QUALCO

USE CASE

Detecting the Probability of Fraud

Financial institutions often face the challenge of identifying fraudulent account openings, which can lead to regulatory compliance issues, resource misallocation and significant financial losses. By leveraging predictive analytics, institutions can enhance their ability to detect and prevent fraudulent activities among applicants.

Our Approach

A financial institution aimed to assess the likelihood of fraudulent activity in new account openings using the QUALCO Data-Driven Decision Engine (D3E). The platform automatically identified critical segmentation parameters, including:

- **Applicant's current residential status**
- **Duration of stay at the current address**

QUALCO D3E IN ACTION

Step 1 Model Development

We developed a robust machine-learning model to determine the likelihood of an account supporting fraudulent activity. Key predictors selected by QUALCO D3E included:

- **Applicant's annual income**
- **Duration of the previous account**
- **Number of months at the current address**
- **Application velocity (Average number of applications per hour in the last four weeks)**
- **Possession of other cards from the same banking company**
- **Validity of the provided home phone number**
- **Applicant's proposed card limit**

Step 2 Assess Fraud Probability

Based on the identified predictors, the model effectively detected applicants with a high probability of opening fraudulent accounts. To further understand the patterns associated with fraudulent activities, we analysed various applicant characteristics and their correlation with fraud. The insights gained are summarised as follows:

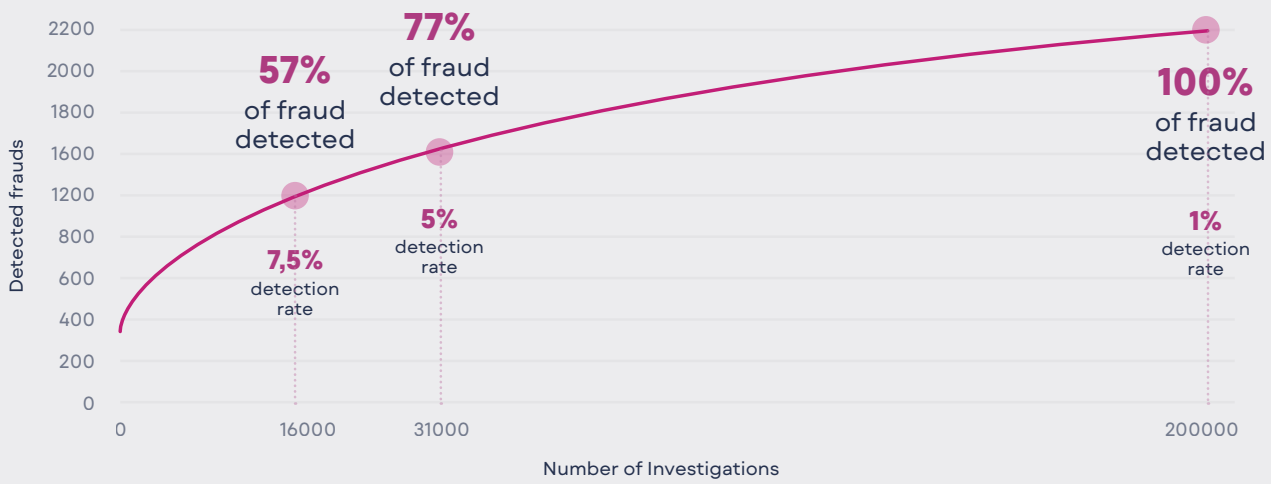
- **Higher-income applicants** were 96% more frequent compared to the general population
- Fraud was 141% more frequent in **applications with higher proposed credit limits**
- An **invalid home phone number** was 21% more frequent
- **Applicants without other cards from the same bank** were 18% more frequent
- An **internal risk score over 200** was 139% more frequent
- Fraudulent applicants often exhibited **multiple high-risk characteristics simultaneously**

One in four applicants exhibiting these characteristics simultaneously is likely to commit fraud

Step 3 Risk Prioritisation & Audit Strategy

The model's predictions enabled the client to prioritise audits based on application risk, focusing on the most high-risk cases first. Validation against applications with confirmed fraudulent or lawful activity allowed the client to adjust the intensity of investigations according to their capacity, business and regulatory constraints:

Fraud detection based on resource allocation across 200K applications with 2,500 confirmed cases



Results

Identified 70% of frauds by auditing just 15% of the portfolio through targeted outreach.

Saved $0.47 million (31%) in costs associated with investigating fraudulent activities.

Improved resource allocation, focusing resources where they are most needed.

Increased customer satisfaction and loyalty through targeted audting.

About
QUALCO Data-Driven Decisions Engine

QUALCO Data-Driven Decision Engine is an integrated decision-making platform that automates every stage of the credit portfolio and collections analytics workflow. It empowers:

- → **Data Organisation** to keep track of one's portfolio's changes easily
- → **Data Processing** to transform and sequence data for analytical insights
- → **Machine Learning capabilities** to understand customer behaviours and segments
- → **Tailored Treatments** to customise actions for various customer groups, enhancing performance
- → **Strategic Insights** to shape treatment strategies and estimate their impact on profitability
- → **Regulatory Compliance,** by generating compliance reports based on analysis results

Designed for any business that manages credit, QUALCO Data-Driven Decision Engine equips financial institutions and servicers with the tools to transform raw data into actionable insights. By leveraging advanced analytics and machine learning algorithms, organisations can unlock untapped potential, drive operational efficiency, and deliver exceptional customer value.

www.qualco.eu