VI. Future Work and Improvement

A.Short-term improvement plan

While current consumption forecasting models have provided effective analysis, further refinement of user profiles is needed, especially for users in different life stages and occupations. By collecting more granular consumption data, such as the user's occupational background, family structure, and lifestyle habits, the consumption behaviour of various market segments can be predicted more accurately. It also helps to identify atypical consumption patterns and increase anti-fraud warning mechanisms.

What's more, the current model relies on the manual entry of large amounts of data, which can be solved by integrating the bank's internal systems and automating external data sources. For example, collecting data on users' consumer behaviour directly from e-commerce platforms and social media through API interfaces will improve data processing efficiency and reduce errors. This automation will also support real-time monitoring, increasing the speed and accuracy of detection of fraudulent activity.

Finally, based on the consumption prediction model, a real-time consumption warning system is developed, which can instantly notify users that their consumption exceeds the budget or abnormal consumption behaviour. The system will help users gain better control of their finances, while also providing banks with the opportunity to intervene in a timely manner to prevent potential credit risks, including timely identification of and response to possible fraud.

B.Long-term development plans

On the basis of current consumer data analytics, it would be beneficial to develop a multi-dimensional consumer analytics platform that would integrate more types of data, including but not limited to social media trends, economic indicators and geographic information, to enable us to understand consumer behaviour from a wider perspective and capture subtle market movements, thereby providing the Bank with the ability to adjust its strategy in different economic scenarios.

Meanwhile, an intelligent financial product customisation and recommendation system can be developed using deep learning and big data technologies. The system will provide personalised financial product recommendations based on the user's consumption behaviour, financial situation and life events (e.g. home purchase, marriage, children's education). This approach not only improves the attractiveness and applicability of financial products but also enhances customer loyalty by providing help when users need it most.

Moreover, if a global consumption database is established, combined with advanced prediction models, such as the neural network that has been successfully applied before, the bank will be able to predict consumption trends in different countries and regions. This will provide data support for the bank's international business expansion, and help the bank make more accurate market entry and product positioning decisions on a global scale.

Finally, in order to cope with rapidly changing market conditions and consumer behaviour, the system of the future will have the ability to learn and adapt itself. By constantly collecting and analysing new consumer data, the model is able to automatically adjust its algorithms and update its predictions in real-time, ensuring that banks are able to respond quickly to changes in the market. At the same time, this technology will also be used to improve the efficiency of anti-fraud systems, enabling them to instantly recognise and respond to emerging fraud patterns.