



Expert Elicitation to Estimate the Size of an Iceberg based on the Tip: Some Methodological Challenges in Determining the Magnitude of White-Collar Crime

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Abstract

Expert elicitation is a research method designed to make estimations in areas where we have no knowledge, only indicators and experiences. By systematic interviews of experts, we tried to estimate the magnitude of white-collar crime in Norway. On our way to a final answer, we were faced with a number of obstacles in our research design. This article reports from our research journey by communicating our learning from methodological challenges when applying expert elicitation to estimate the size of an iceberg based on knowledge about the tip of the iceberg. In particular, participation refusals and response confusions are discussed. This article presents results from a study where we engaged an expert panel to estimate a number of parameters that can determine the total amount of money lost yearly because of white-collar crime.

Keywords: Response Rate; Expert Elicitation; Interview; Survey; Estimation; White-Collar Crime.

Introduction

It is often argued that detected and convicted white-collar criminals only represent the tip of an iceberg in terms of financial crime committed by privileged people in the elite linked to their occupations in society (Benson & Gottschalk, 2015; Langton & Piquero, 2007; Michel et al., 2016). Ever since Sutherland (1940) coined the term white-collar crime, researchers have studied characteristics of white-collar criminals such as their financial motives, their organizational opportunities, and their deviant behaviors. Gottschalk (2016) has suggested integrating these three dimensions into convenience theory as a general explanation of the white-collar crime phenomenon.

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However, little is known about the real magnitude of white-collar crime. The iceberg is an analogy to the fact that only a small amount of the problem is apparent, and when you go beneath the surface, you may see the whole scale of the thing. However, the whole scale of white-collar crime is invisible, since we cannot go beneath the surface (Gottschalk, 2016). While indeed problematic; we want to know the size of the iceberg. We want to know how much damage is caused in financial crime by the elite in society. That is the iceberg we are studying. We believe that the tip of the iceberg is like scratching the surface without knowing what is below.

One approach to estimate the size of the iceberg is expert elicitation. Expert elicitation refers to a systematic approach to synthesize subjective judgments of experts on a topic where there is uncertainty due to lack of data. When a number of experts are interviewed, their accumulated guestimates tend to converge towards numbers that remain stable when more experts are added. Therefore, approximately ten experts from various backgrounds are often sufficient (Heyman & Sailors, 2016; Slottje et al., 2008: 7; Valkenhoef & Tervonen, 2016).

This article presents methodological challenges when expert elicitation was applied to estimate the magnitude of white-collar crime in a country in a year. This article makes a contribution to reflected learning from empirical research. The methodological issues are concerned with recruitment of experts, willingness and reactions from experts, and responses to different ways of representing the iceberg.

This article starts by presenting the method of expert elicitation, followed by sections on white-collar crime and the survey under study. Next, participation refusals and response confusions are discussed. We developed a bottom-up approach to estimate the magnitude of white-collar crime. Based on knowledge of convicted white-collar criminals and knowledge of their crime characteristics, we apply expert elicitation. Expert elicitation refers to a systematic approach to synthesize subjective judgments of experts on a subject where there is uncertainty due to lack of data (Heyman & Sailors, 2016; Meyer & Booker, 2001; Valkenhoef & Tervonen, 2016).

White-Collar Crime

White-collar crime is committed for financial gain in an organizational setting by deviant behavior. The motive for crime is profit that can help avoid threats or help reach desired goals. The location for crime is the organization to which the offender belongs or is associated. The behavior for crime is deviant from normal behavior (Benson & Gottschalk, 2015).

White-collar crime is now synonymous with the full range of financial crime committed by business and government professionals. These kinds of crime are characterized by deceit, concealment, and violation of trust, and are not dependent on the application of threat of physical force or violence. The motivation behind this kind of crime is financial – to obtain or avoid losing money, property, or services or to secure a personal or business advantage. These are not victimless types of crime. White-collar crime is financial offences committed by persons of respectability and high social status in the course of their occupation. It is crime by high-status offenders who are powerful in society, and who abuse their powers for organizational and/or personal gain.

Offenders in white-collar crime belong to the elite in society (Sutherland, 1940). Most people in society do not have an opportunity to commit white-collar crime. Most people may be able to commit financial crime, but they are not in a position to commit white-

collar crime. Only the elite in society have an opportunity to abuse trust in an organizational setting. Examples of elite members include business entrepreneurs, market investors, executive managers, department heads and professionals such as lawyers and doctors.

The typical profile of a white-collar criminal includes the following attributes (Gottschalk, 2016):

- The person has high social status and considerable influence, enjoying respect and trust, and belongs to the elite.
- The elite have generally more knowledge, money and prestige, and occupy higher positions than others in the population.
- Privileges and authority by the elite are often not visible or transparent, but nevertheless known to everybody.
- The elite can be found in business, public administration, politics, congregations and many other sectors in society.
- Elite is a minority that behaves as an authority towards others.
- The person is often wealthy and does not really need crime income to live a good life.
- The person is typically well educated and connects to important networks of partners and friends.
- The person exploits his or her position to commit financial crime.
- The person does not look at himself or herself as a criminal, but rather as a community builder who applies personal rules for own behavior.
- The person may be in a position that makes the police reluctant to initiate a crime investigation.
- The person has access to resources that enable involvement of top defense attorneys, and can behave in court in a manner that creates sympathy among the general public, partly because the defendant belongs to the upper class similar to the judge, the prosecutor and the attorney.

Empirical Sample

We know how many white-collar criminals who are sentenced to prison every year in Norway. We know the amount of money involved in their crime. Based on this knowledge, is it possible to estimate the total magnitude of white-collar crime in the country? We tried to recruit an expert panel to estimate a number of parameters that can determine the total amount of money lost yearly because of white-collar crime. Six estimation techniques were applied in the expert panel: total dark figure, groups of offenders, groups of offences, groups of victims, gender, and total crime.

We know that 58 white-collar criminals are sentenced to prison every year in Norway (Gottschalk, 2016). We know that the amount of money involved in their crime is 12 million Norwegian kroner (approximately \$1.5 million) per person on average. Thus, the total magnitude of convicted white-collar crime is 696 million Norwegian kroner (approximately \$87 million). With a population of 5 million inhabitants as compared to the United States with 321 million inhabitants, the equivalent of \$87 million detected in Norway would be \$5.6 billion in the United States. If, for example, the iceberg is assumed to be twenty times bigger than the iceberg tip, then the real magnitude of white-collar

crime in Norway would be 13.9 billion Norwegian kroner (approximately \$1.7 billion), and if similar, \$112 billion in the United States.

White-collar criminals can be classified into three categories. First at the top level, we find criminals such as executives and lawyers. Next at the middle level, we find criminals such as investors and accounting managers. Finally at the basic level, we find criminals such as accounting clerks and carpenters. In the total sample of 405 convicted white-collar criminals in Norway from 2009 to 2015, there are 28.5% in category 1, 46.2% in category 2 and 25.3% in category 3. The amount of money involved in the top level group is much bigger than in group 2, which is again bigger than group 3.

Another way of classifying white-collar crime is into crime categories. We make distinctions between four main categories of crime (Benson & Gottschalk, 2016):

- *Fraud*: The intentional perversion of truth for the purpose of inducing another in reliance upon it to part with some valuable thing belonging to him or to surrender a legal right. Example: False documents to achieve bank financing.
- *Theft*: The illegal taking of another person's, group's or organization's property without the victim's consent. Example: Executive takes corporate art works home.
- *Manipulation*: The means of gaining illegal control or influence over others' activities, means, and results. Example: Accounting misrepresentation to achieve tax evasion.
- *Corruption*: The giving, requesting, receiving, or accepting of an improper advantage related to a position, office, or assignment. Example: Procurement executive receives a bribe from a vendor.

In the sample of 405 convicts, 42.6% committed fraud, 4.2% committed theft, 35.3% committed manipulation, and 17.9% committed corruption. In cases of fraud, the average amount of money involved is much larger than in the other categories.

A third way of classifying white-collar crime is according to categories of victims. We know that 28% victimized their employers, 21% victimized the internal revenue service, 17% victimized customers, 14% victimized banks, 7% victimized shareholders, while 13% victimized others. The amount of money involved in crime is larger for bank fraud and tax evasion than at crime against employers, customers and shareholders.

A fourth and final categorization is female versus male criminals. Among the convicts, 7.6% were women, while 92.4% were men. The average amount of money involved in crime was much larger for male than for female offenders.

These breakdowns of our empirical sample enable experts to indicate a number of probabilities for the iceberg depending on criminal level, criminal type, victim group and gender. Our ambition as researchers was to apply a number of these breakdowns to arrive at sound estimates from each expert and then accumulate those estimates for all experts. However, this was indeed problematic.

Participation Selection

In expert elicitation, an early methodological step involves identification of experts in the subject area. An expert is anyone especially knowledgeable in the field and at the level of detail being elicited. Meyer and Booker (2001) distinguish between two types of expertise: substantive and normative. Substantive expertise comes from the expert's experience in the field in question. Normative expertise is knowledge related to the use of

the response mode. The response mode is the form in which the expert is asked to give a judgment.

Initially, we defined experts to be persons who have contributed to detection of white-collar crime. In the sample of 405 convicts, Gottschalk (2016) identified the sources of detection as follows:

1. Journalists detected 101 offenders (25%) – 4 respondents.
2. Victims detected 52 offenders (13%) – 2 respondents.
3. Bankruptcy auditors detected 45 offenders (11%) – 2 respondents.
4. Internal auditors detected 45 offenders (11%) – 2 respondents.
5. Internal revenue service employees detected 25 offenders (6%) – 1 respondent.
6. Bank executives detected 18 offenders (4%) – 1 respondent.
7. External auditors detected 18 offenders (4%) – 1 respondent.
8. Police officers detected 9 offenders (2%) – 1 respondent.
9. Stock exchange executives detected 4 offenders (1%) – 1 respondent.
10. Others detected 88 offenders (22%) – 4 respondents.

We selected respondents relative to the sources of detection as listed above. We selected 4 journalists, 4 others, 2 victims, etc. The total number of respondents is 19 experts that should cover the whole range of detection sources.

We defined these individuals as experts, and we recruited individuals from these categories for expert elicitation. It is a diverse range of experts, as recommended by Meyer and Booker (2001), so that the problem of estimating the magnitude of white-collar crime is likely to be thoroughly considered from many viewpoints. Diversity of participants is one way to minimize the influence of a single individual.

We developed a questionnaire for the experts and planned to apply the survey in two steps. First, an email was sent to experts informing them about the attached questionnaire and telling them that they would be contacted for a phone interview by a researcher a few days later. During the phone interview, experts had the opportunity to ask the researcher for clarification and discuss issues. While they were talking on the telephone, the researcher filled in the questionnaire based on the responses from the expert. The combination of email and phone as two different communication channels are considered a feasible response mode in line with normative expertise.

Participation Refusal

However, a number of experts refused to participate in our interviews. It is interesting to study why they said no to contribute their expertise and what background they have.

1. *Journalist*: “I have nothing against contributing knowledge and experience on economic crime. And I think including the term “white-collar crime” is a little old-fashioned today when the greatest threat to the Norwegian welfare state might be in complex, organized labor market crime, in an unattractive alliance between white-collar offenders and others. The classic white-collar offender is only one among many players in economic crime. But I do not want to guess percentages. I think it is not serious.”

This refusal is interesting in two perspectives. First, the journalist considers white-collar crime to be an old-fashioned term. We disagree, because ever since Sutherland (1940) coined this term, the criminal justice system as well as society has found it problematic to prosecute offenders in this category. This indicates that white-collar offences are still an

unresolved issue in most countries. Next, the journalist does not want to guess percentages and think it is not serious. We disagree again, as expert elicitation is a systematic approach beyond pure guess work.

2. *Victim*: “My experience of such crime is more specific and related to one single case, and it gives me no foundation to consider the topic in general terms”.
Second victim (public sector manager): “We do not see it as appropriate to attend, but wish you good luck with work and dedication in this field.”

This seems indeed to be a relevant objection to expert classification, since a victim typically only once has experienced white-collar crime. We know that generalizing from only one observation is not justifiable in research.

3. *Bankruptcy auditor*: We have no case of refusal.
4. *Internal auditor*: We have no case of refusal.
5. *Internal revenue service employee*: We have no case of refusal.
6. *Bank executive*: “I do not have time, and I am generally unwilling to participate”.
Second bank executive: “I work in practice not with white-collar crime and am not qualified to answer the questions”.

Some organizations are very hierarchical, where executives are afraid of participating in external surveys. This might be the case for bank executives who are not at the top level in the organization. However, when the bank executives some days later were contacted by someone on the project team they know, and the person they know referred to previous contacts, then both bank executives changed their mind and agreed to participate. The first bank executive responded: “My initial answer was honest. We only deal with irregularities and misconduct among bank employees, and there are hardly any financial crime cases. I have not been able to build competence in this area. But nevertheless, I shall involve more experienced colleagues and answer questions at the best of my abilities”. The second bank executive responded: “Since you are the one asking. OK.”

7. *External auditor*: “I am on a mission abroad”. Second external auditor: ““I am basically benevolent, but completely saddled until Christmas”.

This is an interesting excuse, since it is very often accepted, although most busy people have more spare time while abroad than at home. Therefore, it is likely that the potential respondent found an excuse for disinterest that he thought would be acceptable to the interviewer. The second external auditor is interesting as well, since it is the work load that is communicated as the reason for not participating in the survey.

8. *Police officer*: “I am in a hurry and do not want to prioritize this”.

Again, this is an interesting response, since police officers normally would like more attention directed at their work of combating crime.

9. *Stock exchange executive*: “I thank you for asking, but do not want to participate in the survey”.

We can only speculate on this refusal. One explanation might be that the stock exchange is sensitive to all kinds of issues and therefore refrain from participation. Another reason might be that Manifest Center for Social Analysis is considered a left-wing think tank that can be perceived as negative to a capitalist stock exchange as such.

10. *Other*: We have no case of refusal.

Meyer and Booker (2001) argue that it is important to recruit a wide range of experts. Maybe our range of experts might be expanded to politicians who work in the criminal justice area, and whistleblowers who have reported white-collar offences, although they

may have the same problem similar to victims, i.e. only one observation. A third group of experts might be attorneys who practice white-collar crime defense. A fourth group might be convicts, but again, they only know their own story, just like victims and whistleblowers. A fifth and most relevant group of experts is private investigators who conduct fraud examinations. Often, these financial crime specialists are former police detectives who have considerable experience from law enforcement, financial crime cases, and white-collar criminal behavior.

Furthermore, Meyer and Booker (2001) argue that grooming potential experts should not be handled easily. Maybe we fell into this trap by starting with an email from Manifest Center of Social Analysis. Emails do not easily create commitment, and Manifest is considered a left-wing think tank.

Manifest is in fact a player in the Norwegian public with a clear affiliation not only to the social democratic but also to the socialist side in the community. Grassroots trade unions around the country appreciate the think tank, and they provide a lot of financial support.

Meyer and Booker (2001: 90) stress the importance of “motivating the experts through communication of intrinsic aspects of the project”. In their experience, experts have responded well to these motivators: recognition, experiencing something new and different, and need for meaning. Meyer and Booker (2001: 181) also stress common difficulties such as “experts resist the elicitation process or resist giving judgments under uncertainty”.

Response Confusion

The first pilot study participant – an executive at the internal revenue service in Norway – was faced with issues where she was to answer questions about both the total magnitude as well as groups of the total of white-collar crime occurrences. When she was asked about the total, she said that 5% of all white-collar crime is detected. However, when she was asked about groups, then most percentages were far above five percent, thus creating an average above five percent. For example for groups of criminals, she estimated 15 %, 30 % and 4 %. Similarly for categories of crime: fraud 5 %, theft 60 %, manipulation 10 %, and corruption 5 %. The same occurred for groups of victims: employer 20 %, bank 10 %, tax 10 %, customer 5 %, shareholder 40 %, and others 5 %. As a consequence, the interviewer needed in subsequent interviews to remind the respondent of the overall estimate when the respondent was asked for subsequent estimates for groups of criminals, categories of crime and groups of victims.

Maybe the mistake by the interviewer was not related to what we ask experts to assess, but how we ask it. Kynn (2008) suggests that this appears to have gone largely unnoticed by the statistical literature. The psychological aspects that are involved in eliciting probabilities have been largely ignored.

An interesting issue is whether or not – or to what extent – responding experts were able to keep track of their estimates during the interview. This issue can be exemplified by one of the experts who seemed to be on track during the interview by ending up with 14, 16, 11, 15 and 9 billion Norwegian kroner respectively. However, a surprise came at the end, where the expert was asked for the total magnitude of white-collar crime. The expert responded that to keep consistent with previous answers, the answer would be 3 billion Norwegian kroner. From a methodological point of view this is fine, as there is no reason

to argue that respondents should be able to keep track of previous estimates to keep consistent during the interview.

As illustrated by the two bank executives who first refused to participate, and then changed their minds as they were contacted by someone they knew on the project team, recruitment of experts can be influenced by previous relationships. The one researcher on the project team who they knew, is also quite well-known in Norway, because he frequently comments on white-collar crime cases in the media. This phenomenon caused even more experts to change their minds or to contribute the name of an alternative expert.

For example, one bankruptcy lawyer responded:

Nice to hear from you, and I hope we can have a chat over a coffee or lunch about your stay in the United States. I currently receive inquiries from both domestic and abroad to participate in various surveys and the like, and I have therefore set a limit to what I can participate in. I was not aware that the inquiry received regarding white-collar crime is something you are involved in. Of course I want to prioritize this and will set aside time for the interview.

Research Method

We apply a bottom-up approach by expert elicitation for estimating the magnitude of white-collar crime. An alternative approach might be a top-down approach by econometric modeling where it is assumed that traces and evidence of white-collar crime can be found in the macro economy. An econometric modeling approach is the MIMIC method (multiple indicators multiple causes), which is frequently applied to estimate the magnitude of the underground economy in society. It is an indirect approach using macroeconomic indicators as a proxy for the size of the underground economy (Imamoglu, 2016). MIMIC has been exposed to serious criticism. For example, Breusch (2005) argues that the method is subjective and pliable in practice and thus unfit for the purpose of estimating unknown sizes such as the magnitude of the underground economy.

We developed a questionnaire for the experts and applied the survey in two steps. First, an email was sent to experts informing them about the attached questionnaire and telling them that they would be contacted for a phone interview by a researcher a few days later. During the phone interview, experts had the opportunity to ask the researcher for clarification and discuss issues. While they were talking on the telephone, the researcher filled in the questionnaire based on the responses from the expert. The combination of mail and phone as two different communication channels are considered a feasible response mode in line with normative expertise.

The purpose of eliciting and analyzing expert judgment is to use all available information to make expert judgment inference, which is different from statistical inference. Statistical inference means that conclusions about the population can be established when the sample is randomly drawn for the population. Expert judgment inference means that experts' estimates represent the state of knowledge. It represents previously unknown and undocumented information. We can interpret experts' information in a general inference manner in conjunction with any assumptions or other information elements available. The limited ability to infer does not mean that expert judgments are not valid data. Expert judgments are indeed valid data in that it must be carefully gathered, analyzed and interpreted (Meyer & Booker, 2001).

In the survey itself, we asked respondents to what extent they consider themselves to be experts. They were to reply on a scale from little knowledge (1) to significant knowledge (10) about white-collar crime. The average response was 7, ranging from 3 to 10. Another question in the survey related to expertise asked for the number of years the respondent had been occupied with the topic of financial crime. The average response was 16 years, ranging from 1 year to 31 years.

Results

We were not completely successful in obtaining respondents as indicated in the previous section for several reasons. First, the category of victims represents respondents who have only experienced white-collar crime once. The category was excluded, because victim experience is unfit for generalization. Next, some potential experts refused to participate because of their role. An example is executives at the stock exchange. Furthermore, several potential experts responded negatively to the email request. The response rate is not calculated, since it is the distribution of experts rather than the participation rate among experts that is critical to this research. We obtained the following final sample of respondents that we find satisfactory in terms of diversity among experts (Expert percentage estimate of white-collar criminals convicted):

- An investigative journalist (8% convicted)
- A bankruptcy lawyer (3% convicted)
- An internal auditor (5% convicted)
- A tax clerk (18% convicted)
- A tax clerk (5% convicted)
- A tax clerk (5% convicted)
- A bank manager (10% convicted)
- A bank manager (3% convicted)
- A police investigator (25% convicted)
- A corruption researcher (5% convicted)
- A private investigator (20% convicted)
- A private investigator (5% convicted)
- A corporate investor (30% convicted)
- A defense lawyer (10% convicted)
- A social security manager (3% convicted)

The first question was concerned with the fraction of white-collar criminals convicted. Average response was 10%, which implies that respondents believe one out of ten criminals are caught and brought to justice. However, as becomes evident in the six remaining estimation techniques, we cannot simply multiply detected money amount with this percentage alone.

The next question was concerned with three levels of white-collar criminals. The top level consists of offenders such as criminal executives and criminal attorneys. The next level is concerned with offenders such as criminal investors and criminal financial managers. The third and final level is concerned with offenders such as criminal accountants and criminal craftsmen. Respondents suggest that 10% of offenders at level 1 are caught and brought to justice, 13% of level 2 offenders are caught and brought to justice, while 14% of level 3 offenders are caught and brought to justice. These estimates

are interesting, but they do obviously not match the overall estimate of 10% as reported above. Therefore, our approach is to average all seven estimation techniques.

Table 1. Seven Expert Estimations of White-Collar Crime Magnitude

| # | Estimation technique for magnitude of white-collar crime | Fraction of offender population | Magnitude of white-collar crime (Billion NOK) |
|---|---|--|---|
| 1 | Fraction of total | 10% | 13.4 |
| 2 | Corrected fraction | 10% | 13.2 |
| 3 | <ul style="list-style-type: none"> • Level 1 • Level 2 • Level 3 Groups of offenders | 10% 13% 14% | 13.3 |
| 4 | <ul style="list-style-type: none"> • Fraud • Theft • Manipulation • Corruption Groups of offences | 13% 19% 11% 8% | 13.2 |
| 5 | <ul style="list-style-type: none"> • Employer • Tax • Bank • Customer • Shareholder • Other Groups of victims | 10% 15% 16% 10% 10% 10% | 14.6 |
| 6 | <ul style="list-style-type: none"> • Female • Male Gender | 8% 11% | 11.9 |
| 7 | Total amount | | 12.7 |
| | Average magnitude | | 13.2 |

Third question was concerned with four categories of crime: fraud, theft, manipulation, and corruption. Experts believe that conviction rate for fraud is 13%, for theft 19%, for manipulation 11% and for corruption 8%. Experts believe that corrupt people are the most difficult ones to bring to justice. One possible explanation is that both parties – both briber and bribed – have an interest in keeping the criminal act a secret forever.

Fourth question was concerned with victims: employer, tax, customer, bank, shareholder, and others. Experts believe 10% of employer offenders are convicted, 15% of tax offenders are convicted, 10% of customer offenders are convicted, 16% of bank offenders are convicted, 10% of shareholder offenders are convicted, while 10% of other offenders are convicted.

Question 5 was the gender perspective, where experts believe that men are more easily caught. They estimate men at 8% and women at 11% conviction rate.

Question 6 is concerned with the size of white-collar crime that is never detected: Do white-collar criminals, who are never caught, commit crime for a larger or smaller sum of money compared to those who are caught? Our experts conclude that there are no good reasons to believe that crime not detected involves more or less money than those detected.

Finally in question seven, experts were asked whether they believed whether the amount of money involved in white-collar crime among convicted offenders is different from not convicted offenders. On average, experts responded that the amount of money is smaller for convicts than for non-convicts.

Based on these different ways of expert elicitation in seven questions, we can now calculate the magnitude of white collar crime in seven different ways, as listed in Table 1. Each estimate is corrected for the relative size of crime as well as inflation.

Discussion

Norway has a population of 5 million inhabitants compared to 321 million in the United States. If the same magnitude was assumed in Norway and the United States, then the magnitude of white-collar crime in the United States would be \$106 billion.

Our bottom-up approach by expert elicitation resulted in an estimate of white-collar crime in Norway. The estimate is ten times larger than the actual convicted white-collar criminals, which implies that 9 out of 10 white-collar criminals are never brought to justice in Norway. The amount of money lost for employers, tax authorities, banks, customers, shareholders and others amount to thirteen billion Norwegian kroner (\$1.7 billion) annually. The size of the iceberg is ten times larger than the tip of the iceberg.

This result may come as a surprise to the general public in Norway. When the leading Norwegian financial newspaper, *DagensNæringsliv*, some years ago published that law enforcement officials in Norway believe that 1 out of 4 white-collar criminals are caught and brought to justice, the reaction was that this is unacceptable. Now, some years later, experts believe that the relationship is that only 1 out of 10 white-collar criminals are caught and brought to justice.

Meyer and Booker (2001) argue that it is important to recruit a wide range of experts. Maybe our range of experts might be expanded to politicians who work in the criminal justice area, and whistleblowers who have reported white-collar offences, although they may have the same problem similar to victims, i.e. only one observation. A third group of experts might be attorneys who practice white-collar crime defense. A fourth group might be convicts, but again, they only know their own story, just like victims and whistleblowers. A fifth and most relevant group of experts is private investigators who conduct fraud examinations. Often, these financial crime specialists are former police detectives who have considerable experience from law enforcement, financial crime cases, and white-collar criminal behavior.

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Future research may improve the rigor by distinguishing between policing of white-collar crime and its actual incident. There is also a need for more critical or reflective discussion of our results, which may flow from the method and data produced through it.

Conclusion

This article has described some obstacles and challenges in criminology. Specifically, it has addressed methodological challenges when attempting to determine the magnitude of white-collar crime based on expert elicitation. Recruitment of experts was indeed a challenge, and it seems that the two-stage approach of first email and next phone interview is not very well suited. Only when knowledge of one of the famous researchers became apparent to potential respondents, then the response rate increased dramatically.

We have applied expert elicitation to estimate the amount of money lost in white-collar crime every year in Norway. Experts were identified based on their knowledge of the subject as well as their involvement in detection of criminals. The panel of experts was asked to estimate the magnitude of white-collar crime in seven different procedures. Although there is some variation in procedure results, the average of 13.2 billion Norwegian kroner (\$1.7 billion) seems to be a significant empirical result.

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