université de Lausanne.

Castro-Toledo, F.J. 2019. *Sociedad tecnológica y miedo al crimen*. Madrid: Edisofer.

Castro-Toledo, F.J., T. Gretenkort, M. Esteve, F. Miró-Llinares, V. Ceccato, and K. Mahesh. 2020. "Fear in 280 characters": A new approach for evaluation of fear over time in cyberspace. In *Crime and fear in public places. Towards safe, inclusive and sustainable cities*, ed. V. Ceccato and M.K. Nalla. London: Routledge.

Castro-Toledo, F.J., J.O. Perea-García, R. Bautista-Ortuño, and P. Mitkidis. 2017. Influence of environmental variables on fear of crime: Comparing self-report data with physiological measures in an experimental design. *Journal of Experimental Criminology* 13 (4): 537–545.

Curiel, R.P., and S.R. Bishop. 2016. A metric of the difference between perception of security and victimisation rates. *Crime Science* 5 (1): 1–15.

Diehl, C., T. Hinz, and K. Auspurg. 2018. Who is afraid of skilled migrants from Europe?: Exploring support for immigration control in Switzerland. *Schweizerische Zeitschrift Für Soziologie* 44 (1): 59–88.

Eisner, M., P. Manzoni, and D. Ribeaud. 2000. *Gewalterfahrungen von Jugendlichen: Opfererfahrungen und selbstberichtete Gewalt bei Schülerinnen und Schülern im Kanton Zürich*. Aarau: Sauerländer.

Eurostat. 2020. Migration and migrant population statistics—Statistics Explained. Eurostat.

Farrall, S., J. Bannister, J. Ditton, and E. Gilchrist. 1997. Questioning the measurement of the 'Fear of Crime': Findings from a major methodological Study. *The British Journal of Criminology* 37 (4): 658–679.

Ferraro, K.F., and R.L. Grange. 1987. The measurement of fear of crime. *Sociological Inquiry* 57 (1): 70–97.

Gill, C., D. Weisburd, C.W. Telep, Z. Vitter, and T. Bennett. 2014. Community-oriented policing to reduce crime, disorder and fear and increase satisfaction and legitimacy among citizens: A systematic review. *Journal of Experimental Criminology* 10: 399–428.

Gray, E., J. Jackson, and S. Farrall. 2008. Reassessing the fear of crime. *European Journal of Criminology* 5 (3): 363–380.

Hardyns, W., L.J. Pauwels, and B. Heylen. 2018. Within-individual change in social support, perceived collective efficacy, perceived disorder and fear of crime: Results from a two-wave panel study. *The British Journal of Criminology* 58 (5): 1254–1270.

International Monetary Fund. (2020). World Economic Outlook (October 2020)—GDP, current prices. International Monetary Fund.

Jalain, C.I., V. Andreescu, and G.E. Higgins. 2020. Fear Of crime in France: A partial test of Ferraro's risk interpretation model. *Crime Prevention and Community Safety* 22 (4): 351–363.

Jolliffe, I. 2002. *Principal Component Analysis*. New York: Springer-Verlag.

Junger, M., and T. van Hecke. 1988. *Schadevergoeding binnen het strafrecht: Daders en slachtoffers van misdrijven*. The Hague: WODC.

Junger, M., and M. Zeilstra. 1989. *Deviant gedrag en slachtofferschap onder jongens uit ethnische minderheden I*. The Hague: WODC.

Killias, M. 1997. Immigrants, crime, and criminal justice in Switzerland. *Crime and Justice* 21: 375–405.

Killias, M. 2009. Paradise lost? New trends in crime and migration in Switzerland. In *Immigration, Crime and Justice*, ed. W.F. Mcdonald. Bingley: Emerald Group Publishing Limited.
Killias, M., M.F. Aebi, and A. Kuhn. 2019. *Précis de criminologie*, 3rd ed. Bern: Stämpfli Verlag AG.
LeDoux, J.E., and D.S. Pine. 2016. Using neuroscience to help understand fear and anxiety: A two-system framework. *American Journal of Psychiatry* 17 (11): 1083–1093.
Lee, M.S., and J.T. Ulmer. 2000. Fear of crime among korean americans in Chicago communities. *Criminology* 38 (4): 1173–1206.
Margagliotti, G., B. Borisova, A. Ajil, and Q. Rossy. 2019. *Mon canton, ma sécurité: sentiment de sécurité physique et numérique et opinions sur la police neuchâteloise*. Lausanne: Ecole des Sciences Criminelles.
Moffitt, T.E. 2018. Male antisocial behaviour in adolescence and beyond. *Nature Human Behaviour* 2 (3): 177–186.
OFS. (2020). Part de la population résidante permanente étrangère—1900–2019. Office fédéral de la statistique.
Pfeiffer, C., I. Delzer, D. Enzmann, and P. Wetzels. 1999. Ausgrenzung, Gewalt und Kriminalität im Leben junger Menschen – Kinder und Jugendliche als Opfer und Täter. In *Kinder und Jugendliche als Opfer und Täter*, ed. Deutsche Vereinigung für Jugendgerichte und Jugendgerichtshilfen, pp. 58–184 Bern: Forum Verlag.
Prévention CH (n.d.) Peur du crime : vous sentez-vous en sécurité ? Prévention Suisse de la Criminalité.
RS 142.20 Loi fédérale sur les étrangers et l'intégration Etat le 1 avril 2020. Retrieved from https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/2007/758/20200401/fr/pdf-a/fedlex-data-admin-ch-eli-cc-2007-758-20200401-fr-pdf-a.pdf
Sampson, R.J., S.W. Raudenbush, and F. Earls. 1997. Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science* 277 (5328): 918–924.
Secrétariat d'État aux migrations. (n.d.). Libre circulation des personnes.
Secrétariat d'État aux migrations. (n.d.). Ressortissants des Etats non-membres de l'UE/AELE.
Spies, D., and A. Schmidt-Catran. 2016. Migration, migrant integration and support for social spending: The case of Switzerland. *Journal of European Social Policy* 26 (1): 32–47.
Sutton, R.M., and S. Farrall. 2005. Gender, socially desirable responding and the fear of crime: Are women really more anxious about crime? *British Journal of Criminology* 45 (2): 212–224.
UN. 1998. Recommendations on statistics of international migration. revision 1. United Nations.
van Dijk, J.J., J. van Kesteren, and P. Smit. 2007. *Criminal victimisation in international perspective: Key findings from the 2004–2005 ICVS and EU ICS*. The Hague: Boom Juridische Uitgevers, Wetenschappelijk Onderzoek-en Documentatiecentrum.
Wu, Y., I.Y. Sun, and L. Cao. 2017. Immigrant perceptions of the police: Theoretical explanations. *International Journal of Police Science and Management* 19 (3): 171–186.
Yun, I., G. Kercher, and S. Swindell. 2010. Fear of crime among Chinese immigrants. *Journal of Ethnicity in Criminal Justice* 8 (2): 71–90.