

An Analysis of the Characteristics of Victims of Special Fraud

Eriko Musashi^{*}, Hiroyuki Maruyama^{*},
Takaaki Hosoda^{*}

Abstract

There are various crimes that threaten our daily lives. Among them, special fraud, in which criminals impersonate family members, deceive victims, and demand money from them, has become a problem. Although the number of special frauds has been on the decline since its peak in 1997, the number of victims has not dissipated. The government, police, financial institutions, and others are cooperating to take various measures. However, at present, many people are easily deceived. Therefore, this study aims to clarify the awareness of victims based on a questionnaire survey of victims and those who escaped being victimized.

Keywords: Special fraud, Awareness of damage, Information on special fraud.

1 Introduction

Crime is a major threat, and among the many crimes experienced, special fraud is one that people are most likely to encounter in their daily life.

Various researchers have been investigating the prevention of special fraud. In the legal field, researchers have been studying the specific crimes of special fraud, and in psychology, researchers have been investigating the psychological aspects of the perpetrators and victims of special fraud. In addition, in informatics and engineering, researchers have been considering the use of Artificial Intelligence (AI) to prevent special fraud. In this way, research is being conducted in multiple areas and using an interdisciplinary approach.

For example, in jurisprudence, Maruyama's study examines the scope of fraud charges, mainly focusing on the special fraud "perpetrator" and the scope of application of fraud charges [1]. Special fraud is a crime that is systematically conducted and involves multiple people, including those who plan the fraud, those who call the victim, and those who receive money from the victim (commonly known as the recipient). This means that there are often many people involved in a fraud crime. Furthermore, in recent years, the "deceived pretending operation" has become a countermeasure against special fraud in an attempt to eradicate it. Similarly, Oba positions special fraud as a serious criminal justice issue and discusses the need for punishment for the terminal recipients of special fraud organizations. However, there are many cases where an organization receives money from a victim without telling the recipient about the fraudulent activity. Therefore, Oba focuses on the proof of deliberate recipient actions and considers how to explore the recipient's perceptions of fraud, using actual judgments as examples [2].

^{*} Advanced Institute for Industrial Technology, Tokyo, Japan

Special fraud is defined as crime in which perpetrators deceive victims by calling or sending postcards and other correspondence, claiming to be their relatives or employees of public institutions to make them believe that they can receive cash, cash cards, or refunds for medical expenses, among other valuable items; the perpetrators then get the victims to operate ATMs to unknowingly transfer money into the perpetrators' accounts. Special fraud is classified into 10 categories: Oleore fraud, savings fraud, fictitious billing fraud, refund fraud, loan guarantee fraud, financial product fraud, gambling fraud, social solicitation fraud, other special fraud, and cash card fraud [3].

Regarding research focusing on the special fraud "victim," Hatta has investigated the brain function of middle-aged and older adults, common victims of special fraud, and conducted a study on the relationship between higher brain function, trust, and susceptibility to deception [4]. Higher brain function refers to various functions performed in the brain such as language, action, perceptual cognition, memory, attention, judgment, and emotion [5]. As a result of Hatta's analysis of the relationship between trust in others and susceptibility to deception, it was found that those who have been deceived are more distrustful than those who have not; furthermore, those who feel they are more likely to be deceived have stronger distrust than those who do not, and as a result, distrust is associated with susceptibility to deception [4]. In addition, to properly judge whether others can be trusted, sound brain functions, such as attention to others and memory of accumulating language and information in communication, are required. Hatta has further stated that there is a correlation between proper judgment as to whether others can be trusted and higher brain function; however, when age is included as a variable, there is no relationship between trust and higher brain function, and it is concluded that another factor needs to be considered regarding the susceptibility to deception in middle-aged and older adults [4].

There are two main research approaches used to study conventional special fraud. One is deterrence by appropriate punishment for the special fraud "special fraud perpetrator". The other is an approach to prevent special fraud, due to its criminal nature and its frequent targeting of older adults.

Among them, the authors have analyzed the victims of special fraud and why they were susceptible to the crime through case studies of victims using the dual process theory from cognitive psychology. As a result, it has been clarified that it is possible to analyze the tendency of people to be victims of special fraud. When applied to past damage cases, it is possible to fully explain the reason for the damage.

In this way, various studies on the perpetrators and victims of special fraud have been conducted, however, all still aim to eliminate the damage caused by this type of crime. Therefore, it is important to clarify and categorize the consciousness and impressions of perpetrators and victims.

Therefore, this study will clarify the victim's consciousness based on the victim's questionnaire information held by the Shimane Prefectural Police and the questionnaire information on special fraud in Yokohama City

2 Victim Characteristics

This study aims to clarify the awareness held by victims. First, we will summarize the number of cases of special fraud and the characteristics of victims based on data from the Japanese Police Agency .

2.1 Incidence of Special Fraud

The situation of the occurrence of special fraud in Japan is described. The number of cases of special frauds peaked at 18,212 in 1997 and has been on a downward trend, reaching 13,550 in 2000. The amount of damage similarly peaked at 56.55 billion yen in 1994, and has been on a downward trend, reaching 28.52 billion yen in 2000. Although both the number of cases and the amount of damage have been decreasing since 2017, the number of victims of special frauds has not dissipated [6]. Furthermore, while the overall number of recognized cases of special fraud is decreasing, the percentage of older adult victims has been increasing, from 77.0% in 2015 to 85.7% in 2020 [7].

2.2 Survey of Special Fraud Victims

The National Police Agency conducted a survey on special fraud victimization from August 1 to November 30, 2018 [6]. The respondents included 354 victims, 187 persons who were not victimized with the cooperation of businesses (financial institution staff, delivery companies, convenience store clerks, etc.), 130 persons who were not victimized because their family or relatives detected the crime, and 428 persons who detected the crime themselves.

To understand victims' awareness of special fraud and their living environments, a questionnaire survey conducted by the Japanese Police Agency was conducted on the possibility of being victimized and whether they had family members living with them.

The following is a summary of the characteristics of those who were victimized and those who were not victimized, based on the total results of the responses [6].

2.2.1 Awareness of damage

One of the questions asked respondents what they had thought about the possibility of becoming a victim of special fraud before receiving the deceptive phone call or e-mail. The results showed that of those who answered "I thought I would not be a victim," 78.2% were those who had actually been victimized, and 56.8% were those who had detected the fraud themselves. In addition, among those who were victimized, 95.1% answered "I thought I would not be victimized" or "I rather thought I would not be victimized." When asked why they thought that way, 38.9% of the self-non-observers answered, "I thought it was none of my business." Conversely, when the same question was asked to the 85.1% of those who answered, "I thought I would not be a victim" or "If anything, I thought I would not be a victim," 46.4% answered, "Because I was confident that I would not be cheated," and 40.1% answered, "Because I knew the details of how the fraud works." From these results, the study drew the following conclusions. Both victims and those who self-identified as victims selected "I was confident that I would not be deceived" the most, however those who self-identified as victims selected "I knew the details of the fraud" the second most, indicating a difference in awareness between the two groups. This difference between the two groups is further evident as 3.9% of the victims and 11.5% of the self-identified chose "Because I had already taken countermeasures," indicating a difference in awareness. For this reason, many victims thought that they would not suffer any damage compared to self-identified. Furthermore, as a result, it was found that many victims tend not to take measures.

2.2.2 Status of damage prevention measures

One of the questions asked about the damage prevention measures individuals had taken prior to receiving the deceptive phone call or e-mail, as described in the questionnaire. Fig. 1 shows the results of those who answered, "I did not take any measures." It can be seen that those who self-identified took the most measures.

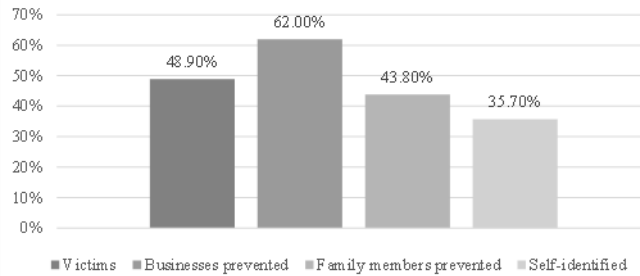


Figure 1: Percentage of people who have not taken measures

2.2.3 Gathering information on special fraud

One of the questions asked respondents where they had seen or heard information about special fraud in the past year prior to receiving the deceptive call or e-mail. Candidate responses were in a multiple-choice form including: TV/radio publicity; newspaper/magazine publicity; official publicity such as neighborhood association circulars; and poster/signboard postings. Confirming the aggregate results, 85% or more of the respondents in all groups gathered information through TV/radio publicity. In addition, 50% of the respondents indicated that they collected information from newspaper/magazine publicity, neighborhood association circulars, and other sources. There was no difference in the content of the responses for each group. It was found that many people collected information on special frauds from various media sources. Fukuhara used the phenomenon known as "information overload" in behavioral economics as an example of how to convey information on special frauds, noting that if the total volume of information becomes too large in an attempt to include detailed and accurate specific information, the recipients of the information may abandon or postpone obtaining the information [8]. The report concurs this phenomenon by outlining that the recipient of the information may abandon or postpone obtaining the information if the total volume is too large in an effort to include all details and accuracy. Information on special fraud is intended to alert the public and tends to include a large amount of information that introduces case studies and explains the occurrence of events. This suggests that among those who reported seeing or hearing about special fraud, there are differences in how they receive the information after being exposed to it.

2.2.4 Receipts of special fraud calls

One of the questions asks whether and how often individuals have received special fraud phone calls or pushy sales calls in the past year before receiving the deceptive call or e-mail. Candidate responses were "more than 3 times a week," "1–2 times a week," "2–3 times a

month,” “less than once a month,” and “almost never.” The response results show that about 70% of all groups selected “rarely received” and that there were no significant differences in the percentages of the other responses, indicating that there were no differences between groups.

2.2.5 Recognition of special fraud tactics

An item in the questionnaire asked respondents to indicate their awareness of special fraud tactics before receiving the deceptive phone call or e-mail. More than 95% of all groups were aware of Oleore fraud, and there were no significant differences in the other items depending on the victimization status. The results of the responses are shown in Fig. 2.

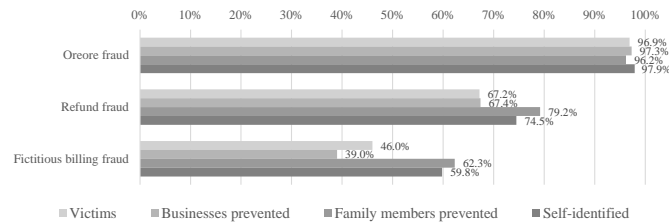


Figure 2: Recognition rate of special fraud tactics

3 Survey Analysis

In this study, we analyze in more detail the characteristics of those who were victims of special frauds, based on the responses of each victim. The purpose of this study is to clarify the awareness of special fraud and which characteristics make people more or less likely to be victims of this crime. Data were analyzed from questionnaires conducted by the Shimane Prefectural Police and the City of Yokohama.

3.1 Questionnaire Survey by Shimane Prefectural Police

The Shimane Prefectural Police conducted a survey of victims of special fraud in 2020, asking them about their feelings toward special fraud before they became victims and the damage prevention measures they had previously taken. Based on the results of the analysis, the prefectural government widely disseminates the measures taken to prevent fraud to the public.

In previous research it has been found that people who feel that they will not be victimized or that they will be fine are more likely to become victims of special fraud. In a survey conducted by the Metropolitan Police Department in 2012 among victims of special fraud, 92% of victims answered “I thought I was fine” or “I had never thought about it” [9]. Therefore, we analyzed the attitudes toward special fraud among its victims in Shimane Prefecture to identify the characteristics of those who felt they would not be victimized and those who felt they might be victimized.

3.1.1 Target data

The subject population consisted of 40 persons (27 males and 13 females) who were victims of special fraud in Shimane Prefecture in 2020. The data included the number of household members, special fraud information gathering methods, and awareness of special fraud through a questionnaire survey [10].

3.1.2 Questionnaire items

A total of 21 items, including gender, age, number of people in the household, types of special fraud they knew about before becoming a victim, and their perception of special fraud, were included in the questionnaire.

3.1.3 Analysis Method

The data obtained from the questionnaire survey were analyzed by a two-sample t-test. To the question, "What did you think about special fraud before you became a victim?" respondents were asked to choose one of five categories: (1) I thought I would never be deceived, (2) I thought I probably would not be deceived, (3) I thought I might be deceived, (4) I thought nothing of it, or (5) Other. Based on these responses, respondents who answered with (1), (2), and (3) were classified into two groups, Group A and Group B, respectively. A two-sample t-test was used to test for differences between the two groups.

3.1.4 Analysis Results

Table 1 shows the results of the analysis. The results show that the p-values for the age composition ratio and the number of types of special frauds known are above 0.05, indicating that there is no difference between the two groups. Since the data presented here are for victims, it cannot be said that age or the number of types of special frauds known are direct factors in special fraud victimization. However, there is no difference between the two groups regarding awareness of special fraud, indicating that there are common factors. It can be assumed that differences in awareness of special fraud do not make a significant difference in the ease of avoiding victimization.

Table 1: Test Result

Group (average)	Age Distribution (*)	Number of special fraud types
A	5.53	3.24
B	4.75	3.25
P value	0.33	0.99

*Values from 1 to 9 (1:10s to 9:90s) divided by the number of persons and the average calculated.

3.2 Questionnaire Survey by the City of Yokohama

The analysis by the Shimane Prefectural Police revealed that there are common factors among different groups of people who have different awareness of special fraud. Based on these results, an analysis was conducted using a questionnaire survey of residents of Yokohama City aged 15 years and older regarding their awareness of special fraud and actual victimization. The Yokohama City questionnaire covered both those who had been victims and those who had not.

3.2.1 Target Data

The data was derived from a survey of 1,305 people (835 males and 470 females) in Yokohama in 2020, who were asked whether they thought they would be victims and whether they had ever been victims of special fraud, among other questions [11].

3.2.2 Questionnaire Items

A total of 15 items, including sex, age, awareness of the type of special fraud, and damage from special fraud were included in the questionnaire.

3.2.3 Analysis Method

The following four responses were given regarding differences in awareness of special frauds: "a. I am not a victim," "b. I am rather sure I will not be a victim," "c. If anything, I am rather sure I might be a victim," and "d. I am rather sure I might be a victim." From the results of these responses, two groups were created: Group A: "I am not a victim" and Group B: "I am a victim." A chi-square test was conducted to compare these groups.

3.2.4 Analysis Results

Table 2 shows the results of the analysis. We see that there was a significant difference between groups A and B. Group B had a higher percentage than Group A in the "I was a victim" and "I almost became a victim" categories. This indicates that those who thought they would be victimized also encountered victims of special fraud, indicating their vulnerability. These results are shown in Table 3.

Table 2: Test Results of Awareness of Damage and Actual Damage

P Value 2.41E-06	A		B	
	Number of cases	%	Number of cases	%
(a) I was victimized	7	1%	11	4%
(b) A relative was victimized	18	3%	5	2%
(c) Almost became a victim myself	17	3%	23	9%
(d) Almost victimized by a relative	29	5%	21	9%
(e) I was not victimized	535	88%	184	75%
(f) I don't want to answer	3	0%	2	1%
Total amount	609	100%	246	100%

In addition, both groups were tested on an item that asked if there were any special fraud countermeasures that they would like to consider in the future; and a significant difference was found between the two groups. In particular, those who thought they would be victimized selected the countermeasure options more frequently. This result indicates that even those who thought they would be victimized have considered multiple countermeasures

Table 3: Test Results of Awareness of Damage and Measures to Be Considered in The Future

*	A		B		P Value
	Number of cases	%	Number of cases	%	
(a)	267	33%	151	47%	0.00
(b)	162	20%	87	27%	0.01
(c)	184	23%	111	35%	0.00
(d)	91	11%	49	15%	0.07
(e)	328	40%	172	54%	0.00
(f)	300	37%	159	50%	0.00
(g)	135	17%	20	6%	0.00
(h)	22	3%	17	5%	0.05

*(a) Always set telephones and cell phones to answering machine settings(b) Install equipment to prevent unwanted calls(c) Install a recording device on your telephone(d) Stop using a land-line phone and use only a cell phone.(e) Understand the common excuses used by the perpetrator (f) Increase the frequency of communication among family members(g) Nothing in particular (h) Others

The National Police Agency introduces countermeasures tailored to various methods of special fraud. For example, against the Oleore fraud, it recommends preventing damage by combining multiple countermeasures, such as always setting an answering machine function, installing a nuisance call prevention device, and deciding on a family password in advance [12]. The Yokohama City data shows that even those who thought they would be victimized also indicated that there were special fraud countermeasures they would like to consider in the future, therefore suggesting that they may not have been combining multiple countermeasures and that their countermeasures were insufficient.

4 Consideration

Data on special fraud conducted by the Shimane Prefectural Police and Yokohama City aimed to identify the characteristics of those who become victims of special fraud. The data conducted by the Shimane Prefectural Police Headquarters compared victims who felt they would not be victimized with those who felt they might be victimized, and found no difference in age composition and the types of special frauds they knew about between the two groups. The Japanese Police Agency data is aggregated data and cannot be compared with the results of the study by the Shimane Prefectural Police questionnaire data. However, there was no significant difference in the types of special frauds known between victims and those who avoided the crime in the survey data conducted by the National Police Agency [6]. Similarly, when the victims in Shimane Prefecture were divided into two groups based on their awareness of special fraud, the lack of difference was generally agreeable. This can also be explained by the fact that "knowledge of the types of fraud," considered as an explanatory variable, was not significant in the results of Takiguchi's examination of factors contributing to the susceptibility to victimization [13]. Furthermore, the results of the comparison of the two groups in the Yokohama City data showed that those who had thought they would be victimized were more likely to encounter actual victimization and were more likely to be victims of special fraud, again confirmed by the

data for both those who had been victimized and those who had not been victimized. Furthermore, those who had thought they may be victimized had not taken sufficient countermeasures. Although the National Police Agency's tabulated data does not allow for analysis by dividing the respondents into two groups, a minimum of approximately 35.7% and a maximum of approximately 62.0% of the respondents in each group indicated that they had not implemented countermeasures against special fraud, suggesting that they may not be fully prepared for special fraud even though they are aware that they may be victimized by it. This indicates that while people think they are safe with regard to special fraud, they are at risk; similarly, those who think they may be victimized also have vulnerabilities to special fraud. While further research is needed to determine the reasons for not taking countermeasures, the Yokohama City data indicates that a certain number of respondents do not know what kind of countermeasures would be effective; therefore, it is necessary to consider how to educate people about this issue. The Yokohama City data provides information regarding victims' awareness of special fraud prior to being victimized, and it is possible that their awareness may have changed after they were victimized. In the future, it is necessary to devise survey methods and items that would investigate this possible increase in awareness.

5 Consideration

In this study, we conducted an analysis of both victims and non-victims of special fraud with the aim of clarifying their attitudes toward special fraud. As a result, we are able to clarify that among those who were victims of special fraud in Shimane Prefecture, those who thought they would be victimized were victimized despite saying that they were aware of the risk of special fraud. The Yokohama City data also revealed that those who thought they would be victimized took inadequate countermeasures, regardless. This is because, with regard to special fraud, it is said that people who think they are safe, are at risk, and although warnings are given in the news [14] and in videos [15] on measures against special fraud, emphasizing only this point is an inadequate countermeasure. A limitation of this study is that the survey data used in this analysis was obtained from multiple institutions, and there were no uniform standards for the survey items, resulting in variations. In the future, it will be necessary to conduct the survey with a uniform target population and question items. Furthermore, we would like to analyze the data on victims and clarify what factors contribute to the victimization of special fraud.

Acknowledgement

This research was carried out based on the results of the "Special Fraud Victim Questionnaire in 2020" provided by the Shimane Prefectural Police and the "7th Yokohama e-Questionnaire in 2020: Questionnaire on Special Fraud" provided by the Yokohama City Citizens Bureau. We would like to take this opportunity to express our deepest gratitude.

References

- [1] M. Maruyama, "Special fraud and the penalties for those involved," *Nanzan U. Law. Soc.*, vol. 43, pp. 1–31, May 2020.
- [2] S. Oba, "How to recognize the willfulness of the receiver of a special fraud," *Shimane U. Law. Sch.*, vol. 63, pp. 1–29, March 2020.

- [3] Metropolitan Police Department, “What is special fraud?”. <https://www.keishicho.metro.tokyo.lg.jp/kurashi/tokushu/furikome/furikome.html> (date accessed Apr 26, 2022).
- [4] T. Hatta, “Relationships among higher-order brain functions, trust, and gullibility in middle-aged and older adults,” *Psychol. Res.*, vol. 85, pp. 540–548, February 2015.
- [5] R. Fukatsu, “Higher brain dysfunction,” *Japanese Soc Rehabil. Med.*, vol. 49, pp. 203, 2012.
- [6] National Police Agency, “Special fraud recognition and arrests”. <https://www.npa.go.jp/publications/statistics/sousa/sagi.html> (date accessed Apr 26, 2022).
- [7] National Police Agency. “2020 White Paper on Police Section 1: Police efforts to protect the elderly from crime and accidents”. <https://www.npa.go.jp/hakusyo/r02/honbun/index.html>. (date accessed Apr 26, 2022).
- [8] Central Committee of Financial Services Information, “A study on the prevention of consumer fraud damage by applying behavioral economics,” <https://www.shiruporuto.jp/public/document/container/report6/pdf/ron171213.pdf>.(date accessed Apr 26,2022).
- [9] Nihon Keizai Shimbun, “The image of victims of furikome fraud, analyzed by the Tokyo Metropolitan Police Department”. https://www.nikkei.com/article/DGXNASDG29035_Z21C12A0CC1000/ (date accessed Apr 26, 2022).
- [10] Shimane Prefectural Police, “Results of special fraud victim questionnaire”. https://www.pref.shimane.lg.jp/police/01_safety_of_life/tokusyuu_sagi_higai_boushi/ (date accessed Apr 26, 2022).
- [11] Yokohama City. “Results of Yokohama e-Questionnaire (FY 2020)”. https://www.city.yokohama.lg.jp/city-info/koho-kocho/kocho/e_anke-to/kekka/R02kekka.html (date accessed Apr 26, 2022).
- [12] National Police Agency, “Special fraud techniques and countermeasures”. <https://www.npa.go.jp/bureau/safetylife/sos47/case/oreore/> (date accessed Apr 26, 2022).
- [13] Y. Takiguchi, “Do suspicious people fall victims to special fraud?: A study of attitudes toward the elderly,” *Bull. Toyo U Grad. Sch.*, vol. 55, pp. 31–49, March 2019.
- [14] Japan National Broadcasting Company, “Fraud: The more confident you are, the more careful you should be!”. <https://www.nhk.or.jp/shutoken/net/20210430s.html> (date accessed Apr 26, 2022).
- [15] Consumer Affairs Agency, “Warning about fraud and trouble with the Corona disaster video, “don't say, 'I'm OK. I'll be fine. Episode””. https://www.caa.go.jp/policies/policy/consumer_policy/information/notice/movie/index.html (date accessed Apr 26, 2022).