

AI-based voice phishing voice data analysis model's analysis results and utilizing plans

July 2023

1 Analysis results

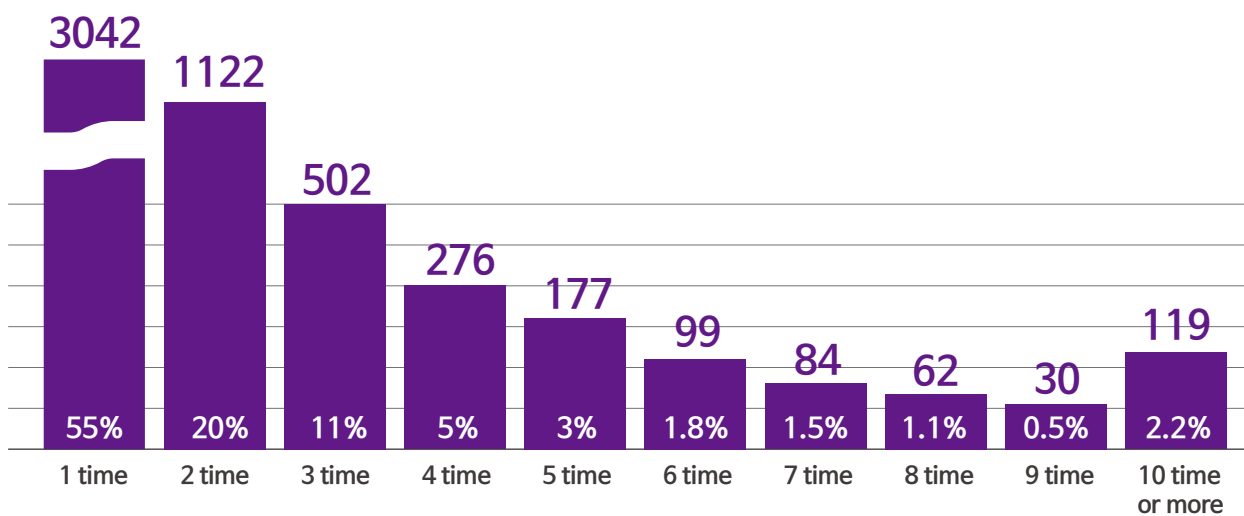
The IDAC under MOIS and the NFS utilized the newly developed model to analyze 12,323 voice files of voice phishing scammers reported through the Financial Supervisory Service from 2015 to March 2023.

The analysis results showed the characteristics of organized voice phishing scams and repetitive criminal activities.

Among the analyzed 12,323 voice files, it has been confirmed that 5,513 individuals engaged in crimes, excluding duplicate voices.

In terms of the number of individuals involved in crimes, 3,042 (55.2%) persons participated in the crimes once and 2,471 (44.8%) persons participated in the crimes more than twice. It was also found out that a single criminal was involved in up to 34 different scams.

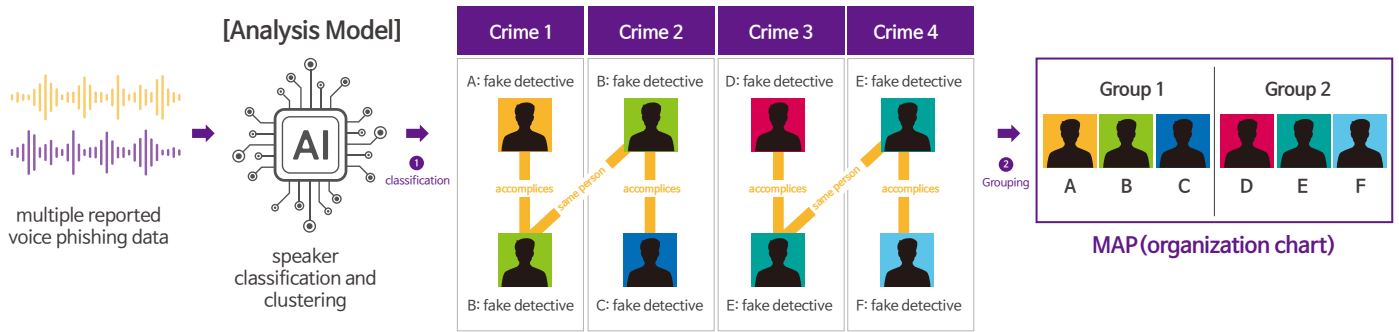
Number of individuals involved in crimes by number of involvements



By utilizing the world's first clustering algorithm for voice phishing criminals, the size of criminal organizations and the number of crimes committed by each criminal organization.

After clustering into the same criminal group (two or more members) by serially tracking the criminals' voices and identifying additional participants, it was revealed that 633 people were involved in 235 criminal organizations.

Concept of criminal organization group



A total of 160 organizations, the highest number among all group sizes, consisted of two members. And, the organizations with the largest number of participants had 18 members.

Criminal organization size and number of crimes committed

Size	No. Members	2	3	4	5	6	8	9	10	11
	No. of organizations (total:235)	160	47	11	7	5	1	1	1	2
No. of crimes committed (total: 2,866)		1,188	614	232	255	184	47	52	70	224

The criminal organizations engaged in a total of 2,866 crimes, with the largest organizations consisting of 18 members committing 137 scams.

Top 5 criminal organizations in terms of size and number of crimes committed

[Org. A]	[Org. B]	[Org. C]	[Org. D]	[Org. E]
18 members	18 members	10 members	9 members	8 members
137 crimes	87 crimes	70 crimes	52 crimes	47 crimes

A total of 235 organizations (633 members)

MOIS expects that the comparison between information of criminal organizations identified through the analysis and the voice data of previously apprehended criminals will be helpful in interrogating and identifying other accomplices.

2 Plans for utilizing the analysis model

MOIS will provide support for the more active use of the newly developed voice data analysis model in voice phishing criminal investigations at home.

First, in the second half of this year, the voice data analysis model will be embedded into the investigation support system currently used by the national police, enabling frontline police officers to directly analyze the voices of criminals and quickly conduct follow-up investigations.

From July, the Voice Phishing Voice Analysis Training Program will be conducted to enhance the voice analysis capabilities of police officers and personnel of investigative agencies.

In addition, the ministry will strengthen collaboration with the Pan-government Voice Phishing Response TF launched under the Prime Minister's Office and expand specialized voice analysis support necessary for investigations.

With the world's first voice data analysis model, MOIS will further bolster international cooperation.

By conducting the training program for investigative agencies in developing countries including Mongolia, the ministry will share the latest voice analysis techniques developed by Korea.

In addition, it plans to share the achievements in model development and reinforce international cooperation in the field of voice analysis related to voice phishing investigations through various international conferences including the upcoming Asian Forensic Sciences Network Annual Meeting and Symposium scheduled for September in Malaysia.