

# The extent of perceived exposure to economic crime in public and private business: Survey research in Norway

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## ABSTRACT

Half of all finance and insurance firms in Norway report that they are exposed to economic crime, particularly fraud, every year. On the other hand, only eighteen percent in public administration and defense perceive similar exposure to economic crime. However, the estimated fraction of unreported, non-registered economic crime in the country is ninety-four percent. These numbers are some of the results from surveys conducted in Norway in 2005, 2010, and 2023. This article applies the main economic crime categories of fraud, theft, manipulation, and corruption as used by scholars to study the survey results. The corruption category shows the largest gap between perceived exposure and police statistics. Comparison to white-collar crime research indicates higher frequency of theft at the street level and higher frequency of manipulation at the upper echelon. Comparison to future surveys in other countries is encouraged.

## Introduction

The government department of justice in Norway has initiated several studies of the extent of perceived exposure to economic crime in public and private business (Ministry, 2023). The most recent survey was for 2021 published two years later by Vista (2023) that focused on economic crime aimed at businesses and municipalities. Previous surveys were conducted for 2003 and 2008 by Statistics Norway (SSB, 2005, 2010) that focused on organizations as victims of economic crime. All three surveys were concerned with economic crime that could cause harm to victimized public and private organizations.

Based on the surveys, this article addresses the following research question: *How do perceptions of exposure to economic crime vary in public and private business?* By identifying those organizations particularly vulnerable to economic crime, it is possible to recommend priorities in potential harm reduction among victimized businesses. This research is important, both in terms of evidence of magnitude as well as evidence of large versus small extent of perceived exposure to economic crime in public and private business. This bottom-up research is also important as an alternative to traditional top-down research that estimates the magnitude of economic crime as a fraction of the gross national product. This paper makes a contribution to knowledge by reviewing a sequence of three empirical studies addressing the magnitude of exposure to economic crime. The paper describes the current state of this kind of surveys in Norway, and it indicates how such surveys might be improved in future studies.

## Literature review

We are not aware of any similar studies in other countries or any research literature directly addressing the exposure to economic crime in public and private business. We do know of estimates for the magnitude of economic crime in various countries, in particular the magnitude of white-collar crime that refers to a fraction of the total economic crime volume. The magnitude of white-collar crime has been estimated by the National White-Collar Crime Center (Huff et al., 2010) and the Association of Certified Fraud Examiners, which estimates the total annual loss from white-collar crime to be between \$300 and \$660 billion in the United States (Wall-Parker, 2020). Offenders tend to move under the radar making estimates quite unreliable (Williams et al., 2019). In Norway, bottom-up expert elicitation resulted in an estimate that one out of eleven white-collar offenders in the country are caught and brought to justice (Gottschalk and Gunnesdal, 2018).

White-collar criminals are persons of respectability and high social status who commit economic crime in the course of their occupations (Sutherland, 1939, 1983). They tend to have legitimate access to premises and systems to commit and conceal crime (Benson and Simpson, 2018). Some of them are too big to fail and too powerful to jail (Pontell et al., 2014). White-collar criminals are a subgroup of economic criminals characterized by their possibility to abuse trust in occupational positions.

It is possible to compare survey results to be presented in this article with previous empirical studies of white-collar offenders in Norway.

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Between 2009 and 2015, 58 white-collar criminals were sentenced to prison every year. The average amount involved in their crime was NOK 19 million (about USD 2 million). In the total sample for those years, 43% committed fraud, 4% committed theft, 35% committed manipulation, and 18% committed corruption (Gottschalk and Gunnesdal, 2018).

White-collar crime refers to all four categories of fraud, theft, manipulation, and corruption. However, it is a fraction of the total economic crime volume in the offender-based perspective of only including criminals belonging to the elite in society. To be included as white-collar crime, the offender has abused his or her trusted position in a professional setting as defined by Sutherland (1939, 1983) and others (e.g., Benson and Simpson, 2018; Pontell et al., 2014).

Economists tend to estimate the magnitude of the shadow economy when researching economic crime. Such estimates are typically computed by assessing a fraction of each country's gross national product. For example, Schneider et al. (2010) estimated the magnitude and development all over the world, where Norway has a slightly declining shadow economy fraction of the gross national product from 19.2% in 1999 to 18.2% in 2007.

Gottschalk and Gunnesdal (2018) conducted expert elicitations regarding white-collar crime in Norway. Expert elicitation is a systematic approach to include expert insights into the subject as well as insights into the limitations, strengths, and weaknesses of published studies (Kynn, 2008; Slottje et al., 2008). In their expert elicitation of white-collar crime, Gottschalk and Gunnesdal (2018) interviewed an investigative journalist, a bankruptcy lawyer, an internal auditor, three tax authority employees, two bank employees, one police detective, one corruption researcher, two corporate investigators, one corporate investor, one defense lawyer, and one social security employee.

## Research method

Archival analysis of national scope surveys is the method applied in this research. Specifically, the three survey reports (SSB, 2005, 2010; Vista, 2023) represent the empirical basis for the research. However, while the classification of crime categories in these surveys applied various legal codes according to Norwegian criminal law, this research applies the criminological classification into main categories according to Gottschalk (2010) that is already referred to by two hundred scholars (e.g., Kurum, 2023; Meerts, 2023), where the main categories are fraud, theft, manipulation, and corruption. Therefore, the research method starts by reclassifying findings in the surveys into these main categories of economic crime.

But first the task assigned by the department of justice in Norway – the Royal Ministry of Justice and Public Security – has to be presented here. The ministry's responsibility includes prevention, investigation, prosecution, court proceedings, execution of sentences, and return to society. Crime prevention includes acquiring knowledge about trends in crime and the challenges such knowledge presents for the criminal justice chain and the law enforcement sector in general. Knowledge of crime includes the extent of criminal activity, changes in crime, and factors that affect crime in the short and long term, and what works to prevent and combat crime.

The assignment given to survey research institutes like SSB (2005, 2010) and Vista (2023) is to map the extent of economic crime to which private and public enterprises in Norway are exposed. They were also asked to analyze key development features and effects for society, particularly for working life and business development. The ministry as the client for such assignments wants a picture of the actual magnitude of crime. Furthermore, the researchers were encouraged to compare with registered crime rates in order to uncover the magnitude of unreported, non-registered economic crime. The researchers were asked to base their mapping of the extent of economic crime on representative samples (Ministry, 2023).

The first survey by SSB (2005) had a sample of 2000 public and private businesses and achieved a response rate of 92%. The sample was drawn from Statistics Norway's business and enterprise register among those with five or more employees. The deduction basis was made up of a total of 75,845 businesses. Only sole proprietorships and multi-enterprise businesses as register unit type were included in the sample deduction basis. The businesses were stratified into four strata. The main survey followed a pilot survey where the main change was removal of questions regarding computer crime. This was done both on the basis of the experiences from the pilot, to achieve a more comprehensive questionnaire, and to reduce the response burden.

The second survey by SSB (2010) was again a sample of two thousand public and private businesses that achieved a response rate of 94%. For comparison reasons, this survey was very similar to the first survey, including time of the year when the survey was administered. There was a question added about whether respondents consider that information and communication technology was an important tool during the implementation of the survey.

The third survey by Vista (2023) had a sample of 100,000 public and private businesses and achieved a response rate of 8%. While the number of respondents in the Vista (2023) survey was larger, the response rates in the SSB (2005, 2010) surveys were drastically higher. We return to this issue in the discussion section.

The four main categories of economic crime according to Gottschalk (2010) need definitions. Fraud is misrepresentation causing misjudgment inducing somebody to carry out an economic transaction that the person or organization would otherwise not do (Elisha et al., 2020; Maimon et al., 2023). Theft is illegal taking of another's economic property without the victim's consent (Piquero et al., 2021; Reynolds, 2013). Manipulation is to distort the perception of reality so that an economic transaction becomes different from how it otherwise would have been (Demaline, 2023; Gao and Zhang, 2019). Corruption is defined as the giving, requesting, receiving, or accepting of an improper economic benefit related to position, office, or assignment (Aguilera and Vadera, 2008; Artello and Albanese, 2022).

The criminal code and official statistics apply legal categories that are rearranged into the four main categories. For example, fraud includes serious fraud and crime in debt relationships. Theft includes embezzlement. Manipulation includes accounting deviations and tax evasion, while corruption includes the statistics code of price and tender cooperation. These were some of the legal codes by SSB (2005, 2010). Vista (2023) had two new categories of data burglary and financial adultery, which both here are assigned to theft, while the researchers skipped tax evasion.

The ministry was interested in developments over time, so Vista's (2023) considerable deviation from SSB's (2005, 2010) categories seems strange. However, the researchers argued that their classification was based on public statistics and not on the criminal code. Norwegian law has a number of penal clauses regarding economic crime defining fraud, theft, manipulation, and corruption. For example, fraud has seven penal clauses: fraud (§371), serious fraud (§372), minor fraud (§373), negligent fraud (§374), insurance fraud (§375), serious insurance fraud (§376), and fraud-similar actions (§377).

## Research results

In the first survey (SSB, 2005), 22% of responding enterprises reported that they had been exposed to one or several incidents of economic crime in the previous year. Five years later, 17% of responding enterprises reported the same kind of exposure (SSB, 2010). Thirteen years later, 10% of responding enterprises reported the same kind of exposure (Vista, 2023). There seems thus to be a significant decline in perceived exposure to economic crime in public and private businesses in Norway. However, when Vista (2023) focused on enterprises with five or more employees, 17% of responding enterprises reported incidents. Then results become comparable to SSB (2005, 2010) that only

**Table 1**  
Fraction of businesses reporting economic crime categories in the previous year.

#	Category	SSB (2005)	SSB (2010)	Vista (2023)
1	Fraud by misrepresentation	9	7	5
2	Theft by illegal taking	5	4	3
3	Manipulation by distortion	5	4	1
4	Corruption by improper benefit	4	3	4
	TOTAL	22	17	17

surveyed businesses with five or more employees. Therefore, Vista : 6) (2023) stated that they cannot “conclude that there has been a change in the overall magnitude of economic crime against businesses” in recent decades.

In the first survey (SSB, 2005), 8.8% were victims of fraud, 5.2% were victims of theft, 5.2% were victims of manipulation, and 3.6% were victims of corruption. Some respondents were victims of more than one crime category, while 6.2% were victims of economic crime not covered by survey categories. In the second survey (SSB, 2010), where the overall victim share had dropped from 22% to 17%, the decline occurred about equally in all the main categories, making fraud still the most frequent and corruption the least frequent as reported by responding private and public businesses. In the third survey with the group of businesses with five or more employees (Vista, 2023), 5% were victims of fraud, 3% were victims of theft, 0% were victims of manipulation, and 4% were victims of corruption. It thus seems that no conclusion can be drawn regarding change over time in terms of the relative importance of the four economic crime categories, although Table 1 suggests a slight decline in both fraud and theft over time. However, the table has obvious shortcomings since the surveys were not consistent in their items to which businesses responded.

The survey by SSB (2005) distinguished between four groups of victims: industry, trade, service, and public administration. Trade businesses reported the highest frequency of economic crime, where the most frequent crime category was theft in the form of embezzlement. Public administration was second with fraud being the most frequent crime category. Service and industry came third and fourth, both with fraud as the most frequent crime category.

The survey by Vista : 10) (2023) distinguished between twelve groups of victims where finance and insurance companies had the highest fraction of economic crime victims: (1) finance and insurance 41%, (2) shops and repairs 25%, (3) manufacturing and mining 23%, (4) transport and storage 21%, (5) building and construction 21%, (6) accommodation and catering 19%, (7) public administration and defense 18%, (8) service industries 17%, (9) real estate 17%, (10) farming and fishing 16%, (11) education 13%, and (12) health and care 6%.

The survey by SSB (2010) reported victim percentages for the same groups as Vista (2013). They also reported victim percentages for the

same groups from the SSB (2005) that were not originally reported back then. There is thus a chance of ranking and comparing where the rank in Table 2 is determined by the latest survey by Vista (2023). Business sectors like finance and insurance, shops and repairs, and accommodation and catering have high fractions of economic crime. Again however, the table has obvious shortcomings since the surveys were not consistent in their items to which businesses responded.

Nevertheless, Table 2 helps in answering the research question: *How do perceptions of exposure to economic crime vary in public and private business?* Perceptions of exposure to economic crime are at their highest in finance and insurance firms as well as in retail shops and repair shops, while perceptions are at their lowest in education as well as in health and other forms of care. Media reports in 2023 confirmed the frequency of insurance fraud (Riaz, 2023: 21):

More and more people are being caught for insurance fraud. Expensive bags, watches and mobile phones: The insurance industry reports an increase in fraud cases. Tighter finances may be one of the reasons. Anette Grønby Rein at Fremtind insurance believes that tighter finances are one of the reasons why people commit insurance fraud. Man in his 50 s had a single accident with his car and tried to abuse the opportunity to get compensation for old damages.

The apparent normality of insurance fraud has the form of moral deterioration in society because of astronomical amounts (Wu et al., 2023: 469):

The policyholder may commit fraud to gain benefit from the insurance payment by falsely declaring a car stolen or pretending illness (.). Much empirical data indeed indicate that the amount of insurance fraud is astronomical. For instance, it is estimated that the settlement of insurance claim from insurance fraud amounts to US \$18 billion per year in the United States. In Germany, insurance fraud costs property and casualty insurers more than 4 billion Euros annually. The investigated annual loss from insurance fraud is nearly 2 billion pounds in the UK as well. These investigations all indicate the severity of fraud in the insurance market.

The SSB (2005) survey asked about offenders when distinguishing between internal and external offenders. At fraud, 91% of offenders

**Table 2**  
Fraction of businesses reporting economic crime in the previous year.

#	Business Sector	SSB (2005)	SSB (2010)	Vista (2023)
1	Finance and insurance	54	41	41
2	Shops and repairs	27	24	25
3	Manufacturing and mining	20	17	23
4	Transport and storage	22	25	21
5	Building and construction	21	14	21
6	Accommodation and catering	29	26	19
7	Public administration and defense	17	22	18
8	Service industries	15	13	17
9	Real estate	-	-	17
10	Farming and Fishing	-	-	16
11	Education	8	8	13
12	Health and care	12	4	6
-	Information and communication	20	13	-
-	Scientific and technical service	15	13	-
	TOTAL	22	17	17

were external. At embezzlement, 88% of offenders were internal. The researchers reviewed business size and found that larger businesses with more employees are more exposed to economic crime compared to businesses with fewer employees. The researchers asked why incidents were not reported to the police. Respondents said that it was difficult to prove violation of the law, it was important to protect business reputation, police reporting would create more work, there would be no benefit to the business, and the police would close and dismiss cases anyway.

The SSB (2010) survey also asked about offenders when distinguishing between internal and external offenders. At fraud, 86% of offenders were external. At embezzlement, 79% of offenders were internal. The researchers asked what happened to detected offenders. Respondents said that in 70% of the embezzlement incidents, offenders were terminated and fired out of the organization. The researchers asked what businesses do to improve measures against economic crime. The most frequent answer was to improve internal audit, followed by improved accounting systems, and training in current rules and regulations.

Different from the SSB (2005, 2010) surveys, the Vista (2023) survey also addressed economic crime against municipalities in Norway. Again, in this segment of respondents, fraud was the most frequent crime category. Theft by data breaches and embezzlement came second. Vista (2023) also asked about the offenders when distinguishing between internal and external offenders. At fraud, 81% of offenders were external. At embezzlement, 78% of offenders were internal. In terms of detection, fraud was mainly detected by internal audits and controls in management information systems. Vista (2023) researchers interviewed some experts in law and business. The interviewees said that among private and public businesses, there was a cost-benefit consideration regarding prevention and detection of economic crime. Regarding digital attacks for various kinds of economic crime, the interviewees was not confident that executives in attacked businesses had sufficient competence to understand what was going on.

The researchers were encouraged by the Ministry (2023) to compare with registered crime rates in order to uncover the magnitude of unreported, non-registered economic crime. SSB (2005, 2010) did not present registered crime at all. Vista (2023) presented statistics, but without direct comparison to their own survey results. The statistics listed in Table 3 is from the police register for reported crime. Similar to Table 1 for the survey, Table 3 shows the dominant category being fraud. Almost nobody reported corruption to the police.

However, comparison is again problematic, as the statistics in Table 3 includes reporting from both individuals and businesses. The numbers do not add up to the total line in Table 3 as some reported incidents of crime that were not classified in the police register.

A potential estimate of the magnitude of unreported, non-registered economic crime could be derived by responses in the Vista (2023) survey regarding reporting, where 21% of the respondents said that they had reported their incidents. Then non-registered economic crime would be the remaining 79%. However, the percentage of non-registered economic crime in private and public business is probably much larger. For example, for fraud, 5% said they had been victim of this crime category in a population of 100,000 businesses. This would in itself result in 5000 fraud incidents to be reported. Adding to the confusion is the fact that the number of registered businesses in Norway is

647,000. Applying the fraction of 5% results in 32,350 incidents, which far exceeds the number 18,877 in Table 3 that includes both individual and organizational incident reporting.

Furthermore, we know that crime incidents are reported more frequently by individuals than by businesses. In fact, NTAES (2019) estimated that only one out of ten police reports regarding fraud incidents originate from businesses, while nine out of ten reports originate from private citizens. Given this fraction, businesses reported ten percent of the 18,877 incidents in Table 3, that is 1888 incidents. On the other hand, the estimate above of perceived incidents is 32,350 incidents. The unreported, non-registered economic crime in Norwegian public and private businesses then has a fraction of 94%, and thus reported, registered crime would only be 6% that is the 1,888-fraction of 32,350 incidents. This estimate implies that the dark figure – that is the number of unreported for each reported incident – is seventeen (17) since 1888 has to be multiplied by 17.13 to reach 32,350. In comparison, the dark figure for white-collar crime – defined by lack of detection – as estimated by Gottschalk and Gunnesdal (2018) is eleven (11).

Fig. 1 is an attempt to highlight fraud numbers from the three tables. Fraud in the statistics register in Table 3 went first up and then down. That is the top line in Fig. 1. Fraud in the finance and insurance firms according to surveys in Table 2 went down and then stayed stable. That is the middle line in Fig. 1. Overall fraud according to the surveys in Table 1 went down and continued its decline. That is the lower line in Fig. 1. The figure illustrates relative numbers where the starting observations are set at 100. The figure provides some support for suggesting that the fraud trend against public and private businesses show a slight decline over time.

### Discussion

The actual magnitude of crime as reported by SSB (2005, 2010) and Vista (2023) have obvious shortcomings. Answering as victims is very different from answering as offenders or as experts. Therefore, the researchers might have emphasized that they reported perceived exposure to economic crime rather than the actual magnitude of economic crime. Furthermore, the response rate, particularly in the Vista (2023) study, is so low that the dominating fraction of non-responders might indeed be quite different from the minor fraction of responders. For example, those responding might be particularly interested in economic crime, either because they have recently been harmed, or they are proud of their protective measures preventing harm. Statistically speaking, Vista : 15) (2023) argued that “the error margin” is only one percent at a “95% confidence interval”. Another shortcoming emphasized by Vista : 17) (2023) is self-reporting where the survey results cannot reveal “if someone chooses to understate or exaggerate the extent of economic crime” or “if individuals deliberately answer incorrectly if they perceive the questions as sensitive”. An indication of bias is the 21% of the respondents in the Vista (2023) survey claiming that they had reported their incidents, versus reported and registered economic crime estimated at only 6%. The direction of this bias is an indication that respondents have provided an exaggeration of perceived crime from the perspective of being victims.

It is possible to compare survey results with previous empirical studies of white-collar offenders in Norway. Between 2009 and 2015, 58 white-collar criminals were sentenced to prison every year. The average amount involved in their crime was NOK 19 million (about USD 2 million). In the total sample for those years, 43% committed fraud, 4% committed theft, 35% committed manipulation, and 18% committed corruption (Gottschalk and Gunnesdal, 2018). In comparison, the Vista (2023) survey as listed in Table 1 suggests 38% were victims of fraud, 23% were victims of theft, 8% were victims of manipulation, and 31% were victims of corruption. It comes as no surprise that street-level economic criminals commit more theft, while upper-echelon economic criminals commit more manipulation.

**Table 3**  
Number of crime incidents reported to the police.

#	Category	2016	2018	2020
1	Fraud by misrepresentation	19,193	22,094	18,877
2	Theft by illegal taking	3027	3867	2811
3	Manipulation by distortion	2850	2094	1591
4	Corruption by improper benefit	48	39	41
	TOTAL	26,596	29,401	24,401

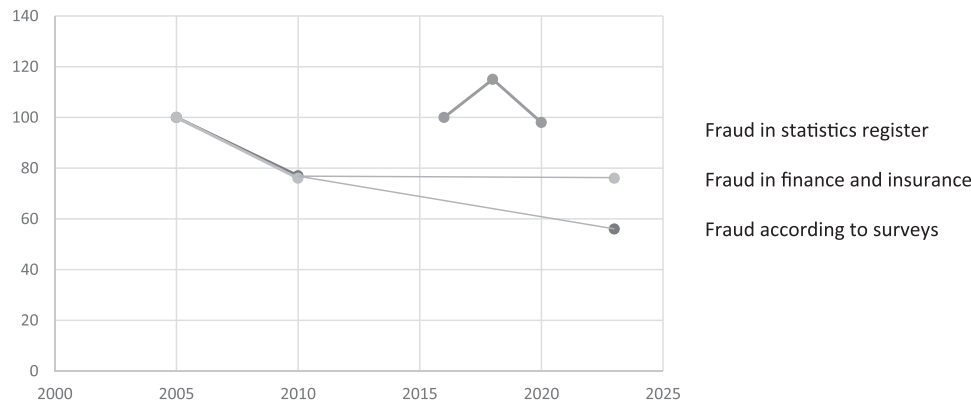


Fig. 1. Indicators of fraud trends.

Gottschalk and Gunnesdal (2018) conducted expert elicitations regarding white-collar crime in Norway. On average, the experts suggested that one out of eleven offenders are brought to justice. Among the four categories, they suggested that offenders of theft are far more often brought to justice (17% of them), and followed by fraudsters (12% of them). Offenders responsible for manipulation are less likely to end up in the criminal justice system (9% of them), and corrupt people are even less likely to be brought to justice (6% of them).

## Conclusion

As evidenced in this article, it is indeed a challenging task to develop a national scope of economic crime that hits public and private businesses. The reviewed survey research indicates that the large majority of organizations avoid being harmed by economic crime in Norway. It also indicates that the magnitude is slightly declining rather than increasing over time. Nevertheless, it is important for law enforcement to address crime where it is very widespread. An example is insurance firms where half of them report being hit by fraud in the previous year. Insurance firms in Norway have established large legal departments where they have to deny insurance payments when there is suspicion of arson, wrecking, or other intentional damage to the insured object to obtain insurance payments. While insurance firms report incidents to the police, where the police are reluctant to investigate, the firms' lawyers typically have to defend the refusals in civil court when sued by the insurance customer. When insurance firms attempt to get rid of deviant customers, such as outlaw biker gangs like Hells Angels to avoid money laundering, insurance firms are denied by Norwegian courts to refuse insurance (e.g., Gulating, 2023). There is thus an issue here of the confusing role of the criminal justice system in reducing crime targeted at, for example, insurance firms in the country.

In the review of the literature, this research failed in finding similar surveys of economic crime perceived by public and private businesses in other countries and regions. The value and importance of the current research will increase immensely when scholars in other places embark on the endeavor to conduct similar surveys in their communities.

The review of the surveys in Norway triggers some reflections on the best practices in designing such surveys. The categories of crime need to be explained more thoroughly to respondents to avoid confusion and perceptions of overlap. The four main categories that are based on scholarly work should be applied in future surveys. A second recommendation is to avoid the category of computer crime as computers are only means of conducting fraud, theft, manipulation, and corruption. A third recommendation relates to response rate where the issue of non-respondents is critical when the response rate is low. A fourth concern is the role of respondents as victims where it is difficult to place them in the role of offenders, while at the same time acknowledging that the bias in responses is dependent on the role assigned to respondents.

## Declaration of Competing Interest

There is no conflict of interest to declare.

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