Journal of Economic Criminology 1 (2023) 100003

Contents lists available at ScienceDirect

Journal of Economic Criminology

journal homepage: www.journals.elsevier.com/journal-of-economic-criminology

Case report on enormous economic losses caused by fraud from Japan to the world

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ARTICLE INFO

Keywords:
Digitization
Digital governance
Artificial intelligence
Fraud

ABSTRACT

This paper reports case studies on economic injustice or fraud in Japan, the US, the EU, the UK, and Moldova respectively. This paper is intended to alert governments and leaders of the international community to fraud. A literature review on fraud was conducted. First, this paper presents recent fraud cases related to COVID-19 and why cases are increasing in Japan. Digitization and digital governance can reduce instances of fraud. In order to improve or enhance digitization and digital governance, artificial intelligence (AI) and the role of council with expert scientists will be critical in Japan. Malicious scammers are already using AI to commit fraud, but we and our defenders in the world are hardly using AI. In general, the less digitization and AI governance, the more fraudulent it becomes. Second, the fraud problem is an international issue. This is because the largest fraud case in a generation, in which hundreds of billions of US dollars were stolen, was reported in the US. Similar fraud cases have been reported in the EU, the UK respectively. World leaders do not recognize the enormous economic losses caused by fraud due to fraud deviancy attenuation and the circle of attenuation is widening. There is a lack of investment in countermeasures, the number of reports is low and the circle of attenuation is widening. Governments and the international community need to cooperate, share tools and help each other against organized scammers.

Introduction

This paper reports case studies on economic injustice or fraud in Japan, the US, the EU, the UK, and Moldova respectively. The scope of this paper is to alert governments and world leaders of the international community by reporting fraud cases and identifying the fraud problems of governments such as Japan, the US, the UK, the EU and Moldova. There is no general overview of the fraud problem. Therefore, we must use the selected jurisdictions on fraud. This paper will address why world leaders are unaware of the enormous economic losses due to fraudulent deviance attenuation, and the circle of attenuation is widening.

The largest fraud case in a generation, in which hundreds of billions of U.S. dollars were stolen in connection with COVID-19, occurred in the US (Dilanian and Strickle, 2022; SENATE.GOV, 2022) and similar fraud cases have been reported in the UK (GOV.UK, 2022; Reuters, 2022a), the EU (Reuters, 2022b) and other countries such as Moldova (Osavoliuk and Savchenko, 2021) respectively.

This paper deals with COVID-19 related fraud. Fraudsters target individuals and corporations or legal entities to fraudulently obtain money to charge Medicare and the government through individual and corporate subsidy applications for false tests and treatments related to COVID-19.

Organized fraud includes engaging in an organized and continuous course of conduct with the intent to defraud or obtain property from one or more persons by means of false or fraudulent premises, representations, promises, or willful misrepresentations concerning future conduct. Organized fraud is a global problem that needs an international solution. This is because large-scale organized fraud is seen when international criminal groups launch detailed campaigns against specific targets (Keogh, 2022). Malicious scammers are already using artificial intelligence (AI) to commit fraud, but we and governments are hardly using AI in the real world. There is a huge gap between fraud detection research and real government. Many governments do not effectively use AI for fighting fraud.

Most current research on fraud detection uses machine learning or AI models to process raw data directly (Ti et al., 2022; Bahnsen et al., 2016; Baesens et al., 2021). Therefore, the machine learning model requires a digitized dataset. In other words, digitization is essential for fraud detection with AI. However, in the real world, many governments do not effectively use AI for fraud detection to reduce economic losses. Remember that there is a huge gap between fraud detection research

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https://doi.org/10.1016/j.jeconc.2023.100003
Received 5 November 2022; Received in revised form 28 January 2023; Accepted 28 February 2023

and real government.

Digitization is a process, not an event, to add or help government services. Digital governance is a system that helps establish and strengthen accountability, roles, and decision-making authority for an organization's digital presence. However, digital governance must prepare and provide all necessary and sufficient rules before the actual digital system is operational. In order to conduct digital governance, digitization is essential. In other words, without digitization, digital governance cannot be fulfilled.

In digital governance, AI can play an important role in validating and checking rules for automatically identifying fraud (Ti et al., 2022; Bahnsen et al., 2016; Baesens et al., 2021). In other words, digitization with digital governance allows AI to mitigate fraud in our society. Without digitization and digital governance, AI cannot mitigate fraud. Based on the latest fraud cases in Japan, the government and local governments need to improve their digitization and digital governance.

However, in 2020, a Dutch court ruled that digital welfare fraud detection systems based on AI are illegal because they do not comply with privacy rights under the European Convention on Human Rights (Bekkum and Borgesius, 2021). To deal with organized fraudsters around the world, it may be necessary to update the European Convention on Human Rights or consider privacy rights in new AI fraud detection.

This paper is composed of two parts: fraud in Japan and fraud in the world. The world fraud cases include the largest fraud in the US, the UK fraud, the EU fraud and Moldova fraud respectively. We must protect ourselves from AI-powered scammers.

This paper conducted a literature review on fraud. Japan is a country where fraud is prone to rampant (Kadoya et al., 2021). This paper introduces the state of digitization delays in Japanese government and municipalities, based on Japanese case studies. This paper will generalize that digital governance plays an important role in mitigating various types of fraud. In this paper, to accelerate digital governance for reducing fraud, networked digitization will be inevitable. Based on the literature review, solutions for reducing fraud will be given. Similar fraud cases have been reported in the EU, the UK and other countries. The largest fraud case in a generation was reported in the US.

In 2011, Ryder focused on the financial crime policies adopted by the international community and how these have been implemented in the UK and the US (Ryder, 2011).

In 1987, Levi discussed white-collar or commercial crime which has grown to be a major issue in our society in the US and UK (Levi, 2014).

Cross reported online fraud. Because most scams take place online, new challenges related to policing and preventing online fraud have arisen, and victim support services are not yet adequately equipped to handle post-victimization (Cross, 2019).

Button and his colleagues established "economic crime" as a new discipline in criminology. Fraud, corruption, bribery, money laundering, price manipulation cartels, and intellectual property crimes are typically pursued for financial and professional gain and have a devastating impact on the prosperity of economic life (Button et al., 2022).

There are many tricks used by fraudsters. One of popular tricks is identity theft. Identity theft allows fraudsters to use stolen personal information or corporation information to prepare formal grant or subsidy applications. Unless the individual with the stolen personal information is aware of the identity theft, the government cannot recognize the fraudster's grant application. The protection of personal information is essential to digital governance.

Fraud in Japan

Yokoyama reported the traditional fraud (Yokoyama, 2018). The fraud by Japanese gangsters and remittance fraud by swindlers against the elderly are analyzed and fraudulent business practices and scandals of bid rigging are explained.

Yasuoka investigated the traditional corporate fraud in Japan (Yasuoka, 2019). His study includes Toshiba, Olympus, Kobe Steel, Nissan and Toyo Rubber. This Section introduces recent fraud cases due to delays in digitization in Japan.

A town in Yamaguchi Prefecture mistakenly sent a total of US $500,000 worth of COVID-19 relief money to one person (JapanToday, 2022a). It is hard to believe that in 21st century Japan, an incident involving the old technology of a floppy disk was reported. In Japan in 2022, the town prepared a list of all applicants, compiled their account information on a floppy disk, and manually delivered it directly to the bank to execute the money transfer (JapanToday, 2022b). This incident shows Japan's delay in digitization of Japanese government and municipalities. This incident is just the tip of the iceberg.

A single officer caused human errors in creating the content of the floppy disk on the list of applicants without verification. The floppy disk was delivered to the bank in person. The bank and the officer were not aware of this mistake on money transfer. Multiple human errors caused this incident.

Digitization with digital governance allows AI for automatic verification and validation of important information based on rules such as amount per person, the number of individuals and the maximum money transfer per instance with prepared rules. In other words, the roles of humans and AI need to be clearly defined. A human makes the rules, and the AI checks and verifies the data and instances.

We do not have publicly available official data on fraud against local and central government agencies, but we do have statistics on individual refund fraud from 2012 to 2022 which is available in public from National Policy Agency in Japan to show the trend of individual refund fraud (NPA, 2023). The 2022 data is missing December in 2022. Fig.1 shows the trends in individual refund fraud based on raw data from the Japanese National Police Agency where the vertical axis indicates the number of cleared cases from 2012 to 2022. There are five types in the individual refund fraud: medical fraud, insurance fraud, pension fraud, tax fraud and others. As shown in Fig. 1, it is clear that the number of medical refund fraud cases has increased dramatically under the COVID-19 pandemic.

Japan administrations should abolish human wave tactics or labor-intensive methods. Even during the COVID-19 Special Fixed Payment, many municipalities responded with manpower (MIC, 2021). Digitalization allows administrators to identify individual applicants and individual companies and legal entities and identify fraudulent applications.

Japanese man was arrested in Indonesia over COVID-19 relief fraud in Japan (APnews, 2022). Japanese fugitive was accused of helping steal $7.3 million intended for small businesses in Japan hurt by the coronavirus. The man and a group of acquaintances allegedly submitted about 1700 false applications for COVID-19 relief funds.

This is because the bureaucracy in Japan is a stove-piped administration so that information from the Japanese IRS (Internal Revenue Service) is not available to other ministries. Stovepipe organizations have a structure in which the flow of information within the

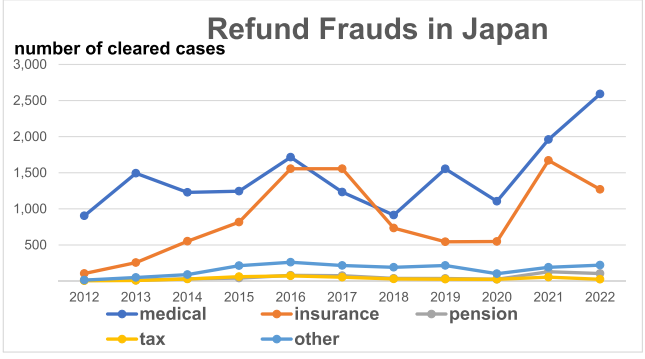

Fig. 1. Refund fraud in Japan from 2012 to 2022.

organization is largely or completely restricted up and down through lines of control, inhibiting cross-organizational communication. In other words, the IRS information in Japan cannot be accessed and shared with other ministries such as coronavirus ministry in the current regulations for preventing fraud. This also stems from the lagging digitization and digital governance in Japan. Abuse of IRS data access by malicious persons can be deterred by access logging. Digitization and digital governance can immediately identify false applications with the IRS information. This is because all false applications are immediately obvious because they have never paid a single tax to the state or local government.

There are four types of media to archive: read-only, write-add-only, overwritable, and read/write. Access logging must be archived based on write-add-only. We must wisely choose one of four types of media to archive for eliminating fraud in digital governance. Digital governance allows AI to identify fraud using access logging and user behaviors.

Tax official and six others were arrested over COVID-19 aid fraud in Japan and over alleged involvement in a fraud ring that recruited 200 people (JapanTimes, 2022). Government tax officers can take advantage of the lagging system in Japan without significant effort for fraud. The Metropolitan Police Department believes the group swindled the government out of as much as $2.0 million in benefits aimed at helping smaller businesses that suffered sharp revenue declines due to the pandemic. In addition to digitization and digital governance, ethical problems of government officials must be also immediately resolved.

This paper presented several fraud incidents. This is because Japan's government is one of countries lagging behind in digitization and digital governance. The problem lies in that Japan's political parties are faction-ridden. In other words, many ministers are not individually designated ministry experts in Japan.

This means that many ministers are not experts, so all decisions are dependent on the bureaucracy. The bureaucracy can control all decisions using a controllable council of experts. If the bureaucrats are good with sufficient knowledge for decision-making, there is no problem, but if the bureaucrats are not good or the world is changing rapidly, this is not appropriate without expert scientists. The role of council of expert scientists significantly plays a key role in decision-making in government.

Digital transformation in Japan is one of the most important challenges facing the country. However, according to a Japan Productivity Center survey released in 2020 (JPC, 2020), Japan's labor productivity per hour ranks 21st out of 37 OECD countries. Among OECD countries, Japan is ranked 27th in digital competitiveness and 22nd in digital talent as of 2020.

Japan is among the bottom quarter of countries that spends the lowest level of education expenditure as a share of GDP across OECD countries.

The Japanese government cannot have digital governance without digitalization to mitigate fraud in Japan. In order to improve digitization and digital governance in Japan, the role of council with expert scientists will be critical. Japan's political parties are faction-ridden (Takefuji, 2020). Several ministers nominated by factions may be ignorant of scientific and technical issues (Takefuji, 2020). Therefore, Japanese government must seek out expert scientists.

Strong evidence was reported on the impact of digitization on productivity (Muzi et al., 2022). It was clearly demonstrated that the more digitization is done, the more productivity is improved. Japan is far below OECD average of labor productivity (OECD, 2021). Digitalization and digital technologies have the potential to boost productivity growth for reducing fraud (OECD, 2021; PYMNTS, 2022). The status of digitalization by country is proportional to productivity (PYMNTS, 2022). In other words, productivity shows the status of digitalization in a country. The higher the productivity, the more digitized a country becomes. The more digitization, the less fraud there will be.

Nevertheless, too much reliance on the digital increases the vulnerability of society (Armano, 2022). In order to reduce the digital vulnerability, artificial intelligence will play a key role in detecting fraud. Artificial intelligence is actually used to detect and fight corruption (Köbis et al., 2022).

However, malicious fraudsters are already using AI to commit fraud (WSJ, 2019). In order to prevent AI fraud, the smarter AI for detecting and fighting fraud is needed. West summarized how to use AI for reducing government fraud (West, 2021).

Getting governments to take fraud more seriously is a very important issue. Button et al. examined why the level of resources and interest in fraud are not commensurate with the size of the problem. They explained fraud deviancy attenuation in the UK (Button and Tunley, 2015). In Japan, there is not much accurate measurement of fraud, the government is not taking it seriously, there is a lack of investment in countermeasures, and the number of reports is low, i.e., the circle of attenuation is widening.

Fraud in the world

A literature review of recent frauds related to COVID-19 was conducted in the US, EU, and UK, respectively. The Moldovan fraud case represents a national financial crisis.

ABC news reported the biggest fraud in a generation in the US (Dilanian and Strickle, 2022; SENATE.GOV, 2022). Of the $800 billion distributed under the COVID-19 bailout program known as the Paycheck Protection Program (PPP), 10%, or $80 billion, was stolen in the short period. This is in addition to the $90–400 billion supposedly stolen from the $900 billion COVID-19 unemployment relief program, at least half of which has been taken by international fraudsters. The smarter the AI gets, the more malicious scammers tend to be. Because, AI does its best.

The British government confirmed the fact that about 1.1 billion pounds ($1.27 billion) in loans to small businesses made under the COVID-19 emergency loan program have already been classified as suspected fraud (GOV.UK, 2022; Reuters, 2022a).

More than 5 billion euros ($4.85 billion) of European Union funds were misspent last year. Auditors identified 15 cases of potential fraud, up from six in the previous year's assessment (Reuters, 2022b).

The fraud of one billion USD from Moldova's banking system resulted in the theft of an amount equivalent to 12% of Moldova's GDP. In just a few months, the country's currency depreciated by 42%, plunging the country into a currency crisis. This bank fraud caused enormous reputational damage to the country (Osavoliuk and Savchenko, 2021).

The European Union considers the economic losses caused only by specific fraud (EU, 2017). The European Union has established institutions (e.g., OLAF, EPPO, and European Cybercrime Centre) and adopted instruments (PIF Directive) to counter fraud from a cross-border perspective. The Council of Europe has adopted a Convention on Cybercrime (ETS No. 185), which criminalizes, for example, only specific computer-related fraud (Article 8) (Council of Europe, 2001). Some selected jurisdictions have adopted some innovative solutions.

There is not much accurate measurement of fraud in the world, governments are not taking it seriously, there is a lack of investment in countermeasures, and the number of reports is low, i.e., the circle of attenuation is widening.

Therefore, we are internationally losing this fraud game with malicious scammers. Billions of U.S. dollars have been stolen by organized criminal fraudsters. We need to rethink the current state of fraud as a top priority and prepare for the scams that will be coming in the near future. Remember that malicious scammers are already using AI to commit fraud, but we and our defenders are hardly using AI. Smarter AI plays an important role in combating organized fraudsters using AI. We need to rethink the current state of fraud as a top priority and invest more in combating organized fraudsters.

Many OECD countries that are doing better than Japan in terms of digital technologies have also experience similar or worse cases of

fraud. This is due to a lack of investment in countermeasures. No country in the world has ever succeeded against fraud. In 2020, a Dutch court ruled that digital welfare fraud detection systems based on AI are illegal because they do not comply with privacy rights under the European Convention on Human Rights (Bekkum and Borgesius, 2021). To deal with organized fraudsters around the world, it may be necessary to update the European Convention on Human Rights or consider privacy rights in new AI fraud detection.

Conclusion

This paper is intended to alert leaders of governments and the international community about fraud. World leaders do not recognize the enormous economic losses caused by fraud due to fraud deviancy attenuation and the circle of attenuation is widening. There is not much accurate measurement of fraud in the world, governments are not taking it seriously, there is a lack of investment in countermeasures, and the number of reports is low, i.e., the circle of attenuation is widening. We are losing economic fraud game against malicious scammers. Malicious scammers are already using AI to commit fraud, but we and our defenders are using very little AI. In summary, digitization and AI will play an important role in reducing fraud in general in the future. Smarter AI in conjunction with the digitization of government is inevitable in the future. The less digitization and AI of government, the more fraudulent it becomes. The fraud issue is an international problem. Governments and the international community need to cooperate, share tools and help each other against organized scammers. We need to rethink the current state of fraud as a top priority and invest more in combating organized fraudsters. The conventional AI-based fraud detection may violate privacy rights. We need to update the current privacy rights or add a new mechanism to the conventional AI systems to double-check suspected individuals or legal entities. This is because there is no perfect AI machine for fraud detection.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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