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## Artificial Intelligence As a Remedy For Economic Crimes Through the Application of the Labeling Theory

### Abstract

In the modern world, with technological development, economic crime rates are increasing daily. This creates questions about artificial intelligence and whether it is possible to protect data and avoid the detrimental effects of technology by itself. This article will discuss the connections between financial crimes, artificial intelligence, labeling theory, and the possible benefits of artificial intelligence over economic crimes by using the labeling theory which became more popular in criminological sciences in the 1960s years. It gives general information about financial crimes, labeling theory, controlling economic crimes, and artificial intelligence in anti-corruption. It clarifies the methods that can be implemented in artificial intelligence to gain more benefits. In this article I collect data about the economic crimes committed in Azerbaijan and proceed in Baku Court on the Grave Crimes, then generalize this data to find similarities between crimes, and find outcomes that could contribute to possible solutions.

**Keywords:** *artificial intelligence, economic crimes, labeling theory, crime detection, financial crimes*

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## Süni intellekt, iqtisadi cinayətlər, etiket nəzəriyyəsi, cinayətin müəyyənləşdirilməsi, maliyyə cinayətləri

### Xülasə

Müasir dövrdə texnologiyanın inkişafı ilə birlikdə iqtisadi cinayətlərin sayında artımlar müşahidə edilmişdir. Bu süni intellektlə bağlı texnologiyanın mənfə cəhətlərini onun özü ilə aradan qaldırmaq mümkündürmü şəklində bir sıra sualları ortaya qoyur. Bu məqalə iqtisadi cinayətlər, süni intellekt və etiket nəzəriyyəsi arasındakı əlaqəni və 1960-ci illərdən bəri kriminoloqlar arasında məşhur olan etikətləmə nəzəriyyəsini süni intellektə tətbiq etməklə iqtisadi cinayətlərin qarşısının alınmasında ola biləcək faydaları mübahisələndirir. Məqalə iqtisadi cinayətlər, etiket teoriyası, iqtisadi cinayətlərin tənzimlənməsi, korrupsiya cinayətlərinə qarşı süni intellektin istifadə edilməsi haqqında ümumi informasiya verməklə yanaşı süni intellektindən fayda əldə etmək üçün tətbiq oluna biləcək metodları sadalayır. Bu məqalədə mən Azərbaycan Respublikasında baş verən və Bakı Ağır Cinayətlər Məhkəməsində baxılmış iqtisadi cinayətlərlə bağlı məhkəmə prosesləri əsasında ümumi data toplamış və daha sonra bu cinayətlər arasındakı bənzərliklər və çıxarılan nəticələr əsasında müəyyən həll yolu tapılmasını qeyd etmişəm.

**Açar sözlər:** *süni intellekt, iqtisadi cinayətlər, etiket nəzəriyyəsi, cinayətin müəyyənləşdirilməsi, maliyyə cinayətləri*

### Introduction

Fraud, money laundering, environmental crimes, and corruption are some parts of the economic crimes which are also known as financial crimes. With the development of technology money

laundering and fraud are getting more hazardous for the people and governments. Cryptocurrency crimes have especially been widespread all over the world in recent years. Despite the government's spending huge amounts of money to prevent financial crimes, reports show that only 1 % of the crimes are recovered. Through the development of technology despite its detrimental effects it is also possible to use technology as a solution to these problems with the facilitate of some criminal theories. By the developments of criminological sciences, the criminologist asserts some theories, including labeling theory. Implementing labeling theory to artificial intelligence could be a solution for detecting economic crimes that are prepared with the power of technology. This article will discuss the problem by collecting data from cases of the court on the Grave crimes of Baku and some other literature, then discuss the connection between labeling theory, economic crimes, and artificial intelligence, and lastly give some solutions for these cases.

**Financial Crimes.** The range of ways to commit financial crimes is extensive, including theft, fraud, deception, blackmail, corruption, and money laundering. The risks often seem minimal while the potential rewards are substantial. Financial crime encompasses everything from simple theft or fraud carried out by individuals with malicious intent to complex schemes orchestrated by organized crime groups operating globally. These serious offenses have significant social and economic repercussions and are frequently connected to violent crime and even terrorism (6). Three key factors that need to be established in a money laundering case include: awareness of the illicit source of the funds, involvement in a financial transaction, and participation in the three stages of money laundering (Sanction scanner, 2024).

**Labeling theory.** Labeling theory got most popularity from the 1960s years by the criminologist. The first labeling theorist was Howard Becker. The core idea of this theory is when someone behaves in a way that others consider inappropriate, they are labeled as deviant by those around them, eventually, the person begins to accept and adopt this label as their own. For example, if someone from his childhood grows up in a family where their relatives act towards him without any reliance then this child start acting like an untruthful person who cannot make profit for him and others, also can easily hurt others (Rouhollahi, 2021). After the time this child grows and reaches mature age, he believes that he is not loyal and easily can act in illegal way. Inappropriate labels from society about someone can create a huge problem. It also means that if someone already got undesirable labels from others and he personalizes this label about himself, he has potential for any inappropriate behavior. In modern globalized life labels about someone can be tracked easily by social media or other technological improvements. This means that if someone already has negative labels it could be detected and clarified by artificial intelligence (Bonnie, 2019).

### **Research**

**Artificial intelligence for crime detection.** We can briefly describe artificial intelligence as a simulation of human intelligence in technology but in a more advance way than human ability. Artificial intelligence more accurately can understand and analyze data than human beings can perform problem-solving or perception about something even if it hasn't happened yet. People use benefits of artificial intelligence in many areas of life such as medicine, economics, law etc (International Monetary Fund). In this article we will discuss the facility of artificial intelligence in crime detection and especially in economic crimes detection because the rate of economic crimes which has committed by using technology and especially artificial intelligence are increase day by day. So, we will clarify the detrimental effects of artificial intelligence in committed crime and then enlighten how we can change this effect to the positive way by the facility of artificial intelligence (This website is currently not available). Artificial intelligence can also track social media activity, collect data from the internet, analyze all collected information and make databases about all these procedures. Artificial intelligence can analyze crime data to identify high-risk people and predict potential criminal activities. Artificial intelligence can use information and data, then analyze them and come to conclusions about it. In the 1990s, there was growing interest in using AI for fraud detection (Rebe, 2023).

In 1993, the FinCEN Artificial Intelligence System (FAIS) was launched to help predict and evaluate money laundering activities. Within the next two years, FAIS processed over 200,000

transactions weekly and flagged 400 potential money laundering cases, amounting to around \$1 billion (The Role of Financial Institutions in Preventing Economic Crime" (OECD Reports)).

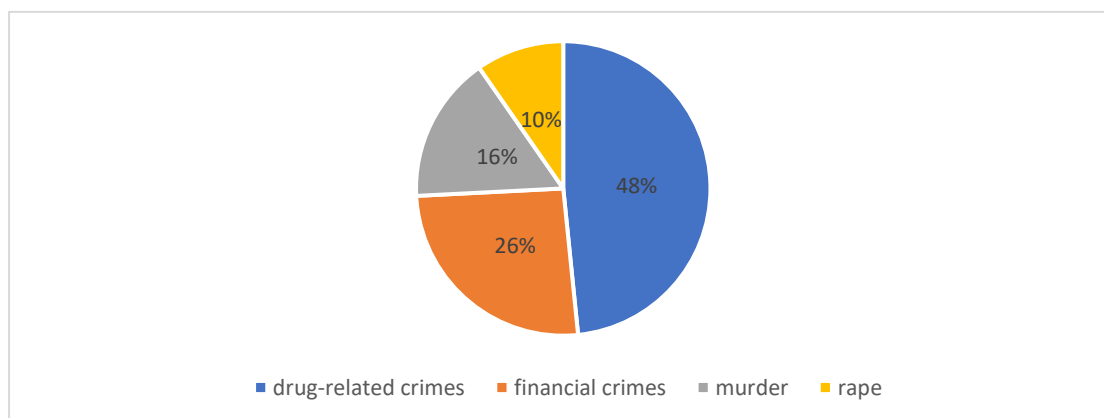
Following the end of the second AI winter, AI technology advanced into new areas such as machine learning, data mining, virtual reality, and cases-based reasoning. ML, a subset of AI, uses algorithms that allow systems to improve automatically through experience, with little or no human input. It primarily relies on sources like experience, practice, training, and reasoning. More specifically, ML focuses on recognizing general pattern and approximating relationships in data, particularly in situations where no pre-existing analytical solution is available (Cybenko, 1989; Buchanan, 2019)

**Controlling Economic crimes.** There are several international organizations like The Financial Action Task Force, Association of Certified Financial Crime Specialist, Anti-money laundering and Financial Crime Institute, Transparency International, etc. The Financial Action Task Force creates policies to deter financial crimes but relies on governmental support for their implementation. Association of Certified Financial Crime Specialist provides a range of solutions centered on training, membership, and certifications related to financial crimes. Anti-money laundering and Financial Crime Institute works in partnership with universities and professional organizations to fight financial crimes. Transparency International aims to address global corruption by concentrating on three primary activities: advocacy, research and campaigning. Despite these organizations' attempts, financial crimes remain a big problem worldwide (Collins, 2019).

**Artificial Intelligence in anti-corruption.** Public and private organizations have a great curiosity about adopting Artificial Intelligence system against corruption. Artificial Intelligence can analyze a large volume of data and predict possible dangers about corruption and can detect fake suppliers more accurately. Artificial intelligence is a powerful tool against corruption, it fights against corruption with some methods, such as reviewing documents and emails for suspicious patterns of false reporting's, protecting of sensitive data, review public contracts for unusual clauses. By reviewing and public procurement, public audits, pattern detection, controlling data analyze, data protection, legislation and transparency (Acera, 2023).

**Methods.** The term data labeling is also popular in machine learning. Labels or tags are used to categorize or describe data, making it easier to identify and organize information. For example, on our smartphones, we might use labels like "wedding", "holiday", "family" to quickly find specific images or albums. In machine learning labeling data has also importance. The label identifies whether the transactions are suspected of being a money laundering transaction (Minkes, 2008). Some labeling techniques produce probabilistic training labels by evaluating the consensus and discrepancies among different data labeling sources. For example, the Snorkel model, created at Stanford University, generates labels based on the outcomes of multiple straightforward labeling functions crafted by experts. This model then assigns weights to each labeling function by assessing the level of agreement among the labels for each data point (Rouhollahi, 2021).

**Findings.** According to the data of rates of economic crimes which happened in Azerbaijan in last 3 years it is obvious that financial crimes contains 1 of 4 total crimes. At the bar chart below it is shown that total crime types and their percentages in last years (Philip, 2010).



Does technology matter for combating economic and financial crime? A panel data study. Technological and economic development of economy research by Achim, M. V., Văidean, V. L. & Borlea, N. S. (2021) their findings shows that the average economic and financial crime score is roughly twice as high in low-income states compared to high-income states. Similar findings indicate that economic and financial crimes are more prevalent in low-income countries than in high-income countries. For example, a study by Achim et al. (2018), which compared two groups of European Union countries, reveals that the EU members, mostly representing developing countries, have an average shadow economy of 25.42 % of GDP, while the older, developed EU members have a much lower percentage of 14.48 %. Furthermore, a Pricewaterhouse Coopers (2018) report highlights that 15 % of financial entities in developing countries anticipate an increase in investments for fraud detection over the next two years, compared to only 9% in developed countries. The same study also found that 58 % of financial entities in developing countries (including financial companies, insurers, mutual funds, and other dealers) have actively fought money laundering in the past two years, whereas only 48 % of entities in developed countries have done the same (Achim, Vaidean, & Borlea, 2021).

### Conclusion

The International Monetary Fund reports that financial institutions will double their Artificial Intelligence spending by 2027 (International Monetary Fund). Despite every kind of attempt the rates of economic crimes are getting higher. This leads to the need to find out more innovative ways in this process. Similarly to the labeling by people in real life, people can also be labeled in social media by the use of technology. Artificial Intelligence can collect data about suspicious labels given by ordinary people on social media or other devices. Then artificial intelligence can process this data and find some suspicious factors. With the help of this method, authorities can investigate these kinds of people or groups and can take measures against illegal acts. For example, if someone is labeled as untruthful, dishonest, or deceptive artificial intelligence can collect this data about the exact person and sign this person's possible danger to the future of the community. With the help of artificial intelligence activities and life of these kinds of people can be tracked by authorities and considered as a potential danger. In conclusion, by implementing the labeling theory to artificial intelligence and by using this power against financial crimes rate of these types of crimes would soon drop.

### References

1. Acera, A. L. (2023, November 21). *Artificial Intelligence and the fight against corruption*. <https://www.antifraucv.es/en/artificial-intelligence-and-the-fight-against-corruption/>
2. Achim, M. V., Vaidean, V. L. & Borlea, N. S. (2021). Does technology matter for combating economic and financial crime? A panel data study. *Technological and economic development of economy*, 27(1), 223-261. <https://doi.org/10.3846/tede.2021.13977>
3. Bonnie, G. B. (2019, April 2). *Artificial Intelligence in Finance — The Alan Turing Institute*. <https://www.turing.ac.uk/news/publications/artificial-intelligence-finance>
4. Collins, D. (2019). *Foundation of International Economic law*. Edward Elgar Publishing.
5. *International Monetary Fund*. <https://www.imf.org/en/Data>
6. Interpol.in. <https://www.interpol.int/eng/Crimes/Financial-crime>
7. Minkes, L. (2008). *Corporate and White Collar crime, sage publication*.
8. Philip, J. C. (2010). *Economical Crime Control*. <http://www.nber.org/papers/w16513>
9. Rebe, N. (2023). *Artificial Intelligence: Crime, War, and Justice, International Press*.
10. Rouhollahi, Z. (2021). *Towards Artificial Intelligence Enable Financial Crime Detection*.
11. Sanction scanner. (2024, September 18). *Three elements that must be proven in a money laundering case*.
12. *The Role of Financial Institutions in Preventing Economic Crime" (OECD Reports)*. <https://www.oecd.org>

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