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Impacts and coping mechanisms of farmers as victims by animal rights activism in Sweden

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ABSTRACT

In this study, we investigate whether fear of animal rights activism has an impact on farmers and, more specifically, critically assess farmers' agency by showing ways they cope with this fear. The analysis is based on answers from a survey of 3,815 animal farmers in Sweden in 2020. Chi-square analyses, logistic regression models, and Geographical Information Systems (GIS) underlie the methodology of the study. Fear of animal rights activism is perceived by farmers as having a negative impact on their children's wellbeing, their economic situation, and their quality of life and having led to reduced trust in strangers. While a fifth of respondents declare they protect themselves against criminal acts, we discuss possible reasons farmers prefer not to take action against potential threats.

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Activism; safety perception; precautionary measures; logistic regression

1. Introduction

"It has taken the joy out of what I do."
"(We) avoid talking about our business operation. The children may feel ashamed."
"I have actively chosen not to offer tours or post pictures on social networks."
"We have had multiple burglaries in a residence. That's why we put up a road barrier, which led to no unwanted cars entering. But that also makes it hard to run a farm shop . . . "

Hostility against animal farmers have been associated with an increasing awareness of the environmental impact of consuming animal products together with growing veganism (Lund & Olsson, 2006). Research shows that conflicts between animal production and animal rights activism have been witnessed in a number of countries (Carson et al., 2012; Katz & McPherson, 2020; Monaghan, 2013). While only a small minority of animal rights advocates, numerous accounts link animal rights groups to various hostile acts against farmers in Sweden, including but not limited to vandalism, sabotage, threats, and harassment (Verdicchio, 2019; Ceccato et al., 2022; Leander, 2018; Sveriges Radio, 2014; The Swedish Police, 2020). Fear of crime negatively impacts people's mental health and mobility (Grinshteyn, 2013; Yates & Ceccato, 2020), but may also be a necessary drive for precautions to be taken to protect oneself from victimisation (Garofalo, 1981). However, the international literature lacks an understanding of the impact that acts attributed to animal rights activism potentially has on farmers (their families, employees, economic situation), either when

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they become crime victims or by the fear of being victims of hostile acts because they are animal producers. In this study, we assess the impact of fear on farmers and their coping mechanisms as victims of crime.

Using logistic regression, we first assess whether and how fear of victimisation by animal rights activism impacts animal farmers, after controlling for respondents' characteristics, including previous victimisation as well as property type, location and size and crime prevention practices. Taking a qualitative approach, we then characterise those who are protecting themselves (their property, family, employees) and discuss possible reasons some farmers prefer not to take action.

In this study, in order to avoid simplification, we use the term "animal rights activism" to refer to all hostile actions committed against animal farmers, where the offenders are not often known (by the victims, police and/or criminal justice) but are attributed to individuals and/or organisations associated with animal rights activism. Note also that we use the term "animal farmers" interchangeably to refer to "farmers working with animal production," who in this study comprise of agricultural companies devoted to production of dairy products, cattle and beef, pig, sheep and goat, egg, broiler, poultry, rabbit, fur/mink and fish. We have excluded farmers solely devoted to activities related to equines as horses are largely kept for sport or as a hobby rather than for producing meat in Sweden.

This article builds on the previous research by Ceccato et al. (2021) on farmers' fear of animal rights activism and farmers victimisation (Ceccato et al., 2022) but further investigates the impact of fear further down the chain of events, after a farmer has been victimised and/or declared being afraid. In particular, the study reveals how fear of crime can have indirect and long reaching effects on farmers as individuals and entrepreneurs, after controlling for previous victimisation and other factors. Moreover, this article extends the theoretical framework of fear of crime by encompassing existing research on the consequences of fear, and how victims behave, respond to and cope with fear (e.g., theory on fear appeals, behavioural responses to fear by Jackson and Gouseti (2012)) which were not analysed in the previous study by Ceccato et al. (2021). The topic is relevant as farm crime, the fear associated with it, as well as both their effects on individuals are a highly understudied research area in the international criminology literature.

The article is structured as follows. Section 2 establishes the theoretical framework for the study. Then, sections 3 and 4 introduce Sweden as the study area, the data and methodology, followed by results in section 5, which are discussed in section 6. Finally, as a conclusion of the article, we discuss and suggest possible measures to address poor safety perceptions among farmers who are animal producers in rural Sweden.

2. Theoretical background and research questions

2.1 The human–animal relationship, farmers, and the animal rights movement

The human–animal relationship has throughout time been under scrutiny, with humans often wielding an oppressive and dominating power over animals (Philo & Wilbert, 2000). Animal domestication has drawn on multiple moralities, from care and control to mastery and paternalism. Based on perceived qualities of the animal (intelligent, good company, edible, useful or considered vermin, etc.), domestication has involved various expressions, from sheer affection towards individual animals to extensive exploitation of whole species (Anderson, 1997). These different animal statuses certainly determine their vulnerability as victims (such as in the case of animal mistreatment or neglect) or target of protection (by e.g., animal rights activists). The growth of acknowledgement of animal rights have led to some animals benefiting from improved living conditions through organic farming (Yarwood & Evans, 2000). In Sweden, the welfare of farm animals has

been cited as being of high standard and regulations are stricter than most countries (Jordbruksverket, 2021), but has also experienced criticism on occasion (e.g., the so-called Pig Scandal where activists through trespassing spread footage of alleged animal abuse and neglect on pig farms, see, Efendić, 2009).

The introduction of factory farming has led to large scale exploitation of animals, and animal rights proponents argue that these factories cause animals great suffering; cramped living spaces, lack of sunlight access, and procedures such as dehorning or amputation without anaesthetics (Fiber-Ostrow & Lovell, 2016). Originating from the mainstream animal welfare movement in the 1970s, a very broad and loosely organised collection of groups and individuals feel the necessity of employing more direct and non-legal tactics to ensure animal rights and environmental protection, often referred to under the umbrella term *Radical Environmentalist and Animal Rights* (REAR) movement (Hirsch-Hoefler & Mudde, 2014). A common strategy among radical animal rights activists is to secretly photograph the conditions of farm animals and later spread them through news and social media to affect public opinion on meat consumption. While legislation has been enacted against this in many countries, the strategy has been effective in some instances for decreasing meat consumption (Lovell, 2022). Other approaches target the farmer more directly, e.g., through protests outside farms, but also threats, sabotage, and assaults with the intention of making them quit their business (Ceccato et al., 2021). Note that not all of these crimes are limited to the physical space, as threats, harassment and sabotage can be committed through the internet, e.g., cyber harassment and "doxxing" (publishing personal identifying information, see, Anderson and Wood (2021)). As such, while previously the remoteness of the rural may have had some preventive effect on crimes against farmers, this has become less of an obstacle for the offenders of today – including those linked to animal rights activism. In the next section we discuss how these events impact on farmers' safety perceptions.

2.2 The impact of victimisation and fear of crime

International research has defined fear as a multidimensional concept. According to Warr (2000, p. 453) "fear" is "an emotion, a feeling of alarm or dread caused by awareness or expectation of danger." In the fields of Sociology and Psychology, it has long been known that fear is capable of influencing a wide range of behaviours (Hovland et al., 1953; Leventhal, 1970; Rogers, 1975, 1983) because fear is the result of an individual's assessment of threat severity and its likelihood of occurrence (i.e., perceived vulnerability). Feelings of unsafety may be caused by a multitude of reasons, including the likelihood of being a victim of crime. "Fear of crime" is defined as "an emotional reaction of dread or anxiety to crime or symbols that a person associates with crime" (Ferraro, 1995, p. 23). Research has consistently found that previous victimisation is an important explanatory variable of perceived safety (Hale, 1996; Hirtenlehner & Farrall, 2014; Otis, 2007; Yates & Ceccato, 2020). Personal safety can also be affected by being aware of other people's victimisation, especially when it comes to family members or friends (see, e.g.,, Skogan, 1987). Such fear has been referred to as altruistic fear as it relates more to the perception of other people's safety rather than one's own (see, e.g., Drakulich, 2014; Heber, 2009).

Fear of crime leads to a "sense that one must always be on guard, vigilant and alert" (Gordon & Riger, 1989). Such feelings have the power to modify and/or restrict people's activities in everyday life (Jackson & Gray, 2010). Research distinguishes between "functional" and "dysfunctional" fear which both can result in various coping strategies. According to Gray et al. (2011), functional fear may lead to precautionary actions that may reduce both fear and risk of victimisation, sometimes even prompting individuals to support activities that make crime and victimisation more difficult. On the other hand, dysfunctional fear may in extreme cases paralyse individuals, affect their health and discourage them from fully participating in society. Previous research suggests that constrained behaviours may be both a cause and a consequence of fear of crime (Liska & Kenney, 1988). For example, fear of crime may cause a person to install a security system. Owning a security system and

activating it on a daily basis may make the person more afraid of crime, as they are reminded about the threat of crime. Reid et al. (1998) describe the arguments of Norris and Kaniasty (1992), who believe that assuming that taking precautions would lead to reduced fear is incorrect, and that crime prevention strategies are better conceptualised as psychological coping mechanisms. That is, rather than reducing fear, the precautions shield the individual from the effects of fear, which allows them to live with the fear (Reid et al., 1998).

Jackson and Gouseti (2012) indicate four main categories of behavioural responses to fear of crime: avoidance behaviour, protective behaviour, behavioural and lifestyle adjustments, and participation in relevant collective activities. The first type, avoidance behaviour, involves minimising one's contact with certain types of people, routine activities or places. Protective behaviour constitutes activities that are thought to prevent crime (e.g., installing CCTV cameras). Behavioural and lifestyle adjustments involve a withdrawal from activities that are considered dangerous, such as opening a farm to the public. Collective activities include participation in groups, such as farm watch schemes.

To explain which factors drive individuals to cope with their fear and the threat that caused it, the concept of *fear appeals* can be utilised. In Psychology, the concept of *fear appeals* are used to indicate persuasive messages designed to arouse fear in people by presenting them with the possible undesirable consequences of an event if they do not follow the recommendations of the message (Witte & Allen, 2000). An example of this can be including texts on cigarette packets describing the potential dangers of smoking, with the aim of deterring people from smoking (Ruiter et al., 2014). Fear appeals have also served in research as explanations of fear of crime (see e.g., Cates et al. (2003)), although fear as a tool for behavioural change has shown inconsistent results in research (Ruiter et al., 2014; Witte, 1992).

To further understand the processes around fear appeal and why fear-based persuasion may succeed or fail, Witte (1992) introduced the extended parallel process model. The model is defined by four key factors to predict the likely outcome of communications which involve a fear appeal: a) *self-efficacy* – the perception the individual has that they are competent to perform the tasks needed to control the risk; b) *response efficacy* – the perception the individual has that the action, if carried out, will successfully control the risk; c) *susceptibility* – the perception the individual has of how likely the threat is to impact them and d) *severity* – the perception the individual has of the magnitude of the threat. This model provides three different outcomes when a person is presented with a fear appeal. For one, if the perceived threat is low, there may be no response to the message. If the perceived threat is significant, and the individual recognises a response that would feasibly and effectively remove the threat, they are motivated to control the danger, i.e., adaptive outcome. On the other hand, when perception of a threat is high but perceived efficacy is low, the individual is motivated to cope with their fear rather than control the danger itself. This is referred to as *defensive motivation* and leads to maladaptive responses such as denial of the severity of the threat.

There have been a handful of studies on the effect of fear appeals on farmers' safety, although more in line with work place safety rather than safety from crime victimisation; but see e.g., Smith et al. (2008) and Morgan et al. (2002). A Swedish equivalent can be found in the study by Svennefelt et al. (2019), which showed that fear appeals do seem to arouse reactions among Swedish farmers, but not always the expected reaction. The study showed that the farmer may choose to reject the risk message rather than responding to its intention and the response could vary each time the farmer was presented with the message.

Animal rights activism as a cause of fear has mainly been researched in the United States (although for examples in the United Kingdom, see, e.g., Henshaw (1989) and Donovan and Coupe (2013)). The study by Carson et al. (2012) indicates that although there has been an substantial increase since the 1970s in the USA, illegal activity attributed to animal rights activism has largely been non-violent, targeting property rather than person. Some argue that radical environmentalism and animal rights (REAR) activism as a whole should not be considered terrorism since property cannot be "terrorized" (Hirsch-Hoefler & Mudde, 2014), but as Drumhiller and Roesler (2021) show in their study, inferring that acts with no perceived direct

harm to humans will not lead to fear is not a fair assumption. The results of their study indicate that even acts such as the release of animals can instil fear, and that it is difficult for the victims to view attacks on their farms as independent form an attack on their home and family (as farmers often live within close proximity of their farms); often including an added feeling of "violation." Fears related to activism may conversely manifest differently for other types of victims, e.g., medical researchers including animal testing, where fears are more linked to economic costs and losses in research rather than personal harm (Drumhiller & Roesler, 2021). Cases of prolonged harassment campaigns against a single target are not uncommon, and the underlying knowledge of that devoted extremists know your identity and home address could cause long-term fear and effects on mental well-being; as well as one's economy (Donovan & Coupe, 2013). As another example of the effect of fear appeals, a graffiti symbol with a link to a radical activist group sprayed at a workplace can be enough to make previously targeted victims to switch jobs (Donovan & Coupe, 2013).

Overall, crime and fear of crime in the rural has been an understudied area, despite evidence of unique conditions capable of affecting the safety perceptions of rural inhabitants, including farmers. Following the approach of routine activity (Cohen & Felson, 1979), farmers may feel vulnerable to crime as they can appear as attractive targets (e.g., valuable equipment, machinery and other goods), but also unprotected and unguarded targets (low rural population density as well as restricted police presence and resources). Farmers have also been found to rarely report crime to police as they feel that is not worth it (Barclay, 2016; Ceccato, 2015). This may all affect safety perceptions, creating a sense of helplessness and vulnerability.

The scarcity of official statistics on crimes against farmers in Sweden poses a challenge for estimating the scope of the problem, and more so for crimes against animal farmers in particular. Although not limited to animal producers, the recent Swedish Agricultural Survey showed that a quarter of farmers declared feeling worried or very worried about becoming a victim of crime. Although only four out of 10 farmers have been victims of crime in the past two years, two out of three know someone who has been victimised by crime in their village (Johansson, 2018), and this pattern has been fairly stable since early 2010 (LRF, 2012).

Drawing from this literature on fear of crime, fear appeal and the work carried out by animal geographers, we turn now to the conceptual model and the study's research questions. This empirical study examines the following research questions:

(1) Who is the typical farmer in fear and how many are affected? In what way do poor safety perceptions affect farmer's life in terms of economy, family, trust in strangers, and overall quality of life?
(2) Adopting the concept of fear appeals, how do animal farmers cope with the threat of animal activism? Why do some prefer not to actively work against such threats?
(3) Do those who adopt crime prevention measures feel safer than those who do not, and why?

3. Study area

Sweden is situated in northern Europe and has one of the largest land areas on the continent, with a population of over 10 million people. The country is divided into 290 municipalities, which can be further divided into urban, accessible rural and remote rural municipalities. There are 112 urban municipalities that are home to approximately 7 million people, 156 accessible rural municipalities with a population of circa 3 million, and 22 remote rural municipalities with around 140,000 residents. The northern parts of Sweden has a much lower population density than in the south, where most farms are located. Urban areas cover only 1.5% of Sweden's land area but is where 87% of the population is living. Furthermore, 63% of Swedes live in major urban areas.

4. Data and methods

4.1 The animal farmers' survey

Data collection was conducted through a survey of farmers related to animal production in Sweden. We gained access via Statistics Sweden to email addresses of animal producing enterprises in the so-called Farm-register, which contain a total of around 9,800 self-registered addresses. The survey software Netigate (Netigate, 2020) was used to distribute the survey to the farmers. The survey was also made available through a link, which different organisations associated with animal production then distributed to their members.

Due to the way the survey was delivered, it is not possible to report any reliable response rates by groups. Nonetheless, an estimation of the response rates of milk, pig and mink fur producers was still possible: 16% of milk producers in Sweden contributed to the survey, as well as 18% of pig farmers and 33% of mink fur producers. Also, note that while the email to the respondents stated "To you who are an entrepreneur with animal production/CEO of a company with animal production," as with any other questionnaire we cannot know for sure who actually answered the questions. The email addresses are self-registered, so the sample can only be an estimation of the total number of farmers in Sweden.

As part of the survey, a questionnaire was developed containing 56 questions, which were divided into eight sections, all specified to be aimed to farmers working with animal production. A first set of background questions (age, location, type of animal production, employees, enterprise, and personal publicity, etc.) was followed by questions about crime prevention measures, crime victimisation and other events linked to their animal production, the general negative discourse about animal production, animal welfare inspections, support from society/police/socially, general crime victimisation, and concluding with a mental well-being scale (Stewart-Brown et al., 2009). A project reference group (functioning as an advisory group) was established to provide comments on the questionnaire design and help us interpret the results of the study. The reference group included most of the various Swedish animal producing organisations, as well as representatives from the Federation of Swedish Farmers and the Swedish National Council for Crime Prevention (BRÅ).

The survey was conducted from June to September 2020, with four reminders to the respondents during that timeframe. The statistical software package SPSS (IBM Corp, 2018) was used to analyse the data. In total 5,479 farmers (56%) submitted their answers, but 17% did not press the final button ("submit your answers"). As this could be interpreted as a withdrawal of consent to participate in the survey, for ethical reasons, we decided to exclude these respondents from the analysis, which left 3,815 answers remaining, equivalent to 39% from the original sample.

The authors are aware that the survey was conducted in the middle of the Covid-19 pandemic, which may have affected the farmers' recent experiences. This factor is outside the scope of this paper but we encourage future research to explore the issue.

The questionnaire can be available on request. Due to the size of the questionnaire, it cannot be included in this article.

4.2 Statistical methods and data management

Chi-square analyses were performed on the results of the survey to identify significant relationships of fear of activism and the different impacts of it, together with background characteristics of respondents including age, gender, level of rurality of their municipality, previous victimisation, knowledge of other victims and type of animal production. The chi-square value, degrees of freedom and probability value have been provided where relevant. Binary logistic regression was then used to explain the impairing impacts of fear of crime and further explore the relationships between victimisation, situational factors such as level of rurality and size of operation, policing, and crime prevention practices after controlling for age, gender, and family status of respondents.

Description of variables

A number of dependent variables were identified to potentially describe the impacts of fear of animal rights activism. The main variables were all part of a section of the questionnaire where the respondents were asked to take a position on a series of statements regarding animal rights activism. ("Take a stance on the following statements regarding animal rights activism and its consequences and how it affects you. There are several statements, so remember that they all refer to animal rights activism.")

A total of four statements were selected from the series as dependent variables. "My economic situation is negatively affected" was chosen to represent the more quantifiable impacts of fear of activism. For example, multiple free text quotes showed respondents expressing how the fear and worry have led to them to invest more in protective measures, minimise their public presence in social media and advertising, or reduce or completely stop their animal production. Fear can also inhibit multiple facets of everyday life, restricting mobility or comfort, and strain overall mental health, which was why the statement "My quality of life is reduced" was included as a dependent variable. "My children are affected" was chosen to represent altruistic fear, i.e., fear of impact on others closely surrounding the victim, especially more vulnerable persons like children. Furthermore, fear can also restrict social relations and interaction by sowing distrust, depicted in the statement "Activism has reduced my trust in strangers."

Note that because of the skewed distribution of answers, all four statements which had possible responses based on a Likert scale (fully agree, largely agree, neither agree nor disagree, agree only to some extent, or disagree) were later dichotomised by recoding "Fully agree" and "Largely agree" into "Agree" and the rest into "Disagree." While there is a loss of information using this method, we believe that for the purposes of this study, the nuances are not as relevant as we are interested in the group of farmers that have experienced *any* notable impacts of fear of animal rights activism.

An additional dependent variable was based on three other factors involving *other potential reactions to fear*: having participated in Farm/Neighbourhood Watch Schemes (NWS), having been in contact with the police regarding crime, or if their business were open to visitors through school visits, farm shops, a B&B or the like (having answered "Yes" to any of the three equated to "1," otherwise "0"). Of the three, the first two indicate engagement in crime prevention, while being open to visitors may both indicate a vulnerability and a reason for increased fear, but it is also – as reported by some farmers in the survey – a way to create a connection with the community and deter offenders through familiarity. Finally, a composite variable indicating the "total" impact on farmers was included as a dependent variable. This was based on all the dependent variables of the other models and was recoded as binary (1 = Yes, 0 = No), indicating if a respondent had agreed to any of the statements or engaged in one or more of the practices.

The *independent* variables included background characteristics of the respondent: age, gender, type of municipality, having children in their family, farm size, farm publicness, multiple variables related to victimisation and fear, as well as crime prevention practices (excluding neighbourhood watch, due to overlap with the combined dependent variable described later in this section). Some variables are dichotomous, such as gender, having children in the family and previous victimisation, while age is a categorical variable. Municipality type was based on definitions by the National Rural Development Agency (Glesbygdsverket), classifying municipalities as urban, accessible rural or remote rural municipalities. As an estimation of the size of the farm operation, a dichotomous variable was used based on a question about whether or not the farm had employees. See Appendix A for the full list of the independent variables.

The variables regarding victimisation were based on multiple questions. Victimisation due to being an animal producer was based on the question, "Has your business operation ever been exposed to protests, harassment, trespassing, vandalism, release of animals, personal attacks in media, or similar due to you being an animal producer?." The survey question considered events

that happened in 2017–2020 and before 2020; in this study these two categories were aggregated into "Yes" (indicating if they had been victimised ever at all). It is important to note that not all examples listed in the question explicitly refers to illegal acts, but may include activities that still can be considered threatening to the farmer, e.g., protesting outside of farms or personal attacks in media. These acts may on the other hand lie in a legal grey area. For one, the farm is also often the farmer's residence (in the survey this was true for 92% of those who answered, N = 2863) meaning that some farm protests could constitute breach of domiciliary peace, and secondly, personal attacks in media could be considered defamation or slander. To our study, the act should have been perceived as a threat that affect farmers, their property, family and employees regardless of if it was a crime or not.

Knowledge of someone targeted for victimisation on account of animal production was based on the question, "Do you know anyone working with animal production who has been exposed to these incidents?" The variable of overall victimisation was created on the basis of the question, "Have you personally or someone else in your family ever been exposed to any form of crime such as theft, robbery or violence? This is regarding crimes that have not been brought up previously (in the questionnaire) and are separate from the business operation."

Fear of activism was based on a variable created from the statement "Activism makes me feel afraid," which was dichotomised from the original Likert scale. Worry of overall crime was based on the question, "Have you during the past 12 months been worried that you, your family or your business operation would be victimized by crime of some sort?."

The characteristics of the dataset used in the modelling are reported in the Appendix A.

Models of impact of fear and coping with fear

In the model of impact of fear, the four statements, the variable on other fear reactions, and the combined impact variable were used as dependent variables (Disagree = 0, Agree = 1). The significance level was set at 5%, and the probability value (p-value) has been presented in the case of a statistically significant result. Descriptive statistics were used to characterise the data and chi-square were utilised in order to identify statistical significance between variables. To test for independence between the variables we utilised the Pearson correlation coefficient. In the case of small, expected frequencies, Fisher's exact test was used.

We also investigated how animal farmers were coping with fear. In the questionnaire one statement was observed to be relevant in this case, which was from the same series of statements as the dependent variables in the first model (regarding animal rights activism): *"I have taken measures to protect myself."* This was later used in chi-square analyses including variables on background characteristics, fear of activism, worry of overall crime, and implementation of modern crime prevention (such as alarms, CCTV cameras, locks and other modern technologies). Additionally, results from two other statements were selected to explain why or why not farmers are taking action against the problems: *"My preventive measures make me feel safer"* and *"Preventive measures lead to worsened quality of life for me."* Furthermore, the respondents were allowed on a number of occasions in the questionnaire to write more freely about their experiences and the aftermath of events. This information was also analysed and included to explain the farmer's agency surrounding the problem of crime and fear of crime as discussed in section 5.4.

Finally, Geographical Information Systems (GIS) were used to visualise patterns of victimisation and fear by the respondents. It is nonetheless important to note that the maps are mainly illustrative, since the number of responses may not be representative of the total share of animal farmers per municipality or may be (over)underestimated in particular municipalities.

5. Results

5.1 Fear of animal rights activism

Results from the survey show that 611 respondents (16.2%) had been victimised on account of being an animal producer (including protests, harassment, trespassing, vandalism, release of animals, personal attacks in media, or the like). Notably, most farmers do not live by themselves: 80,2% of the respondents declared that they were currently living together with either their significant other, parents, siblings, other adults, and/or children. 792 (20,8%, N = 2840) farmers also had other people employed on the farm, who are also potentially victimised by these events. As many as 748 out of 3600 farmers (20,8%) said that they or their families had experienced other forms of crime victimisation, apart from their business such as, robbery and street crime. Table 1 shows examples of events related specifically to animal rights activism from the survey.

Out of 3,059 respondents, 903 people (or 29,5%) agreed with the statement *"Activism makes me feel afraid."* However, among those who already have been victimised due to being animal producers, 51,6% declared being fearful, compared to 24,8% of those who have not been a crime victim, $\chi^2 = (1, N = 3037) = 151{,}489$, $p < 0{,}001$. Similarly, 41,4% of respondents who knew other people who had been victims also claimed they were in fear of activism, while 19,7% of those who did not know any victims felt fear, $\chi^2 = (1, N = 2898) = 162{,}104$, $p < 0{,}001$. See Table 2 for an overview to what extent victimisation and fear had been experienced by different respondent groups (see Appendix B for a summary of all chi-square results).

The largest number of respondents who declared fear of animal activism were male and aged 30–49 years. However, while younger farmers (18–29 years) were the smallest age group, half of those who did declare being in fear are younger, compared to 20,5% of the oldest group (aged 65 years and above). Similarly, 36,8% of the female farmers expressed fear of activism, while only making up 28% of the respondents. Different types of animal producers also experience fear to a different extent. Of those afraid, the large majority constituted animal farmers working with cow production (56,4%) and sheep and goat production (26,9%). This roughly follows the total distribution of type of animal farmer overall, as 56,6% of all respondents are cow farmers, and 29,5% are sheep and goat farmers. Only 8,7% of those in fear of animal rights activism are pig farmers, but observing only pig producers as a group, 44,4% declared being in fear. Rabbit, mink and fish farmers are three of the smallest groups among those in fear (1,1%, 1%, and 0,4%, respectively) but almost two-fifths of all rabbit farmers, three out of four mink farmers and one-third of all fish farmers declared being in fear of animal rights activism (Figure 1).

Table 1. Types of harassment and crimes respondents have experienced with animal rights activists and the like.

Type of Act	Survey Sample (Translated from Swedish, and Paraphrased When Necessary)
Burglary/Theft/Release of animals	- *3 people . . . broke into our chicken pen and stole 28 hens . . . later you could read about how the Animal Liberation Front had freed 28 hens* - *2000 minks were released . . . 500 minks bit each other to death . . . lost a year's worth of production.*
Trespassing/Protests	- *Three animal rights activists went inside through an unlocked door . . . .were detected and arrested by police.* - *Trespassing at night by animal rights activist, discovered through videos spread on the internet . . .* - *Animal rights activist protesting right outside my residence* - *Protesting activists right as we were about to let the cows out [for grazing]*
Threats/Harassment/Personal attacks in media	- *My whole family and children have been harassed through the phone by animal rights activists* - *The children, 11 and 13 years old, have been threatened and harassed in school due to us being farmers, we have been threatened through the internet when we've told what our job is* - *Pictures were taken of my animals and published on social media by animal rights activists*

Table 2. Victimisation and fear among respondents by gender, age, type of municipality, family structure, and size of business operation.

Sample Characteristics	Total*	Share of total Answers (%)	Share Victimised Due to Animal Production (%)	Share Victimised of other Crimes (%)	Share in Fear of Activism (%)
Gender					
Male	2508	72,0	16,0	20,7	26,6
Female	977	28,0	16,0	21,1	36,8
Age					
18–29	58	1,8	24,6	27,5	50,0
30–49	1024	32,1	18,7	19,8	37,7
50–64	1514	47,5	14,5	21,7	28,0
65 and above	591	18,5	12,2	19,9	20,5
Type of municipality (of residence)					
Urban	908	32,5	16,4	20,0	31,5
Accessible rural	1760	63,1	15,7	22,1	30,6
Remote rural	123	4,4	13,8	14,2	21,4
Family structure					
Have children living with them	1132	29,7	17,4%	20,6%	36,5%
Have other family living with them (partner/parents/siblings/other adults)	2995	78,5	16,1		
Business operation size					
Have other people employed	792	20,8	28,6%		

*The sum total differs for each category as not all respondents answered each question.

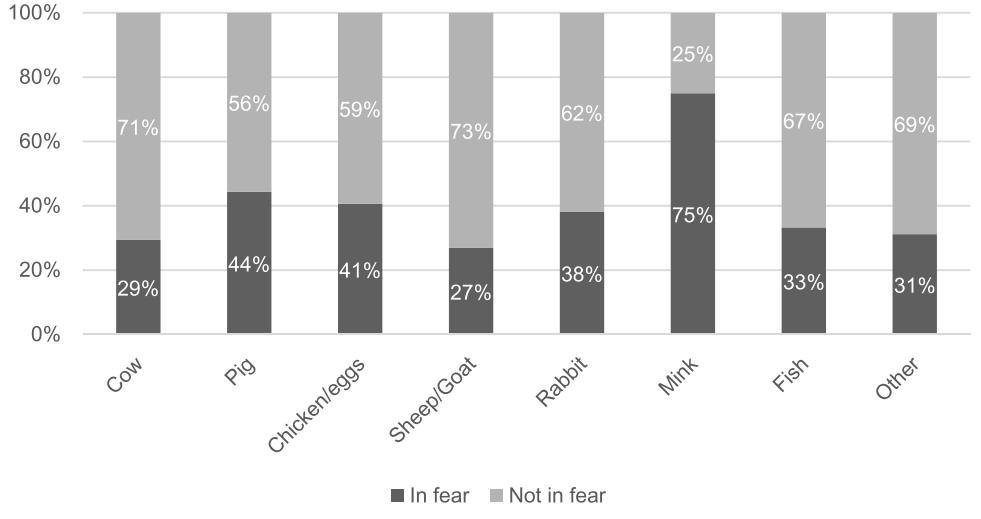

Figure 1. Percentage of respondents who declare being in fear of animal rights activism by type of animal production. n_{Cow} = 2109, n_{Pig} = 202, $n_{Chicken/egg}$ = 327, $n_{Sheep/Goat}$ = 1139, n_{rabbit} = 37, n_{mink} = 12, n_{fish} = 13, n_{other} = 109.

Figure 2 shows the municipalities with the most respondents being victimised (a), those who are in fear (b) and farmers who take precautionary measures (c). Note that the geography of fear is not exactly the same as the geographies of victimisation and/or precaution. Fear is mainly located near the central and slightly southern parts of the country, with a few outliers in the north while the precautions tend to show a more southern pattern.

5.2 Impact of fear of animal rights activism

From the total respondents, 42% (1603 respondents) declared being affected by animal right activism (agreed to one or more of the impact questions).

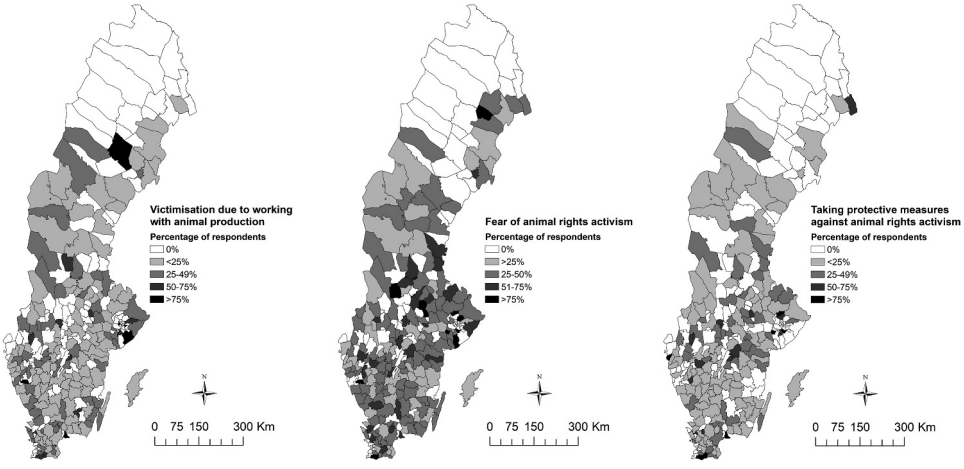

Figure 2. (a) Geography of declared crime victimisation related to animal rights activism (N= 2791). (b) Geography of farmers in fear of animal rights activism (N=2791, out of a total of 3815 respondents). (c) Geography of respondents who have taken measures to protect themselves against animal rights activism, N= 2791, out of 3,815 total respondents.

More specifically, three out of 10 respondents agreed with the statement "*My financial situation is affected negatively* because *of animal rights activists."* Respondents who declared that they were in fear of animal rights activism agreed to a significantly higher extent (56,8%) with this statement than did those who did not declare fear of such activism (17,8%), χ^2 = (2, N = 2787) = 453,933, p < 0,001. Younger animal producers appear to have been impacted more than older farmers, with 40,4% of farmers aged 18–29 stating they were affected, while only 18,6% of the oldest group did, χ^2 = (3, N = 2540) = 53,428, p < 0,001. Smaller enterprises of animal production in particular declare a financial impact, with all of the mink farmers and more than half (53,8%) of the fish producers declaring their economic situation being negatively affected (Figure 3). The size of the farm operation, both in terms of having employees and self-assessed size, also had a significant relationship to economic impact of fear: 41,5% of farmers with other employees had experienced an economic impact due to animal rights activism, compared with 25,1% of those without employees, χ^2 = (2, N = 2312) = 62,748, p < 0,001. Similarly, 49,5% of those who consider their operation "Large" felt an impact, compared to 36,8% and 24,0% of those describing their farms as "Medium" and "Small," respectively, χ^2 = (2, N = 2309) = 75,738 p < 0,001.

Furthermore, 18,3% of the respondents declared that their *quality of life is reduced because of animal rights activists*. Out of these respondents, 76,6% had declared fear of activism, χ^2 = (2, N = 2823) = 662,980, p < 0,001. Less significant differences were observed within gender, χ^2 = (1, N = 2637) = 1,539, p = 0,463, and age χ^2 = (3, N = 2423) = 12,222, p < 0,057, but the age group of 65 and above had a slightly lower than average share of farmers agreeing with the statements (14,2%). Aside from the smaller mink and fish groups, pig producers appear to be especially affected, comparably (28%), while sheep and goat producers are less so (15%). Animal rights activism appears to affect the quality of life of farmers who describe their farms as "Large" (27,9%) to a higher extent than those considering their farms "Medium"(17,8%) or "Small" (10,5%), χ^2 = (2, N = 2201) = 46,417, p < 0,001. Nearly one-quarter (23,9%) of farmers with employees compared to 15,5% of those without felt affected χ^2 = (2, N = 2201) = 25,331, p < 0,001.

As many as 43,4% of the respondents agreed with the statement *"Activism has reduced my trust in strangers."* Of the respondents who declared being in fear of animal rights activism, 74,2% agreed with this statement, χ^2 = (1, N = 2910) = 602,416, p < 0,001). This statement also held true for more than half (51,9%) of the youngest farmers and close to one-third of the oldest (33,2%), χ^2 = (3,

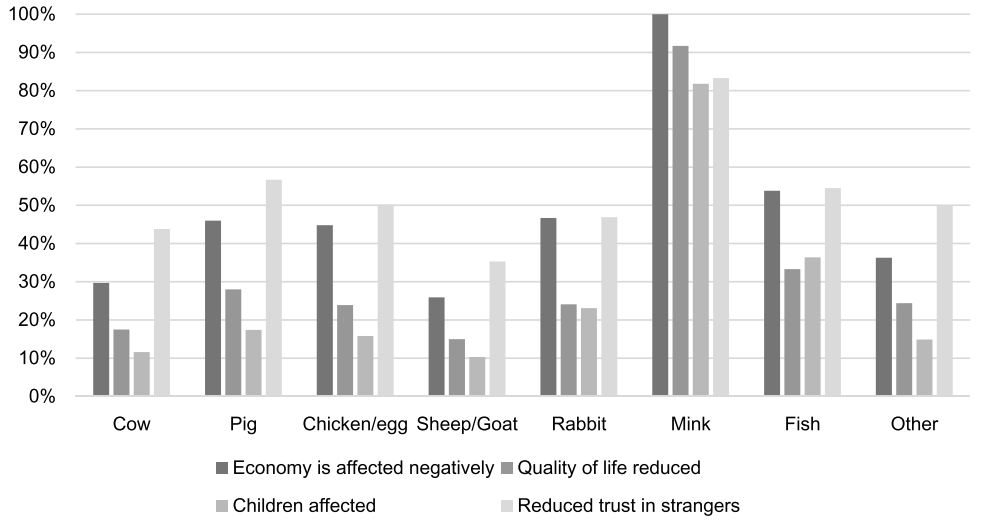

Figure 3. Percentage of respondents who declare being impacted by animal rights activism, by type of animal production. n_{Cow} = 2109, n_{Pig} = 202, $n_{Chicken/egg}$ = 327, $n_{Sheep/Goat}$ = 1139, n_{rabbit} = 37, n_{mink} = 12, n_{fish} = 13, n_{other} = 109.

N = 2530) = 42,174, p < 0,001. Mink and pig farmers had the largest share of less-trusting respondents (83,3% and 56,7% agreed with the statement, respectively), while sheep and goat farmers appear to be the group that still has the most trust in strangers (only 35,3% agreed). Overall trust also seem to increases with age, χ^2 = (1, N = 2530) = 43,677, p < 0,001. People with employees felt that their trust had been weakened more than people with no employees (52,1% compared to 39,2%, χ^2 = (2, N = 2294) = 33,065, p < 0,001), while farmers with operations described as "Small" had their trust less affected (37,1%), compared to those with "Medium" (50,2%) or "Large" farms (57,7%), χ^2 = (4, N = 2295) = 53,725, p < 0,001.

In addition, 11,3% of the total number of respondents agreed with the statement "*Children are affected negatively because of animal rights activists."* Of this subset of respondents, the vast majority (80,7%) also feared animal rights activism, χ^2 = (2, N = 2515) = 464,869, p < 0,001). Here, farmers aged 30–49 declare that their children are affected negatively by acts of animal rights activism more than other age groups do (15,1%), χ^2 = (3, N = 2161) = 15,977, p = 0,001. The children of respondents in the smaller groups of animal production such as mink, fish and rabbit (81,8%, 36,4% and 23,1% respectively), as well as pig farmers (17,4%) appear to be affected to a greater extent than those of other types of farmers (Figure 3). Furthermore, the share agreeing with the statement was higher among farmers with employees than those without (16,8% versus 9,1%, χ^2 = (2, N = 1960) = 24,596, p < 0,001, while the tendency to agree also increased with self-assessed size of one's operation (7,5% of "Small" farms, 16,1% of "Medium" and 21,3% of "Large," χ^2 = (4, N = 1961) = 47,989, p < 0,001).

5.3 Modelling safety perceptions among animal farmers

Table 3 reports the results of six binary logistic regression models to indicate the impacts of fear of animal rights activism on farmers, after controlling for individual and situational factors.

Model 3 had eight significant covariates out of 11 variables (with the highest Goodness to fit, Nagelkerke R Square = 0.38), indicating the *impact of animal right activism on children* of animal farmers. This is followed by model 1, that had seven significant covariates out of 11, showing evidence that *farmers' personal economic situation* is indeed affected by animal rights activism. With six significant covariates each, models 2 and 4 show the likelihood of perceiving an impact of animal rights activism on their own *quality of life* or *having reduced trust in strangers*,

Table 3. The impact of fear on farmers working with animal production: (1) Own economy is affected negatively, (2) negative impact on quality of life, (3) children being affected negatively, (4) reduced trust in strangers, and (5) other reactions to fear.

	Overall Impact				(1) My Economy				(2) My Quality of Life				(3) My Children are Affected				(4) Reduced trust in Strangers				(5) Other Reactions to Fear (NWS-Participation, Contact with Police, Open to the Public)			
Respondent characteristics	OR	CI 95%		p	OR	CI 95%		p	OR	CI 95%		p	OR	CI 95%		p	OR	CI 95%		p	OR	CI 95%		p
Gender (Male)	0,986	0,753	1,289	0,916	1,260	0,974	1,631	0,079	**1,893**	**1,369**	**2,619**	**0,000**	**1,646**	**1,095**	**2,474**	**0,016**	**1,298**	**1,014**	**1,662**	**0,039**	1.027	0.825	1.278	0.811
Age (Older)	0,947	0,681	1,316	0,745	**0,622**	**0,420**	**0,921**	**0,018**	1,174	0,745	1,850	0,490	**1,991**	**1,101**	**3,600**	**0,023**	0,922	0,659	1,289	0,636	1.199	0.894	1.607	0.226
Family kids (yes)	1,160	0,895	1,502	0,262	**1,325**	**1,042**	**1,685**	**0,022**	1,217	0,901	1,644	0,200	**2,781**	**1,881**	**4,114**	**0,000**	1,216	0,962	1,538	0,102	1.179	0.954	1.455	0.127
Previous victimisation																								
Victim due to animal production (yes)	**3,326**	**1,956**	**5,656**	**0,000**	**1,515**	**1,130**	**2,031**	**0,005**	**2,503**	**1,803**	**3,474**	**0,000**	**3,552**	**2,418**	**5,218**	**0,000**	**1,659**	**1,219**	**2,258**	**0,001**	**2.106**	**1.601**	**2.770**	**0.000**
Know someone who has been a victim due to animal production (yes)	**1,641**	**1,262**	**2,134**	**0,000**	**1,562**	**1,215**	**2,007**	**0,000**	**1,394**	**1,013**	**1,919**	**0,041**	**1,92**	**1,237**	**2,981**	**0,004**	**1,821**	**1,441**	**2,302**	**0,000**	1.105	0.889	1.374	0.367
Other crimes/ their family (yes)	1,123	0,817	1,544	0,475	1,046	0,798	1,371	0,746	1,26	0,92	1,725	0,15	**1,493**	**1,021**	**2,184**	**0,039**	1,157	0,888	1,509	0,280	**1.638**	**1.293**	**2.074**	**0.000**
Safety perceptions																								
Fear of animal rights activism (yes)	**3,734**	**2,642**	**5,277**	**0,000**	**4,105**	**3,229**	**5,219**	**0,000**	**7,765**	**5,723**	**10,536**	**0,000**	**7,365**	**4,866**	**11,148**	**0,000**	**5,313**	**4,166**	**6,775**	**0,000**	1.103	0.883	1.379	0.387
Worried about overall crime (yes)	**2,387**	**1,868**	**3,051**	**0,000**	**1,752**	**1,302**	**2,357**	**0,000**	**2,829**	**1,805**	**4,436**	**0,000**	**2,945**	**1,469**	**5,907**	**0,002**	**2,975**	**2,278**	**3,887**	**0,000**	**1.454**	**1.152**	**1.836**	**0.002**
Situational factors																								
Size (have employees)	**1,838**	**1,370**	**2,464**	**0,000**	**1,525**	**1,192**	**1,949**	**0,001**	1,092	0,806	1,478	0,571	1,270	0,875	1,844	0,209	1,110	0,869	1,418	0,401	1.187	0.954	1.477	0.125
Type of municipality (rural)	**2,038**	**1,130**	**3,674**	**0,018**	0,812	0,447	1,475	0,495	**2,516**	**1,318**	**4,805**	**0,005**	0,602	0,197	1,843	0,374	**1,975**	**1,173**	**3,326**	**0,011**	1.204	0.754	1.922	0.438
Policing & crime prevention (CP)																								
Crime prevention excluding Neighbourhood Watch (yes)	**1,604**	**1,184**	**2,172**	**0,002**	1,127	0,788	1,612	0,511	0,997	0,629	1,581	0,989	0,86	0,467	1,583	0,628	1,323	0,951	1,841	0,096	**1.847**	**1.358**	**2.513**	**0.000**
Diagnostics																								
Cox & Snell R Square	0,178				0,174				0,21				0,181				0,256							
Nagelkerke R Square	0,262				0,251				0,349				0,38				0,343							

Note: **Bold values** indicates significance at the 0.05 level.

respectively. Most of the significant predictors appeared in two or more models. Notably, *being in fear of activism* increased the likelihood of having experienced an impact – in all four main models, as did *being worried of overall crime*, and having been *previously victimised* due to their animal production as well as *knowing such a victim*. One interesting exception is model 5 (NWS-participation, Police contact, Public Openness), in which knowing another victim or being in fear of activism were not significant predictors, while worry of overall crime was. The dependent variable in the first model is a composite, consisting of all dependent variables of the models 1–5 (Table 3).

While worry about overall crime was shown to be significant in all models, previous victimisation of farmers or victimisation of someone in their family through crimes (separate from their business) is only shown to increase the likelihood of perceiving their children as being affected by activism. Having a larger operation (those with employees) was found to increase the likelihood of experiencing a negative economic impact, while it had no significant relationship in other models. Additionally, farmers living in municipalities classified as rural are more likely to note a negative effect on their quality of life as well as reduced trust in strangers because of animal rights activism. However, the type of municipality did not turn out to be significant in terms of economic impact or effect on children. Notably, having implemented crime prevention was the only variable that did not appear as significant in any of the main models, but did for the model on NWS-participation, police contact and public openness, as well as the composite variable model.

While the models have similar significant predictors, findings show some interesting differences for the variables indicating individual characteristics. Younger farmers appear to be more likely to experience economic impacts from animal rights activism. Gender has no predictive impact on whether farmers perceive their economic situation is affected by animal rights activism, but it does for other factors. Having children in their family was associated with higher likelihood of impacting economic situation, while family status has no significant effect on the likelihood of impacting their quality of life or trust in strangers.

5.4 Farmers' coping with fear: action and inaction

Of the respondents of the questionnaire (n = 3103), 17,8% claimed that they had taken some kind of measure to protect themselves, specifically due to animal rights activism. Out of these, 60,7% also declared fear of animal rights activism $\chi^2 = (1, N = 2930) = 321{,}543$, $p < 0{,}001$). The geographical spread of the farmers who have taken protective actions can be observed in Figure 2c. Below we report examples of actions.

> [Activism] has led to having your phone on you at all times in case an alarm goes off

> I am more careful with locking and keeping watch certain periods of the year, especially summer

> "lanning to get another watch dog

> I talk to neighbours, inform them about cars that seem to be doing [reconnaissance work], posts on local Facebook page etc.

Previous victimisation leads to action, at least for more than two-fifths of respondents. As many as 44% of those who had been victimised due to the fact that they are an animal producer declare having taken precautions to avoid further victimisation, compared to 12,4% of non-victims, $\chi^2 = (1, N = 3078) = 300{,}787$, $p < 0{,}001$. In addition, those respondents who knew someone who had been victimised were also more likely to take precautions, $\chi^2 = (1, N = 2937) = 177{,}269$, $p < 0{,}001$. Men and women appear to take precautions against activism to a similar extent. Farmers aged 18–29 have the highest share of respondents protecting themselves (31,5%), while farmers aged 65 and older have the lowest share (11,5%) $\chi^2 = (3, N = 2625) = 34{,}745$, $p < 0{,}001$). Of the 18–29-year-olds protecting themselves, 82,4% claimed being in fear of animal activism (the equivalent share is 35,1%

among those not taking precautions), while 47,1% had been previously victimised due to their animal production (15% among those not taking precautions). In comparison, half of the farmers aged 65 and older who were taking proactive measures were also in fear of activism (16,7% among those not taking precautions), with 47,1% having experienced victimisation for being an animal producer (8,8% among those not taking precautions).

Mink, fish and pig farmers declare taking proactive measures against activism more often than other animal farmers (100%, 58,3%, and 37,2%, respectively), while sheep and goat farmers tend to do so less than other farmers (15%). Furthermore, 75% of mink farmers taking precautions were also afraid of animal rights activism; among fish farmers this percentage was 57,1%, among pig farmers 74,2%. Half of the sheep and goat farmers who had taken action to protect themselves were afraid of animal rights activism.

Not only does previous victimisation trigger precautionary actions, fear of becoming a victim also leads to such actions. To compare, those who have declared being worried about crime in general use modern crime prevention to a greater extent (47,6%) than those who declared not being worried (33,2%), $\chi^2 = (1, N = 3667) = 70{,}866$, $p < 0{,}001$. Half of farmers who felt that they were in fear due to animal rights activism declared that they have implemented some form of modern crime prevention measures on their farm. This can be compared to 40,5% of farmers who stated that they were not in fear and still invested in modern crime prevention $\chi^2 = (1, N = 3059) = 19{,}462$, $p < 0{,}001$). Altruistic fear also seem to have some positive affect on adopting crime prevention measures, as 63,1% of those that felt that their children had been impacted by activism had implemented modern crime prevention, $\chi^2 = (1, N = 2562) = 51{,}663$, $p < 0{,}001$. Also, 57,4% of those that had children affected by activism had taken precautions to protect themselves against activism, $\chi^2 = (1, N = 2494) = 334{,}347$, $p < 0{,}001$.

While functional fear may lead to actions improving one's perception of safety, many respondents noted that implementing crime prevention measures and improving routines also negatively impacted their economic situation and quality of life. For example, of those who have taken precautions to protect themselves against activists, less than half (47,1%) felt that implementing crime-prevention measures made them feel safer. 37,1% felt that their quality of life was reduced because of it. Respondents also felt that they were investing "a lot of money in safety" that could have gone to other things, and locking doors to a greater extent, for example, meant that "the workday becomes much longer and even smaller jobs take more time." Measures could also lead to decreased accessibility for potential customers:

> We have had multiple burglaries in a residence. Therefore, we put up a road barrier, which led to no unwanted cars entering. But that also makes it hard to have a farm shop . . .

There were also instances where there seemed to be conflicts between increasing personal perception of safety but also awareness and worry of the problem:

> I'm going to get surveillance cameras and put them in strategic places so I can keep track of unknown cars. However, I'm hesitating to do this as I'm afraid that they'll make me more worried.

Fear of crime and its impacts as such can create a dilemma for the victims. Where even attempts to remove the fear or the source of the fear is counterproductive, some of them choose not to act.

As many as 64% of farmers who were victimised often do not report the offence to the police (n = 2155). Of those who provided reasons for not reporting (n = 1062), 45% declared that they thought the report would not lead to anything, 32% that they did not feel that the crime was serious enough to warrant a report and 31% that it was not worth the trouble. Also, 70% of those who detailed what happened after they reported (n = 819) had their cases closed, and only 3% had their case lead to a conviction. This is perhaps reflected somewhat in the respondents' relatively low perception of the police's ability to assist or protect them, even more so among those in fear of activism. To the statement *"You can trust the police to come when you need them to,"* 74,1% of those in fear disagreed, compared to 65,0% of those not in fear $\chi^2 = (2, N = 2502) = 21{,}874$, $p < 0{,}001$. In

addition, fear and worry over crime appear to drive a more aggressive stance among a few farmers who mention they've started to keep loaded weapons at hand. Some wrote that they would "shoot first, ask questions later" as they did not think they could afford to lose more. Interestingly, those who do not report crime to the police also implement protective measures against activism to a lesser extent (20,0%) than those who always or occasionally report crime (27,4% and 35,9%, respectively) $\chi^2 = (4, N = 1830) = 28{,}145, p < 0{,}001$).

Some farmers suggested alternative ways to deal with the problem by improving the communication between groups (activists and farmers):

> "Talk to [activists], show, explain and tell them about why we work as we do."

> " . . . farm and production are very open and welcoming to visitors where we can describe the business in person. [. . .] It is hard to commit crimes against someone you feel you know or have a relationship with."

6. Discussion of results

Fear of crime and specifically fear of crimes attributed to animal rights activism has a notable effect on the lives of Swedish animal farmers. Nearly one-third of the respondents to the survey declared that they were in fear of falling victim to activists, which was more common among those who either had been victimised due to their animal production or knew of someone who had been. Results also show clear signs that fear of animal rights activism impacts on farmers' lives, their economic situation and family life. Furthermore, the observed coping mechanisms vary from farmer to farmer and are fairly complex, where certain actions may not lead to the desired results.

Neither victimisation nor fear expressed by farmers show a random pattern. The results in Figure 2 allows for some interesting comparisons to be made. A number of municipalities have both high share of respondents victimisation and low safety perceptions, including e.g., Sölvesborg and Härryda in the southern and south-western part of the country respectively, where the former especially is known for their mink industry. On the other hand, there are also many mismatches between fear and victimisation. A number of these cases are caused by low sample size in certain municipalities (especially in the middle of the country and more urban municipalities near the Stockholm region). However, in the municipality of Hudiksvall for instance, out of 17 respondents just under a quarter had been victimised but nearly 3 out 5 were in fear. There may be multiple possible explanations for this. Also, the north and more central parts of the country are much more rural than the south, which often translates to low guardianship and difficulty in policing, while the reverse is true in the south (Ceccato, 2015). However, it is difficult to interpret here why or why not farmers are implementing precaution measures against animal rights activism; this will instead be discussed below.

While a number of farmers adopt crime prevention measures, it is not certain whether the respondents are implementing crime prevention measures because they are in fear, or if they are in fear despite that – or even because – they are using crime prevention. However, the results show that while most farmers are not necessarily taking precautions to protect themselves to any large degree, a majority of those who do are the ones who fear crime committed by animal rights activism. Furthermore, altruistic fear also was found to have a significant relationship with taking proactive measures, confirming previous studies (e.g., Drakulich, 2014). While nothing conclusive can be drawn from this alone, this finding implies that there is to some degree a functional or empowering aspect to fear of crime that can drive the fearful to act. However, what can also be noticed is that there are many who do not take any action despite their fear of crime associated with animal rights activists. According to the extended parallel process model (Witte, 1992), for fear to motivate individuals to protect themselves, the perceived threat (susceptibility and severity) and the perceived feasibility and likelihood of success of removal of the threat (self-efficacy and response efficacy) must be major. Previous victimisation is a relevant topic here. Those who were not

victimised by crime or did not know any other farmer who had implemented preventive measures, adopted crime prevention to a lesser extent than those who had been victimised or knew other farmers who were victimised by crime. For one, it is possible that these respondents simply have a low perceived severity (high tolerance) and susceptibility of the threat against them, and therefore have no response to its message. Animal rights activism entails relatively unique but rare events compared to other categories of crime, and as such, the full magnitude of the threat may not be perceived (or may be even tolerated) until the individual has been impacted in a more direct manner. This follows previous research that fear can still be instilled by acts of radical animal rights activism with low perceived harm (Drumhiller & Roesler, 2021), while confirming that just the presence of fear itself is not enough to counter inaction.

It is also possible that farmers feel that the available responses to control the risk are not efficient or feasible. In terms of feasibility, implementing technology such as CCTVs and alarms can be expensive, and changing routines (that would be imposed by these crime prevention measures/new technologies) may lead to increased costs or at least a reduction of earnings.

Furthermore, fear of crimes associated with animal rights activism was not correlated with participation in neighbourhood watch schemes, for example. This may be partially explained by the respondents' perception of poor effectiveness of the police. Yarwood and Edwards (1995) find that the success of neighbourhood watch schemes still relies heavily on the cooperation with police, and that in the United Kingdom the programmes generally developed where the relationship between public and police were already favourable. As the results show, the trust in the police is generally low among all respondents, but even lower among those who declare fear of animal rights activism. Thus, there may be a weak foundation for neighbourhood watch initiatives to take root in Swedish farm communities, specifically among those intent on combating activism. Also, Drakulich (2014) notes that altruistic fear is a driver of joining crime watch programmes; as the share of respondents who were associated with altruistic fear was relatively low, this could also partly explain low farmer participation in neighbourhood watch schemes.

Neighbourhood watch schemes as a form of crime prevention may also be perceived as less feasible or efficient against crimes often associated with activism, i.e., trespassing and disturbing the peace through protests. In Sweden, *allemansrätten* (i.e., people's right to roam over privately owned land) can lead to many trespassing offences ending up in a grey area legally, which in turn may lower the self-efficacy of farmers in terms of controlling the threat, due to the risk of facing repercussions if they judge the situation differently than official authorities. This idea is further supported by Model 5, which included NWS-participation and showed worry of overall crime as a significant predictor but not fear of activism, potentially pointing to a difference in perceived efficiency of neighbourhood watch schemes for crimes of different natures. Additionally, there is the fact that less than half of the respondents who did take precautionary actions actually felt safer because of them, which would contribute to a lower response efficacy among farmers. This also follows the arguments of Norris and Kaniasty (1992), that the act of taking precautions does not necessarily lead to reduced fear. On another note, having crime prevention measures was only significant in the fifth model (NWS-participation, police contact, public openness) and the composite model. This is most likely an indication of that (1): farms that are more open to the public become more vulnerable and therefore have to protect themselves, and/or (2): farmers who already are engaged in some crime prevention activities are more likely to also implement other forms of precautionary measures, whether they are afraid or not. The reasons for this may be that they also are more likely to already have the interest, time and financial means to be engaged in crime prevention, but one could also discuss if having multiple measures is actually the result of their inefficiency in making farmers actually feel safer; if the first implemented measure do not improve their safety to a satisfying degree, they invest or engage in another.

If farmers are afraid but not taking protective action in an attempt to control the threat, then they must employ other coping strategies to deal with their fear of the threat. According to the extended parallel process model, this is expressed in defensive actions to control the fear. In this case, the

financial strain of implementing measures may be used as an excuse to not act. Or, as seen from the free text comments, a farmer expressed hesitation to include surveillance measures, as the awareness of the problem might worsen their perception of safety rather than improve it. If the perceived gain of protecting themselves is lower than the perceived loss or side effects of the measure, then they are motivated to avoid and deny, or to minimise their perception of the risk rather than control it.

7. Conclusions and recommendations

An increasing awareness of the environmental impact of consuming animal products and the growth of veganism are examples of macro-societal and environmental changes that are reported to be at the root of actions against farmers working with animal production. These actions against animal farmers can take different shapes, from trespassing, burglary and harassment, to threats or even violence, face-to-face or via the internet, and vary by groups of farmers and across Sweden. This study set out to investigate the extent of victimisation and fear in a sample of animal farmers in Sweden, assessing whether and how fear of victimisation by animal rights activism impacts on animal farmers' lives using chi-square analysis and logistic regression. The study also investigate the coping mechanisms dealing with the fear and impacts, characterising those farmers who are protecting themselves (their property, family and employees against animal rights activism), and discusses possible reasons why some farmers prefer not to take action.

One-third of the total animal farmers declared that animal rights activism makes them feel afraid, among those who were crime victims; half of animal farmers declare feeling afraid. Younger male farmers tend to declare being more fearful than older ones do. Two-thirds of respondents who are mink producers declared being in fear of animal rights activists, followed by smaller proportions of pig and chicken/egg producers. Findings also show that fear of animal rights activism affects farmers negatively, not only their economic situation, their children and their own quality of life, but also their capacity to trust strangers.

While one-fifth of animal farmers from the sample declared they protect themselves, such as by investing in protective measures (CCTV, alarms, getting in involved in safety schemes), the great majority prefer not to do so. One possible reason is that they might not see the actions of animal rights activism as problematic, perhaps because attacks towards them are not too serious and/or have become normalised. The second reason is that farmers might feel that the available responses to control the risk of attacks by animal rights activists are not efficient or feasible to tackle the problem. When this happens, when perception of threat is high but individual perceived efficacy is low, the individual is motivated to cope with their fear rather than to control the danger itself (defensive motivation), leading to, for instance, denial of the severity of the threat. This can be expressed by the relative underreporting of crimes, distrust by most respondents of the police or low rates of participation in safety schemes. Another possible reason for this passivity is the fact that taking preventive efforts does not make farmers feel safer (findings show that less than half of respondents felt safer because of them). This mismatch between an individual's agency and safety perceptions could be explored in future research.

This study shares limitations common to other studies of this type. We deem that our findings can be generalised for the total population of farmers but may not be representative for specific types of animal farmers and/or geographically because the sample was not stratified. Inevitably, this led to a large share of answers from meat producers (including cow, pig and lamb producers), and to a lesser extent producers of chickens, goats, fish, mink and rabbits. We also do not know exactly who answered the survey; as the sampling was based on a registry of farming companies, it is possible that CEOs or owners of the companies answered the survey while not

technically farmers themselves. Moreover, the survey was conducted during COVID-19 pandemic which has affected people's mobility, which consequently may have affected crime against farmers, and by extension, leading farmers to declare feeling safer than under normal conditions.

Despite the limitations of this study, what can be said so far is that it seems that currently the threat of animal rights activism is significant enough to impact and instil fear among a notable number of farmers (including people in their vicinity), but the available responses to this threat are not viewed as efficient, feasible or worth the potential drawbacks.

Animal farmers themselves provide suggestions of alternative ways to tackle the problem, by improving the communication between groups (activists and farmers) and investing in long-term support to the groups of farmers most targeted. At national level, solutions could include changes in the way the criminal justice system deals with these crimes. A separate criminal code could make it possible to track animal-rights-related crime. Currently, these crimes are not prosecuted with a common code, which means that police cannot get an overall picture of this type of increasing crime. Focusing on municipalities that have the most impact would be a good start (Figure 2). Because crime underreporting is still a major issue, the creation of programmes to support farmers as victims of crime, with common financial and emotional assistance across the country, is therefore crucial.

Future research should further investigate the underlying factors behind the mismatches between victimisation and safety perceptions. Even more nuances of fear and victimisation can be explored in studies based on this one, by devising more specific survey questions related to victimisation of the farmers' business operation, themselves or their family members. Equally important is for future studies to explore how the impact of climate change is expected to increase social conflicts and crime victimisation, which can cause additional anxieties and worsened safety perceptions among those working with animal production.

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No potential conflict of interest was reported by the authors.

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Disclaimer

This article contributes to the scientific understanding of fear among farmers. Although most animal rights advocates are not fear provoking individuals, there have been numerous accounts in Sweden of farmers in fear because they are experiencing crimes and other hostile actions reported to be associated with animal rights groups. This study is limited to the information collected on the animal farmers and victims only, not on offenders or suspects of these event.

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Appendix A

Description of the database.

Data type	Description	Unit/Measurement
Respondent's background	Gender	Binary
	Type of animal producer (combined)	Nominal
	Has residence on the farm	Binary
	Self-assessed size of farm operation	Ordinal
	Having employees on farm	Binary
	Age groups of four classes (18–65+)	Interval
	Type of municipality (level of rurality)	Nominal
	Is public on the internet	Binary
	Has open activities such as school visits	Ordinal
Victimisation information	Victimised due to animal production	Binary
	Know someone else victimised due to animal production	Binary
	Overall crime victimisation	Binary
	Know someone else victimised by crime overall	Binary
Crime prevention and Police relationship	Use modern crime prevention measures	Binary
	Police presence	Binary

Appendix B Summary of Chi-Square results for fear of activism and the main impact variables (* = Significant at 0.05 level)

Fear of activism				
Characteristics	**% agrees with "Activism makes me feel afraid"**	**χ^2-statistic**	**Degrees of freedom**	**Cramer's V**
Gender		45,432*	1	0,127
Men	26,6			
Women	36,8			
Age group		54,549*	3	0,145
18–29	50,0			
30–49	37,7			
50–64	28,0			
65+	20,5			
Previous victimisation		151,489*	1	0,223
Victimised	51,6			
Non-victimised	24,8			
Knowledge of others' victimisation		162,104*	1	0,237
Know other victims	41,4			
Do not know other victims	19,7			
Negative financial impact by activism				
Characteristics	**% agrees with "My financial situation is affected negatively"**	**χ^2-statistic**	**Degrees of freedom**	**Cramer's V**
Fear of activism		453,933*	1	0,395
In fear of activism	56,8			
Not in fear of activism	17,8			
Age group		53,428*	3	0,145
18–29	40,4			
30–49	37,8			
50–64	29,4			
65+	18,6			
Gender		0,216	1	0,009
Men	31,1			
Women	30,2			
Employees		62,748*	1	0,165
Have employees	41,5			
Do not have employees	25,1			
Size of operation		75,738*	2	0,181
Small operation	24,0			
Medium operation	36,8			
Large operation	49,5			
Reduced quality of life				
Characteristics	**% agrees with "My quality of life is reduced"**	**χ^2-statistic**	**Degrees of freedom**	**Cramer's V**
Fear of activism		662,98*	1	0,485
In fear of activism	76,6			
Not in fear of activism	23,4			
Age group		12,222*	3	0,060
18–29	17,6			
30–49	21,3			
50–64	18,4			
65+	14,2			
Gender		1,539	1	0,023

(*Continued*)

Appendix B (Continued).

Men	17,1			
Women	19,1			
Employees		22,200*	1	0,100
Have employees	23,9			
Do not have employees	15,5			
Size of operation		46,417*	2	0,138
Small operation	10,5			
Medium operation	17,8			
Large operation	27,9			
Reduced trust in strangers				
Characteristics	**% agrees with "Activism has reduced my trust in strangers"**	**χ^2-statistic**	**Degrees of freedom**	**Cramer's V**
Fear of activism		602,416 *	1	0,460
In fear of activism	76,9			
Not in fear of activism	27,8			
Age group		42,174*	3	0,129
18–29	51,9			
30–49	51,1			
50–64	41,1			
65+	33,2			
Gender		0,105	1	0,006
Men	42,5			
Women	43,2			
Employees		33,014*	1	0,120
Have employees	52,1			
Do not have employees	39,2			
Size of operation		51,930*	2	0,150
Small operation	37,1			
Medium operation	50,2			
Large operation	43,1			
Children affected				
Characteristics	**% agrees with "My children are affected negatively"**	**χ^2-statistic**	**Degrees of freedom**	**Cramer's V**
Fear of activism		431,763*	1	0,414
In fear of activism	32,4			
Not in fear of activism	3,1			
Age group		15,977*	3	0,086
18–29	7,5			
30–49	15,1			
50–64	10,1			
65+	8,0			
Gender		0,709	1	0,017
Men	11,8			
Women	10,5			
Employees		24,596*	1	0,112
Have employees	16,8			
Do not have employees	9,1			
Size of operation		47,989*	2	0,156
Small operation	7,5			
Medium operation	16,1			
Large operation	21,3			