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Srovnání běžných účtů v Číně s ohledem na FinTech

Comparison of Current Accounts in China in Accordance with
FinTech

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The declaration

I hereby declare that I have elaborated the entire thesis including annexes myself.

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1 Introduction

With the rapid development of financial technology, the banking system has changed with the development of financial technology. More and more Chinese people begin to use e-banking for online transactions. Even small shops on Chinese streets are paying with QR codes. Fewer and fewer people use cash to trade. People are used to going out with only cell phones. These changes have taken place in the past few hundred years, which people can't imagine, but financial technology is gradually changing the lives of Chinese people.

The new way of trade makes Chinese people's life more convenient. The popularity of e-banking has also changed the criteria for people to choose bank account opening. People begin to need a high intelligent and efficient trading platform. The convenience of chat robot and mobile payment app greatly improves the efficiency of bank transactions and the convenience of use to make customers more satisfied. It can be said that the most competitive capital of the Bank of China in the hearts of customers is the perfection of the financial technology system.

The aim of this thesis is to introduce the relationship between the development of financial science and technology in China and banks, and to compare and analyze the current accounts of banks in China. Based on the Multi-Criteria Decision-Making (MCDM) method, the optimal choice for natural person to open current account is found. The reason for choosing China is that the popularity of e-payment and online banking is high due to the perfect banking systems and advanced technology in China.

This thesis is divided into five chapters. The first chapter is a brief introduction. The second chapter is the description of China's banking system and China's FinTech development characteristics. The third chapter introduces the analysis method of Multi-Criteria Decision-Making. The fourth chapter is based on Multi-Criteria Decision-Making analysis of the current account of ten banks in China. The last chapter is the conclusion of this thesis.

The second chapter introduces the characteristics and basic structure of the banking system, the types, types and business scope of the Bank of China. And the application of FinTech in banking system is introduced. The development and characteristics of FinTech in China are described. Also has the Chinese characteristic electronic payment system related content introduction.

The third chapter introduces the Multi-Criteria Decision-Making method in detail. This paper focuses on the Analytic Hierarchy Process method, calculation steps and methods, as well as the practical application scope and examples of the Analytic Hierarchy Process method.

The fourth chapter will use the Analytic Hierarchy Process method to compare the current accounts of ten Chinese Banks according to different factors from the perspective of customers. Make the best choices for your customers to open current accounts.

This chapter will include calculations and explanatory descriptions as well as thesis results. The research conclusions of this thesis will be presented in the last chapter, and the topic of this paper will be reviewed comprehensively.

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2 Characteristics of FinTech

In this part, we will first introduce the relevant knowledge of Banks, and then introduce what is the FinTech? Then will introduce the current application of FinTech in Banks.

2.1 Characteristics of Banking System

Banks are financial institutions established in accordance with the law to operate money and credit business. They are the product of the development of commodity money economy to a certain stage. As one of the financial institutions, banks are divided into central banks, policy banks, commercial banks, investment banks and World Banks. The composition of the banking system are:

- the central bank,
- commercial banks,
- specialized banks.

The central bank is the core of the banking system, a special governmental financial institution transformed from a commercial bank. In many countries, it is an integral part of the government, an administrative agency that manages other financial institutions on behalf of the government. In the national economy in an important position, responsible for the implementation of the state's financial (monetary) policies, regulating monetary credit, intervention in the economy. It has different functions from the general commercial banks, that is, the government's bank, the issuing bank and the bank of the bank.

Commercial banks are the mainstay of the banking system. It collects funds by taking deposits and provides credit to businesses. It is mainly financed by operating deposits, so it is called a deposit-taking bank in some countries. Commercial banks are organized in two forms: private banks (sole proprietorship or partnership) and joint-stock banks. In the early days of capitalism, private banking was the dominant form. In the era of monopoly capitalism, equity banks replaced private Banks as the dominant form. As the commercial banking system occupies a major share in the deposit and loan business, the large commercial Banks have a huge network of branches at home and abroad, are closely related to enterprises, and have a wide range of business, so commercial banks occupy a dominant position in the capitalist banking system.

Specialized banks refer to all kinds of specialized banks set up by the government in order to intervene in the economy and foster the development of a certain economy in a focused and planned way, such as exim bank, development bank, savings bank, long-term credit bank, trust bank and agricultural bank. Other financial institutions include non-bank financial institutions, such as insurance companies, leasing companies, financial companies, credit unions, pension funds, etc.

In the next section, will be introduce the relevant knowledge of the banking system, about the characteristics of the bank and the basic functions of the bank, which are related to the later FinTech knowledge.

2.1.1 Characteristic of Banks

The object of commercial banks are not common goods, but money, money, and the scope of activities of commercial banks is not production circulation field, but field of monetary credit, commercial bank is not directly engaged in commodity production and circulation enterprises, it is engaged in commodity production and circulation enterprises to provide financial services.

As special banks, commercial Banks are different from central banks and policy-based financial institutions in terms of their operation nature and objectives. Commercial banks aim at making profits and emphasize the principles of profitability, safety and liquidity in the operation process.

General commercial banks do not have the right to issue currency. The traditional business of commercial banks mainly focuses on the deposit and loan business. Commercial banks are chartered by the state and the banking supervision institution of the state council is the department that issues the banking operation license. Commercial banks have the nature of enterprises and the status of legal persons.

2.1.2 Basic Functions of Banks

The function of commercial bank is determined by its nature. The concept is different from that of central bank and investment bank. It is a depository institution rather than an investment institution. The function of commercial bank are :

- regulating the economy,
- credit creation,
- credit intermediary,
- payment intermediary,
- financial service.

Regulating the economy means that commercial Banks adjust the shortage of funds in various sectors of society through their credit intermediary activities, and realize the adjustment of economic structure, consumption ratio, investment and industrial structure under the guidance of the central bank's monetary policy and other countries' macro policies. In addition, commercial Banks can adjust the balance of payments through their financing activities in the international market.

Because of its extensive functions, commercial Banks have a significant impact on the whole social and economic activities and play a special and important role in the whole financial system and even the national economy. With the development of the market economy and the integration of the global economy, commercial Banks in 2012 have highlighted the development trend of functional diversification.

Credit creation function was created by commercial Banks on the basis of credit intermediary function and payment intermediary function Commercial Banks is the ability to absorb a variety of bank deposits, and loans by the absorption of all kinds of deposits and the circulation and transfer settlement on the basis of the check, derived for deposits, loans and extracted in this account, on the basis of cash or incomplete withdrawal, you increase the source of funds of commercial Banks, and finally in the entire banking system, the formation of several times the original deposit derived deposits. For a long time, commercial Banks have been the only financial institutions that can accept current deposits and open checking accounts.

Commercial banks can create and shrink demand deposits through their own credit activities. If there is not enough demand for loans, if deposits cannot be lent, there is no way to create them. On the contrary, if the loan is repaid, the derived deposits shrink accordingly. The degree of contraction is consistent with the degree of derivation. Therefore, for commercial Banks, deposit absorption plays a very important role in their operation.

Credit intermediary is the most basic function of commercial Banks, which can best reflect the characteristics of their business activities. The essence of this function is the accumulation in the bank of all the idle money of society, through its liability business, and its disposal in all sectors of the economy, through its asset business; As the intermediary or representative of the lender and borrower of monetary capital, commercial banks realize the financing of capital, and obtain profit income from the difference between the cost of absorbing capital, interest income of issuing loans and investment income, thus forming bank profits.

Commercial banks became "big traders" buying and selling "capital goods". Commercial banks realize the accommodation between capital surplus and shortage through the function of credit intermediary, which does not change the ownership of monetary capital, but the use right of monetary capital.

Payment intermediary is also one of the functions of commercial banks, which not only act as credit intermediary and monetary fund facilitator, but also assume the function of currency operation. To be the custodian, cashier and payment agent of funds for commercial enterprises, groups and individuals by transferring deposits on the account, acting as customer payment, and on the basis of deposits, exchanging cash for customers, etc. With commercial banks as the center, an endless payment chain and debtor-creditor relationship have been formed in the economic process.

Financial service has become an important function of commercial banks in modern economic life. With the development of economy, the business environment of industrial and commercial enterprises is becoming more and more complicated, and the business competition among banks is becoming more and more fierce. Because of the wide range of contact, the information of banks is relatively flexible, especially the wide application of electronic computers in banking business, banks have the conditions to provide information services for customers.

Consulting services, decision support services for enterprises and other services have emerged, With the development of industrial and commercial enterprises' specialization in production and circulation, many original monetary businesses belonging to the enterprises themselves are required to be transferred to the banks for handling, such as paying wages and paying other expenses on behalf of them. Personal consumption also developed from simple money and goods transaction to transfer settlement.

The modern social life puts forward the requirements of financial services for commercial banks from many aspects. Under the strong business competition power, the commercial banks also continue to explore service areas. Through the development of financial service business, further promote the expansion of asset liability business, and combine the asset liability business and financial services to open up new business areas.

2.2 Characteristics of FinTech in Banking

FinTech is financial technology, which refers to the innovation of products and services provided by the traditional financial industry through various technological means to improve efficiency and effectively reduce operating costs. Today, Due to the improved technology, Banks can compete in many ways, not just on price. Mobile banking is a example.

As in many other industries, financial institutions are scrambling to respond to the widespread adoption of mobile devices by adding mobile websites to support basic transactions. But these early solutions were soon replaced by more fully functional mobile applications. At that point, the advantage shifted to nontraditional industry players, who offered mobile users easy access to services such as person-to-person accounts, billing and payment, and voice recognition.

There are three main reasons for the application of FinTech in multiple banking scenarios: first, the complementarity between the demand for online financial services from e-commerce platforms, consumers and businesses on the platform and online payment workers. In a sense, e-commerce platform is a single point of contact. Enterprises, families and financial service providers can effectively interact with each other through e-commerce platform and become the most effective and widely used way to provide financial services in the future. Second, FinTech has made obvious effects on improving operating efficiency, improving service quality and reducing operating and management costs of Banks. Use of the super counter, centralized operating system; Third, customers' demand preferences for financial service models and channels have changed.

According to the financial technology cases of domestic and foreign banking institutions, cloud computing, artificial intelligence, big data and block chain are widely used in banking business. This part briefly introduces the application scenarios of the above four technologies in the banking industry. The application of FinTech in banking industry are:

- cloud computing,
- artificial intelligence (AI),
- big data,
- Blockchain,
- cashless society.

Cloud computing is a delivery and use mode of IT infrastructure, with flexible, flexible and easy to expand the technical characteristics, users can according to the demand, through the network to obtain the necessary soft and hard platform and platform resources. Since cloud computing is a technical support and management method for resource sharing, it can provide users with efficient data storage and data processing capabilities. Cloud computing can realize the separation of front and background business of Banks, improve the efficiency of business processing, and improve customer experience.

Banking institutions realize the separation of front and back office services by building private cloud. The front desk is specialized in real-time trading, customer service and marketing, while the background is centralized to process data, which greatly improves the efficiency of business processing and customer experience. Cloud computing can build new financial business systems and promote business innovation. As cloud computing can provide efficient data storage and data processing capabilities, the front desk staff of banking institutions can access a number of services such as channel management and bank cards through intelligent devices connected to the cloud computing platform.

Artificial intelligence is a computer program that relies on the perception of the surrounding environment to make reasonable actions to maximize its benefits. The development of artificial intelligence has gone through three waves, its technology is still in the process of maturing, the concept has also basically formed a consensus. Artificial intelligence is widely used in banking business. One is to replace the manual work, simplify the business process.

Chatbot and voice robot are used to interact with customers and answer their questions without any human intervention, which greatly improves the efficiency of background services. Using artificial intelligence to replace manual operation and handle some low-value processes such as file scanning and parsing; Combined with big data technology, it can realize intelligent

credit investigation and approval. Second, the use of big data to improve service and management capabilities.

Using a large number of customers' unstructured data to analyze behavior patterns and business needs, and providing personalized services and investment decisions for customers according to their personal data; Through the screening of daily business transaction data, identify potential risks, timely control risks, analyze loan customer data, assess the repayment willingness and repayment ability of the lender before the loan, monitor the abnormal behavior of the customer during the loan, assess the credit score after the loan, and improve the risk control ability.

Big data is the large capacity, types, access speed, low density value as the main characteristics of the data collection, is developing fast for a huge number, source dispersion, format a variety of data acquisition, storage, and correlation analysis, discover new knowledge and create new value, promote new ability of a new generation of information technology and services business. According to promote the development of large data action guidelines (guo [2015] no. 50) about the definition of big data, It can be seen from the concept of big data that big data involves three aspects: resource, technology and application. With the increasingly extensive application of big data, Banks with massive amounts of data are deeply applying big data in various scenarios. Fine management of the business.

Collect and process transaction data of customers' bank card shopping, investment and financial management, collect and sort the data, analyze the data with relevant technologies, feedback the analysis results to customers, provide Suggestions for customers' consumption and investment decisions, and achieve the purpose of improving customer experience; At the same time, collect and analyze customer consumption and investment transaction data, further analyze and understand customer income level, consumption and investment preference, form a customer relationship management system (CRM), and design various marketing plans based on this, and implement accurate marketing to customers; In the credit business, we can also make use of customer information and use big data technology to analyze customer's loan and repayment intention, so as to reduce labor processing cost and improve efficiency, especially in solving the problem of "financing difficulty for small and micro enterprises".

Blockchain is a distributed ledger constructed by a special underlying technology, which can be based on a decentralized network to create an untamable ledger, and all records

are recognized by the consensus mechanism, distributed data storage, point-to-point transmission, consensus mechanism, encryption algorithm and other computer technology new application mode. There are still many doubts and difficulties to be solved in the application of blockchain technology in the banking business. At present, the application of blockchain technology by banking institutions is still in the stage of exploration and experimental application.

Domestic commercial banks mainly focus on commercial paper, payment, information storage, electronic transactions and other fields to carry out experimental applications. Foreign commercial Banks set up a technology alliance to jointly explore and develop the application of blockchain technology in banking business, mainly focusing on trade finance, digital currency, bill trading, payment and settlement and other fields.

Cashless society refers to a society in which cashless payment methods such as credit card payment and mobile payment become the mainstream payment methods by replacing cash payment with non-cash payment. Cashless payment has the characteristics of high efficiency and convenience, which is the direction of social development in the future.Mobility and connectivity will converge to make the long-awaited cashless society a reality.

Mobile apps allow users to avoid using wallets or waiting in line at checkout. Integration and simplification make the checkout process easier. Geo-tagging, bio-licensing and tokens all protect the parties to the transaction from fraud. Consumers are embracing these technologies. At the same time, one outcome of the struggle to differentiate themselves as issuers relinquish control of the e-payment platform's customer experience could be to consolidate the payments market.

At this point, the advantage may be in favour of large independent or online issuers, which beat bank issuers by virtue of their size. Either way, the advantage is the mastery of most of the customer's payment activities and all of the valuable data related to lifestyle or preferences. Another possible outcome is the fragmentation of the payments market. As consumers buy more payment cards, credit cards will lose their ability to retain customers for financial institutions. It is also harder for financial institutions to check customers' credit standing. There is also the possibility of credit cards being completely replaced. If credit cards are replaced, retail financial institutions need to find alternative ways to generate revenue from credit card lending.

They also need to create new ways to drive customer loyalty as the trend towards lower fees for bank account transactions shifts. Whatever happens, financial institutions are likely to lose at least some of their impact on their clients' trading experience. Data from specific customer groups will be an important way to gain market share in diversified markets. And financial institutions will become more dependent on marketing partners to drive the use of cards among specific merchants.

2.3 Characteristics of FinTech in China

The next section introduces the development history of FinTech in China. It has gone through many stages of development and has been applied more and more widely in China.

2.3.1 The Development of FinTech in China

Ba shusong, chief economist of the China banking association and the Hong Kong stock exchange of China, divided FinTech into three stages from the perspective of network technology driving changes in the financial industry:

The first phase can be defined as the financial IT phase, or FinTech version 1.0. At this stage, the financial industry realizes the electronization and automation of office and business through the application of traditional IT software and hardware, thus improving the business efficiency. At this time, IT companies usually do not directly participate in the business links of the company. IT system is a very typical cost department within the financial system, and now Banks and other institutions often discuss the core system, credit system, clearing system, etc., which is the representative of this stage.

The second stage can be defined as the Internet finance stage, or FinTech 2.0 stage. At this stage, mainly financial structures, online business platform, the use of the Internet or mobile terminal channels to collect vast amounts of user and information, to implement the assets in the financial business, transaction is end, end, end any combination of interconnectivity of funds, nature. Is to change the traditional financial channels, and realize the information sharing and business integration, one of the most representative including Internet insurance fund sales, lending to the P2P network, the Internet.

The third stage is FinTech 3.0. At this stage, the financial industry by big data and cloud computing, artificial intelligence, chain blocks, these new IT technology to change traditional sources of financial information collection, risk pricing model, the investment decision-making process, the credit intermediary role, so IT can greatly improve the efficiency of traditional financial, solve the deficiency of traditional financial, on behalf of the technology is the major data inquiry, intelligent, supply chain finance.

China is basically in the late stages of FinTech 1.0. Once virtual reality technology is mature, it basically means FinTech 1.0 era is over and it enters FinTech 2.0 phase. From the development history of financial industry, the embryonic form of banking appeared in the 12th century. The emergence of stocks in the mid-16th century marked the beginning of the securities industry. The 18th century saw the rise of insurance. Since the 1960s, Banks, securities and insurance industries have started to replace manual operations with computers, marking the beginning of the process of informatization.

Although the starting point of informatization of banking, securities and insurance industry is different, the development process is similar, generally going through the following four stages: offline business processing, online business processing, business decision informatization, business integration and decision intelligence. Here, these stages of China's financial development are summarized into several key words are:

- electronic stage of finance,
- financial informatization stage,
- internet finance stage,
- FinTech stage.

Electronic stage of finance, which took place from the 1970s to the early 21st century, has two processes of "replacing manual work" and "data centralization".

The first process is the "replacement of manual", took place in the 1970s to the early 1990s, part of the business began to replace manual operations in the way of computer processing. In the 1970s, the bank of China introduced the first ricoon-8 mainframe system, which opened the prelude to the development of electronic finance in China. Part of the manual business of the bank is processed by computers, and the main software is written in COBOL language, which realizes the automatic processing of daily business such as corporate business, savings business, joint bank reconciliation business, and preparation of accounting statements.

In the 1980s, China's banking industry has introduced Japan's m-150, IBM's 436l, 4381 mainframe system, further promote the application of various counter business processing systems in large and medium-sized cities. In the 1990s, the mainframe of each major professional bank information system was upgraded one after another, such as the introduction of IBM mainframe ES9000 series mainframe to expand the scope of business processing and enhance business processing capacity.

On April 1, 1991, the official operation of the electronic link on the satellite communication system of the people's bank of China marked that China's banking information system had entered the stage of comprehensive network. In addition to joining the electronic banking system of the people's bank of China, various forms of automatic inter-city clearing systems have been established in some large and medium-sized cities.

Such as: city run disk clearing system, city network clearing system and city extension processing system. At the same time, after the bank of China, other major Banks have also joined the SWIFT system as a member, so that the level of international settlement business has been greatly improved.

In the satellite communication system of the people's bank of China, in addition to the application of banking services, the national securities quotation and trading system has also been developed, so that the securities trading in the country has formed a unified, fair and reasonable market. The extensive application of IT technology in the financial industry has opened a brand new page. In 1993, the decision of the state council on the reform of the financial system made it clear that we should speed up the development of electronic finance.

Under the unified arrangement of the state council, the people's bank of China and the banking financial institutions will jointly explore the road to the electronic construction of the industry, continue to use modern communication technology, computer technology and other financial services and management, improve the working efficiency of services, improve the level of business automation. The second is "data centralisation", which took place in the mid-to-late 1990s and early 2000s.

This stage is marked by data centralization, that is, the realization of nationwide bank computer processing network, interconnection, payment and clearing, business management and office gradually realize computer processing. In September, 1999, icbc launched the "9991"

data concentration project. In 2001, almost all large financial institutions without exception embarked on the road of data concentration. In the second half of 2002, the industrial and commercial bank of China (ICBC) completed the data concentration construction project, and shenzhen development bank implemented business outsourcing.

Financial informatization stage, which took place from the early 21st century to 2006, was marked by the rise of "data application" and "online banking". The bank completes the centralized processing of the business, uses the Internet technology and the environment to innovate the financial products, develops the online financial service and so on. From "financial electronization" to "financial informatization", it is not only a problem of concept change, but also a herald of a new era.

Information than electronic contains more connotation, is the development of electronic depth. In contrast, the financial information system in the electronic age is a closed system designed to meet the needs of internal management, while the financial information system in the information age should be combined with modern information technology to reconstruct the financial industry and establish an open financial information system.

At this stage, the whole world entered an Internet era with the rapid development of information technology. In December 2001, China joined the WTO, and a new competitive pattern emerged in China's financial market, which was already highly competitive. To gain market advantage, financial enterprises must strengthen customer relationship management, financial product innovation and internal information construction.

At this time, the significance of financial informatization is not limited to the financial industry itself, but financial informatization is an important part of the entire social informatization. With the development of e-commerce, the information age has put forward new requirements for financial enterprises, which require the payment system interface of financial enterprises to be connected to the Internet of enterprises, the Internet of the government and the Internet of consumers' homes.

Domestic financial enterprises have touched the net, launched online payment system. Bank of China took the lead in launching a series of online banking products. Bank of China customers with a Great Wall debit card can download the bank's e-wallet software from the Internet to conduct a variety of operations, including online inquiries, transfers, payments and

settlements. Later, the head office of China construction bank formally launched online banking services, followed by online personal foreign exchange trading, securities margin automatic transfer and other services. China merchants bank began to launch the "one card" and "one network" online business.

CMB's online business also includes online corporate banking, online personal banking, online securities, online real-time payment and other functions. In recent years, information technology has been widely penetrated into the financial operation and management of each institution, each business, each link of the application level of information technology, networking and e-commerce links become an important standard to measure the "new world, new finance, new bank". In order to catch up with the trend and adapt to the new competitive pattern under the WTO situation, Chinese financial enterprises have stepped up their pace and entered the information age.

In 2001, the bank of China established an independent CA certification center, becoming the first institution in China to provide digital electronic certification services for overseas clients. This enables the bank of China to provide advanced and efficient services for overseas e-banking and overseas basic cash management. In September 2002, the head office of China construction bank set up the e-banking department, and 37 first-level branches in China opened the online banking business, with the business developing exponentially.

Unified online bank "e lu tong" brand, launched the national long card payment, counter signing, check fast, online double currency credit card business and other functions. At the end of 2003, after the transformation of the comprehensive business system platform, Shanghai pudong development bank focused on products, financial management, investment and services to build an online banking service platform.

Internet finance stage is from 2007 to 2016. In 2007, paipaidai was established. The move became a landmark in China's history of FinTech. At this point, FinTech really penetrated into the core business of finance and derived a series of new methods of risk assessment according to the characteristics of the Internet. At the same time, China's online banking market developed rapidly in 2007, with an explosive growth in transaction volume. The transaction volume of personal online banking and corporate online banking reached 245.8 trillion yuan, with a month-on-month growth rate of 163.1%.

The popularity of personal investment and finance market has led to the rapid development of personal online banking. In 2007, with the rising market value of Chinese stock market, the personal finance market was extremely hot, and the trading volume of stocks and funds increased rapidly. The explosive growth of e-commerce transaction volume also drives the growth of online payment and pushes financial IT into a new development stage.

2007 was a year of rapid development for China's online shopping market. Calendar year according to the CNNIC survey data show that the size of the market in 2007 up to 56.1 billion yuan, up 117.4% from a year earlier, in which both in C2C and B2C e-commerce transactions respectively by 125.2% and 923% of high-speed growth, the explosive growth of online shopping, especially represented by taobao C2C transactions increased dramatically, for pulling function of online payment is very huge.

In 2008, I think the world's most strategic bank of China integrated the scattered network banking system, and integrated the previously separated corporate network banking and personal network banking into the new version of online banking, and established a complete and initial scale of online banking system, the number of customers and trading volume has been rapidly increased. On May 18, 2011, the people's bank of China formally issued third-party payment licenses, and in 2011, the central bank issued payment licenses to 27 third-party payment companies, formally marking the beginning of the combination of Internet and finance.

In 2013, the sudden birth of yu 'ebao gave a great shock to traditional finance, so funds and insurance companies have launched a large-scale strategic layout of the Internet. Because of the advantages of experience and technical ability, the Internet enterprises' position has been enhanced unprecedenently. On October 16, 2014, ant financial services group was officially established. As traditional Banks rebuild Internet finance, e-banking departments have been upgraded to Internet finance departments.

In 2014, Internet finance was included in the government work report, which proposed to "promote the development of Internet finance". On July 18, 2015, ten ministries and commissions jointly issued the guidance on promoting the healthy development of Internet finance.

FinTech stage is from 2016 to now. In 2016, the financial stability board (FSB) put forward a clear definition of FinTech: "FinTech is technology-driven financial innovation", which aims to use the achievements of modern science and technology to transform or innovate financial products, business models, business processes, etc., so as to improve the quality and efficiency of financial development.

It is now a global consensus. On August 8, 2016, the state council issued the 13th five-year plan for scientific and technological innovation, which clearly proposes to promote innovation in scientific and financial products and services, and build a national scientific and financial innovation center. The FinTech industry has officially become the guiding direction of national policy.

The development of information technology "much starker choices-and graver consequences-in" Banks planning regulatory guidelines "clearly pointed out that" large and medium-sized Banks to data governance as an important institutional construction and basic work, unified data standards, improve the quality of data, deepen the data application, effectively support the business development bank, effectively enhance the level of bank management ". The transformation demand and cost pressure of commercial Banks have also made the regulatory authorities realize the necessity of financial cloud, so it is proposed that the information system of future banking industry for Internet scenarios should be all migrated to the cloud computing platform, and other core systems should go to the cloud in batches.

The need for the financial cloud has led to the emergence of cloud service providers. At the end of 2016, China merchants bank launched Capricorn wisdom investment, which applies artificial intelligence and quantitative trading to the most core industries of China's financial industry.

In March 2017, "artificial intelligence" first appeared in the government work report, and the artificial intelligence industry was promoted as a national strategy. Artificial intelligence is gradually opening up application scenarios in the financial field, including credit investigation, big data risk control, anti-fraud, intelligent customer service, intelligent investment and research.

In May 2017, the people's bank of China established the FinTech committee, aiming to effectively make strategic planning and policy guidance for the development of FinTech in

China and guide the correct use of new technologies in the financial sector. In 2018, the wholly-owned FinTech company of China construction bank was inaugurated in Shanghai, as the first FinTech company established by a large state-owned bank, jianxin FinTech co., LTD.

In 2018, China construction bank's jiujiang road branch in Shanghai became the country's first unmanned bank, with robot customer service, remote service and AR/VR experience services. In May 2019, icbc technology co.LTD. set up by icbc through an affiliate, was officially opened in xiongan new area, hebei province, with a registered capital of 600 million yuan. It is the first FinTech company in the banking industry to set up in xiongan new area. So far, China has at least 8 Banks as financial technology subsidiaries. In October 2019, the people's bank of China issued the FinTech development plan (2019-2021), which is of great significance as the first top-level document regulating the development of FinTech.

In the first chapter, it is stated as follows: against the background of a new round of scientific and technological revolution and industrial transformation, financial technology is booming, and information technologies such as artificial intelligence, big data, cloud computing and Internet of things are deeply integrated with financial services, providing a steady stream of innovative vitality for financial development. To pursue innovation-driven development and accelerate the strategic deployment and security application of FinTech has become an inherent need and an important choice for deepening financial supply-side structural reform, enhancing the financial service capability of the real economy, and taking good measures to prevent and defuse financial risks.

FinTech has become a new engine for financial transformation and upgrading. The core of FinTech is to utilize the achievements of modern science and technology to optimize or innovate financial products, business models and business processes. Using machine learning, data mining, intelligent technologies such as contract, financial technology can simplify the supply and demand both sides trading links, marginal cost, reduce the financing and create a new way to touch up to customers, promote the financial institutions in the profit model, business form, the assets and liabilities, credit relationship, channel development aspects of continuous optimization, constantly enhance the core competitiveness, fu can continuously for the transformation and upgrading of the financial sector. FinTech has become a new way for financial services to serve the real economy.

The development of FinTech can quickly capture changes in market demand in the era of digital economy, effectively increase and improve the supply of financial products, and facilitate supply-side structural reform. By means of advanced science and technology to the enterprise management running data modeling analysis, real-time monitoring of cash flow, information flow and logistics, provide scientific basis for rational allocation of resources, guide the capital flow from high pollution, high energy consumption of excess production capacity, industry to high-tech, high value-added new industries, promote the real economy healthy and sustainable development.

FinTech has become a new opportunity to promote the development of inclusive finance. FinTech will continue to narrow the digital divide, solve the problems of high cost, insufficient revenue, and difficulty in combining efficiency and security in the development of inclusive finance, and help financial institutions to lower the service threshold and cost, and integrate financial services into the application scenarios of people's livelihood. Will use financial technology to provide precise drip irrigation support, ease the difficulty and high cost of financing for small and micro businesses, and increase financial support for agriculture. We will provide financial support for winning the battle against poverty and implementing the strategy of rural revitalization and coordinated regional development.

FinTech has become a new weapon to guard against and defuse financial risks. Big data, artificial intelligence and other technologies are used to establish financial risk control model, effectively identify high-risk transactions and intelligently perceive abnormal transactions, so as to realize early identification, early warning and early disposal of risks, and improve the ability to prevent financial risks.

The use of digital regulatory protocols, intelligent risk control platform and other regulatory technology means to promote the transformation of financial supervision mode from post-supervision to pre-supervision and in-process supervision, effectively solve the problem of information asymmetry, eliminate information barriers, ease the regulatory delay, and improve the efficiency of financial supervision.

2.3.2　Electronic Payment in China

China has gone through thousands of years of historical changes. We have known that the difference in pay way will bring great convenience to our life. In China today, payment methods have changed dramatically without even realizing it.

The transaction volume of taobao is only 57.1 billion yuan a day during the shopping festival on November 11. The most direct basis is the change in the payment method nowadays. China the payment method has undergone these changes:

- the first online bank,
- VISA entered China with the founding of unionpay,
- E-commerce era,
- Alipay,
- mobile payment.

The first online bank in 1996. With the increase of the number of card holders in China and the increase of banking services, people need more convenient banking services. Therefore, in 1996, bank of China took the lead in establishing online banking services, but it has not been accepted by people. The first online banking service was on March 6, 1998. China's first Internet payment was realized, with the buyer and seller, 21vianet communication technology co., ltd. and Mr. Wang keping of CCTV, becoming the first online virtual merchant and the first person to make online payment in China, respectively.

Although the major media gave long reports, but did not arouse public response. China's first real e-bank is China merchants bank in July 6, 1998 launched the "one network - online payment" business.

VISA entered China with the founding of unionpay. VISA is an alliance of 21, 000 financial institutions. VISA is a brand of credit cards that can be used to make withdrawals or purchases at supported atms, Banks or stores around the world. VISA is the earliest alliance of international financial institutions. It entered China in 1993, but did not really enter the Chinese market until 2002, when China unionpay was founded.

In China since 1985, the bank of China issued the first card in the "silver", since 1989, icbc "peony", in 1990 the construction bank to issue the "dragon", the agricultural bank issued

in 1991 the "golden spike", in 1992 bank card "development", bocom in 1993 issued "Pacific card" and from then on, China gradually entered the card consumption age. Before the establishment of unionpay, due to the independence of the Banks, several POS machines of different Banks could be seen at the counters of major merchants. People could only use the POS machines of the corresponding Banks when they used cards for consumption.

Although Banks have gradually built a consumption network in cities, they are still not allowed to share a POS machine with each other. Banks are also worried about this way of consumption, and VISA is also hesitating in China. Therefore, in 2002, China unionpay was established and cooperated with VISA, ushering in the era of "double-standard card" consumption.

With the support of VISA's technical talents, unionpay has also grown rapidly in China. It has developed from an inter-city payment method of swiping cards to a bank card with the logo of unionpay, which can now be used by any POS machine in China as long as the bank card with the logo of unionpay is used.

E-commerce era. With the development of the Internet, the global e-commerce boom is quietly rising, and the good credit system in Europe and the United States has laid a good foundation for the rise of e-commerce. In 1996, the term e-commerce first came into the sight of the American people.

This period coincided with the vigorous implementation of China's strategy of "going out and bringing in" and the rapid development of China's Internet. According to statistics, the number of Internet users in China in 1996 was 100,000; in 1999, it was 4 million, an increase of 40 times; in 2000, it reached 22.25 million, an increase of more than 200 times. In 1999, "8848" planned the "72-hour survival event", in which 12 people were locked in the room for 72 hours to buy necessities and food through the Internet. Through the Internet, people bought yonghe soybean milk. In the same year, the first C2C website appeared in China, ebay founded by shao yibo.

That same year, Mr. Ma led more than a dozen people to invest 500,000 yuan in hangzhou and found alibaba (Taobao). Followed by people in the cross-century millennium, electronic commerce also obtained the considerable development, but the first two years e-commerce sites seems to be no profits and Ebay Ebay acquired by the United States in 2002,

over 8848 and some other e-commerce sites due to insufficient funds fall, compared with Ebay fee, free taobao during the SARS epidemic in 2003, in the spring of life. SARS is rampant, people do not go out of the house, through taobao to buy their own supplies.

Alipay. In October 2003, alipay entered the stage of history, opening a new chapter of online payment methods for people. Alipay has solved the trust problem of Internet shopping in China through third-party custody of funds, so alipay has developed rapidly and quickly become the largest third-party payment service on the Internet. In 2004, alipay broke away from taobao and became an independent third-party payment platform.

According to alibaba's prospectus. In fiscal year 2014 (ending March 31), the total payment amount of alipay reached 3,872 billion yuan, with the average daily payment volume exceeding 10 billion yuan. Seeing the size of the online payment market, other Internet institutions have launched their own payment services. Following in the footsteps of alibaba, tencent launched its tenpay business in 2005, combining its paipai and QQ businesses. Jd also bought online banking online last year to make up for its loss in the payment sector. Nowadays, online payment has become a common way of payment.

Mobile payment. On August 9, 2013, WeChat 5.0 was released, and WeChat payment function was added, challenging a dominant alipay. Unlike previous payments, the focus of this payment war is on the mobile payment access and habits.

At the beginning of 2014, alibaba and tencent respectively subsidized more than 1 billion yuan to consumers of their own invested taxi-hailing apps to cultivate users' mobile payment habits. On September 10, 2014, at the Apple press conference, Apple CEO Tim cook unveiled Apple pay, a mobile payment solution for Apple, and joined the mobile payment army. For now, companies including unionpay and alibaba are actively reaching out to apple in order to gain a partner position in its landing solution in China and consolidate their position in mobile payments.

3 Methodology of Multi-Criteria Decision-Making

Multi-Criteria Decision-Making（MCDM）is a set of methods to help the, decision makers to describe, evaluate, rank and select alternatives according to several criteria. Two main classes of methods are:

- MOP (multi objective programming),
- MCE (multi criteria evaluation).

In the following sections we will introduce some approaches to multi-criteria decision making.

3.1 Decision-Making Method

There are many ways to make multi-criteria decisions and they are:

- Analytic Hierarchy Process (AHP),
- Data Envelopment Analysis (DEA),
- TOPSIS.

Analytic Hierarchy Process (AHP) was put forward by professor t. l. Saaty of the university of Pittsburgh, an American operational research scientist, in the early 1970s. AHP is a simple, flexible and practical multi-criteria decision-making method for quantitative analysis of qualitative issues.

Its characteristic is through the various factors of complex problems into interconnected orderly level, streamline, according to the structure of a certain objective reality of subjective judgment (mainly is the comparison of the two) the expert opinion and analysis of the objective judgment result directly and effectively combined with the importance of a two level elements compared to quantitative description.

Then, the weights reflecting the order of relative importance of each level of elements are calculated mathematically, and the relative weights of all elements are calculated and sorted by the total order between all levels.

The method was introduced to China since 1982, with its combination of qualitative analysis with quantitative analysis to deal with all kinds of the characteristics of the decision

factors, and the advantages of the system is flexible and concise, quickly in China's social and economic fields, such as energy systems analysis, urban planning, economic management, scientific research evaluation, etc., has been widely attention and application.

Data Envelopment Analysis (DEA) is a new research field of operations research, management science and mathematical economics. It is a quantitative analysis method to evaluate the relative effectiveness of comparable units of the same type according to multiple input indexes and multiple output indexes by linear programming method.

DEA method and its model have been widely used in different industries and sectors since it was put forward in 1978 by a. c. harnes and w. w. cooper, the famous American operational research experts, and it has shown its unique advantages in dealing with multi-index input and multi-index output..

TOPSIS（Technique for Order Preference by Similarity to an Ideal Solution）is a sequential optimization technique of ideal target similarity, and it is a very effective method in multi-objective decision analysis. It through after the normalization of data standardization matrix, find out the optimal target and multiple targets in the worst target (represented by an ideal solution and an ideal solution), calculate the evaluation target and ideal solution and the distance of the ideal solution, get the goal and ideal solution degree, according to the size of the degree of sorting, ideal solution as the basis of evaluation target quality.

The value of closeness degree is between 0 and 1. The closer the value is to 1, the closer the corresponding evaluation target is to the optimal level. Conversely, the closer the value is to 0, the closer the evaluation target is to the worst level.

This method has been successfully applied in many fields, such as land use planning, material selection evaluation, project investment, medical and health care, etc. It has obviously improved the scientificity, accuracy and operability of multi-objective decision analysis.

3.2 Analytic Hierarchy Process (AHP)

AHP (Analytic Hierarchy Process) is a practical multi-plan or multi-objective decision making method, which combines qualitative analysis with quantitative analysis. It is often used in multi-objective, multi-criterion, multi-factor and multi-level unstructured complex decision

problems, especially strategic decision problems. In the following two parts mainly introduce the calculation steps of AHP, practical application.

3.2.1   The Calculation of AHP

Analytic hierarchy process (AHP) according to the nature of the problem and to achieve the overall goal of, the problem is decomposed into different form factors, and according to the correlation between influence factors and subordinate relations will be according to the different hierarchical aggregation combination, formed a multi-level analysis structure model, and eventually make the question comes down to the lowest layer (for decision scheme, measures, etc.) relative to the top (total goal) the relative important or the relative merits of determining value order of the scheduled.

For example, someone is going to buy a refrigerator, he is on the market of 6 different types of refrigerator after understanding, in the decision to buy which style, often is not directly compared, because there are many factors can not be compared, but select some intermediate indicators to investigate. Such as refrigerator capacity, refrigeration level, price, type, power consumption, external reputation, after-sales service.

Then consider the various types of refrigerators in each of the intermediate standards below the pros and cons of the sort. With the help of this sort, the final purchasing decision is made. In decisions, because among 6 kinds of refrigerator for each standard order is not consistent, therefore, policymakers must first the importance of the seven standard an estimate, given a sort, then 6 kinds of refrigerator separately for each standard sorting weight, finally, the information data, by sorting weight for general objective is to buy a refrigerator. With this weight vector, the decision is easy. The calculation step are:
- establish the hierarchical structure model,
- construct judgment (pair comparison) matrices,
- hierarchical single sort and its consistency check,
- hierarchical total sort and its consistency check.

Establish the hierarchical structure model, the objectives, factors (decision criteria) and objects of decision are divided into the highest, middle and lowest levels according to their relations.

The highest level is the purpose of the decision, the problem to be solved. The lowest level is the alternative when making a decision. The middle layer refers to the factors to be considered and the criteria for decision making. For the two adjacent layers, the upper layer is called the target layer and the lower layer is called the factor layer.

Construct judgment (pair comparison) matrices, when determining the weight of each level between various factors, if it is the result of the qualitative, is often not easy to be accepted, thus Saaty consistent matrix method is put forward, that is not all factors are put together to compare, but two two compare, at this time on a relative scale to minimize properties of different factors to compare the difficulty, in order to improve the accuracy.

For example, for a certain criterion, the schemes under it are compared in pairs and graded according to their importance. a_{ij} is the comparison result of the importance of factor i and factor j. Table 1 lists the nine importance levels given by Saaty and their values. A matrix formed by pairwise comparisons is called a judgment matrix. The judgment matrix has the following properties:

$$a_{ij} = \frac{1}{a_{ji}} \tag{3.1}$$

The scale method of judging matrix element a_{ij} is as follows Tab 3.1:

Tab. 3.1 Evaluation Scale Interpretation

Interpretation ($i\,/\,j$)	quantized value
equal importance	1
moderate importance	3
more importance	5
highly importance	7
extreme importance	9
The median of two adjacent judgments	2,4,6,8

Then it would be possible to compile Saaty's matrix that has this form:

$$A = \begin{pmatrix} 1 & a_{12} & \cdots & a_{1n} \\ 1/a_{12} & 1 & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ 1/a_{1k} & 1/a_{12} & \cdots & 1 \end{pmatrix} \qquad (3.2)$$

Hierarchical single sort and its consistency check. The eigenvector corresponding to the largest eigenroot λ_{max} of the judgment matrix is denoted as W after normalization (making the sum of the elements in the vector equal to 1). The element of W is the sorting weight of the relative importance of a factor of the same level to the factor of the previous level. This process is called hierarchical single sort.

Consistency test is needed to confirm the single order of hierarchy. The so-called consistency test refers to determining the allowable range of inconsistency for A. Where, the unique non-zero characteristic root of n-order uniform matrix is n; The largest characteristic root $\lambda \geq$ n of n-order positive reciprocal matrix A, if and only if $\lambda = $ n, A is the uniform matrix.

Since λ continuously depends on a_{ij}, the larger λ is than n, the more serious the inconsistency of A is. The consistency index is calculated by CI, and the smaller CI is, the greater the consistency is.

The eigenvector corresponding to the maximum eigenvalue is used as the weight vector of the influence degree of the factors being compared on a certain factor in the upper layer. Therefore, the degree of inconsistency of A can be measured by the value of $\lambda - $ n. The consistency index is defined as:

$$CI = \frac{\lambda - n}{n - 1} \qquad (3.3)$$

CI is the consistency index. CI=0, it's completely consistent; CI is close to 0, with satisfactory consistency;The larger the CI, the greater the inconsistency.

To measure of CI, random consistency index RI was introduced:

$$RI = \frac{CI_1 + CI_2 + \cdots + CI_n}{n} \qquad (3.4)$$

Among them the random consistency index RI is related to the order of the judgment matrix. Generally, the greater the order of the matrix, the greater the possibility of consistent random deviation. The corresponding relation is shown in table 3.2:

Tab. 3.2 Random index

Order	1	2	3	4	5	6	7	8	9	10	11	12	13
RI	0.00	0.00	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49	1.52	1.54	1.56

Source: Principia Mathematica Decernendi (Mathematical Principles of Decision Making) Thomas L. Saaty. P121

Considering that the deviation of consistency may be caused by random reasons, it is necessary to compare CI and random consistency index RI to obtain the test coefficient CR when testing whether the judgment matrix has satisfactory consistency. The formula is as follows:

$$CR = \frac{CI}{RI} \tag{3.5}$$

In general, if CR < 0.1, the judgment matrix is considered to have passed the consistency test; otherwise, it will not have satisfactory consistency.

Hierarchical total sort and its consistency check. calculating the weight of the relative importance of all factors at a certain level to the highest level (the total goal) is called the total order of levels. This process proceeds from the highest level to the lowest level.

3.2.2   Practical Application of AHP

In the systematic analysis of social, economic and managerial problems, people are often confronted with a complex system composed of many interrelated and interrelated factors.

The analytic hierarchy process (AHP) provides a new, simple and practical method for the study of such complex systems. Analytic hierarchy process is mainly used in the fields of safety science and environmental science.

The main applications of safety production science and technology include coal mine safety research, hazardous chemicals evaluation, oil depot safety evaluation, urban disaster emergency response capability research and traffic safety evaluation.

The applications in environmental protection research mainly include: water security evaluation, water quality index and environmental protection measures, ecological environment quality evaluation index system and the determination of pollution sources in aquatic wildlife reserves.

In addition, the analytic hierarchy process can be more used to guide and solve the problems encountered in personal life, such as the choice of major, the choice of job and the choice of house, etc. By establishing the hierarchical structure and measuring indicators, the working thoughts and thinking levels can be clarified.

In the next part, we will also use analytic hierarchy process method to analyze and calculate. Among the ten Chinese banks, we choose one bank that is most suitable for Chinese college students to open current account through comparative analysis. This is also the actual application of analytic hierarchy process method in life.

4　Comparison of Current Accounts in China

There are many banks in China, and they are active in the current Chinese financial market. Their main goal is to attract customers with different needs through different advantages. In order to choose the right bank and make everyday life more convenient, customers will consider different factors which will influence their decision. Next, will be select 10 Chinese banks in the following section, and compare and analyze 10 current accounts of 10 Banks according to five indicators to select the most suitable bank accountsf for Chinese university students.

4.1　Client Profile

Bella is a 20-year-old Chinese university students, she lives in Urumqi Xinjiang, her living expenses 1500 RMB a month, because she and her parents can skilled use of mobile devices and electronic banking, her parents every month on time will be living with her pay treasure account, she can pass the alipay consumption directly, can also be extra money withdrawal into her bank account used to savings.

At this time, she needs to open a bank account for easy cash withdrawal and online transfer to make her life more convenient. She hopes that this bank card will be cheaper for her family to transfer and remit to different Banks. We will choose a bank to open a current account for her according to her specific needs.

4.2　Bank Accounts in China

Chinese bank accounts can be linked to the WeChat payment system and alipay, but they also have their own online payment systems and mobile applications. The same mobile banking app can be used to transfer money between the same Banks, but there is a fee for transferring money between different Banks.

If they bind their bank card and use alipay or WeChat for payment, the alipay and WeChat payment platforms will charge certain fixed fees. So if you want to reduce fees, you need to choose a bank that uses its own online banking mobile application to trade with other Banks with low fees.

4.3 Alternatives Selection

According to the location of the customer, select the local entity business hall convenient use of ten Banks, these ten Banks are relatively famous in China and have a good reputation of the bank.

List of the chosen banks in Tab 4.1

Tab. 4.1 Alternatives Selection

Alternatives	Bank Name
v1	Bank of China
v2	Agricultural bank of China
v3	China construction bank
v4	Industrial and Commercial bank of China
v5	Shanghai pudong development bank
v6	Bank of communications
v7	Postal savings bank of China
v8	Industrial bank CO.LTD
v9	Hua Xia Bank Co, Ltd
v10	China Merchants Bank

4.4 Decision Making Criteria

Since different factors need to be considered in deciding which bank account to choose, in the model example, the selection criteria are as follows:

- Phone - electronic banking APPs (c1),
- Support (c2),
- Credit cards (c3),
- ATM handling fee (c4),
- Penetration (c5).

Because in China, people prefer to use e-banking and some e-payment methods, so it is very important to have a more convenient mobile banking app. If the mobile app of this bank is very easy to use, it will be more convenient to use this bank account to pay in life. For Bella, she is good at using mobile applications and doesn't like going out with wallets only mean the convenience of this E-bank, which is even more necessary for her. We will set a scale ranging

from 1-9, where the number 9 represents the most difficult app to use, and the number 1 represents the best app to pay more quickly.

For most people, if the bank's consulting method is more convenient and systematic, they will get faster and better help when they have more questions about their account and want to consult. Now more and more banks have started to use chatbots, and their human service center is more systematic, just to make customers get faster and more effective help Bella has not opened a bank account for himself before, so he may face many problems.

In the process of using the account, he needs better customer service help. We will set a scale from 1-9, where the number 9 represents the inefficient communication of customer service methods. the number 1 represents the bank has chatbots and can solve most problems, If it can't be solved, it can also jump to manual service, which is efficient and can solve problems better.

Bella also needs a higher credit card limit and a lower interest rate. If she wants to buy things, it will be more convenient when she needs to swipe the credit card. Because different banks have different interest rates and the credit card limit that university students can apply for, we will choose the most suitable bank by comparing each bank's credit card interest rate and limit. In the range of 1 to 9, the number 9 represents the highest interest rate and the lowest limit, while the number 1 represents the lowest interest rate and the highest limit.

Since Bella's parents have many different bank cards and Bella wants to have only one card, Bella needs a bank that will charge lower fees for her ATM transactions with other Banks. We'll set the range from 1 to 9, with the number 9 representing the highest fee and the number 1 representing the lowest fee.

Because Bella lives in Urumqi, Xinjiang, China, a common third tier city, the bank that chooses to open an account must have a high penetration rate, many physical service business halls, or a high ATM coverage rate, so that Bella can more easily find the machine that can be traded when she needs to withdraw money or transfer transactions. The setting range is 1 to 9, and the number 9 represents the lowest penetration rate of the bank in Bella's city, The number 1 represents the bank's highest penetration in Beira's city.

In Tab 4.2, we will list the relevant information of the five selection factors of the ten Banks for comparative analysis:

Tab. 4.2 Objective factor information

	c1	c2	c3		c4	c5
	Phone -APPs	Support	Credit cards		ATM fee*	Penetration
			limit	i (%)		
V1	Perfect	Chatbots and Manual customer service	10000	0.80%	4 RMB a deal	very high
V2	good	Chatbots and Manual customer service	5000	0.60%	2 RMB a deal	high
V3	Perfect	Chatbots	50000	2.60%	2 RMB a deal	very high
V4	Bad	Chatbots and Manual customer service	6000	0.72%	2.5 RMB a deal	very low
V5	very good	Chatbots	5000	0.72%	4 RMB a deal	high
V6	good	Manual customer service	50000	0.65%	1.6 RMB a deal	low
V7	very good	Manual customer service	5000	0.70%	**5‰ of the tra	very high
V8	Bad	Manual customer service	10000	2.00%	***Free for the	low
V9	very good	Chatbots and Manual customer service	6000	1.80%	1.6 RMB a deal	very low
V10	good	Manual customer service	10000	0.65%	2.5 RMB a deal	high

* ATM fee - refers to transactions under 2000 RMB.

** V7 ATM fee: 5‰ of the transaction amount (2-50 RMB).

*** V8 ATM fee: Free for the first 3 deals per month, 2 yuan a deal after.

4.5   Computing The Vector of Criteria Weights

Table 4.3 shows the matrix of the preferences for the individual criteria.

Tab. 4.3 Saaty's matrix

	c1	c2	c3	c4	c5
c1	1	2	3	5	9
c2	0.5	1	2	5	9
c3	0.33	0.5	1	3	7
c4	0.2	0.2	0.33	1	4
c5	0.11	0.11	0.14	0.25	1

Tab. 4.4: Determination of weights using Saaty's method

Criterion	c1	c2	c3	c4	c5	Total
Geometric mean	3.063887	2.141127	1.284735	0.556416	0.213241	7.259407
Criterion weight	0.422057	0.294945	0.176975	0.076648	0.029374	1
Order	1	2	3	4	5	

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.039464
CR	0.035554

CR < 0.1 , the matrix is consistent.

As can be seen from Tab 4.4, criteria 1 -- Phone APPs has the highest weight, while criteria 5 -- penetration rate has the lowest weight. Saaty's method is one of the most precise, weighting criteria and using it to weight alternatives.

Because Bella is good at using electronic network tools such as mobile computers, for her, whether mobile app online banking is easy to use is the most important factor for her to choose bank account, because most of her bank transactions are conducted through online banking.

But for Bella, if a bank's mobile app is better used, she will rarely go to the offline banking service hall or use the offline ATM, so the number of banking service hall and ATM in Beira's city is less important.

4.6   Evaluation of Alternatives According to Criteria

Saaty's Method. In this method, first create the Saaty matrix, which compares each option against the criteria. The first matrix and all relevant tables are mentioned below, and the remaining matrices are listed in the annex. The Saaty matrix illustrates the difference in importance between alternative values within a given criterion. The most important choice is the one with the highest value. Using a nine-point scale to judge preferences between choices, the choices will be paired.

Analyze and calculate the advantages and disadvantages of 5 Criterias of 10 banks respectively, judge and select the best bank and the worst bank in each factor, and explain and analyze them.

Tab. 4.5: Saaty matrix for partial evaluation of criterion 1

c 1	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1.00	7.00	1.00	9.00	5.00	7.00	5.00	9.00	5.00	7.00
v2	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00
v3	1.00	7.00	1.00	9.00	5.00	7.00	5.00	9.00	5.00	7.00
v4	0.11	0.20	0.11	1.00	0.14	0.20	0.14	1.00	0.20	0.20
v5	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00
v6	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00
v7	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00
v8	0.11	0.20	0.11	1.00	0.14	0.20	0.14	1.00	0.14	0.20
v9	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00
v10	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00

Tab. 4.6: Partial evaluation of variants according to criteria 1

c 1	Geometric mean	Criterion weight	I max	(Q*w)/wi
v1	4.51	0.27	3.12	11.35
v2	0.58	0.04	0.39	10.95
v3	4.51	0.27	3.12	11.35
v4	0.23	0.01	0.16	11.51
v5	1.73	0.11	1.15	10.85
v6	0.58	0.04	0.39	10.95
v7	1.73	0.11	1.15	10.85
v8	0.22	0.01	0.16	11.46
v9	1.73	0.11	1.15	10.85
v10	0.58	0.04	0.39	10.95
	16.40	1.00	11.16	11.11

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.12
CR	0.08

CR < 0.1 , the matrix is consistent.

Criteria 1 is the use of Phone App. The mobile app of Bank of China and China Construction Bank is perfect, which is the best one among the ten selected banks. The software page is simple and clear, the online transaction operation is simple and fast, and the application

function is powerful. It can transfer money and pay water and electricity fees to others directly through the app of the bank, and even the elderly and children can easily learn to use it.

On the other hand, the mobile apps of industrial and Commercial Bank of China and Industrial Bank of China are very difficult to use. The interface is complex and there are many advertisements. It's uncomfortable to recommend all kinds of financial products constantly. The transfer operation is troublesome. Even those who are good at using the application software will fall into the dilemma of operation. It is not convenient and has poor experience.

The partial evaluation of alternatives according to criteria 2 is shown in Tab. 4.7.

Tab. 4.7: Saaty matrix for partial evaluation of criterion 2

c2	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00
v2	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00
v3	0.14	0.14	1.00	0.14	1.00	5.00	5.00	5.00	0.14	5.00
v4	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00
v5	1.00	0.14	1.00	0.14	1.00	5.00	5.00	5.00	0.14	5.00
v6	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00
v7	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00
v8	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00
v9	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00
v10	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00

Tab. 4.8: Partial evaluation of variants according to criteria 2

c2	Geometric mean	Criterion weight	I max	(Q*w)/wi
v1	3.55	0.20	2.22	10.86
v2	3.55	0.20	2.22	10.86
v3	0.87	0.05	0.58	11.42
v4	3.55	0.20	2.22	10.86
v5	1.06	0.06	0.75	12.27
v6	0.30	0.02	0.18	10.53
v7	0.30	0.02	0.18	10.53
v8	0.30	0.02	0.18	10.53
v9	3.55	0.20	2.22	10.86
v10	0.30	0.02	0.18	10.53
	17.36	1.00	10.95	10.93

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.10
CR	0.07

CR < 0.1 , the matrix is consistent.

The criteria 2 is the support system. Bank of China, Agricultural Bank of China, industrial and Commercial Bank of China and Huaxia Bank all have strong support systems. They use high-tech intelligent chatrobots and artificial customer service call centers to provide timely and effective answers to customers' problems and provide solutions.

The intelligent chat robot only needs to input the questions that most customers will put forward and answer the matching solutions. Such a chatrobot can solve at least 90% of the operation problems, saving customers' inquiry time.

On the other hand, the support systems of Bank of communications, China Post Savings Bank, industrial bank and China Merchants Bank are very poor. They only have manual customer service center, but their operators are few.

If customers want to ask questions, they need to wait a long time to connect to the idle operators, and solve the problem process trouble. After the operators understand the problem, they have to feed it back to their superiors for unified processing and analysis, and then answer to the customers. The customer experience is poor and inconvenient.

In the process of using the support system, the bank with intelligent chat robot is more timely and effective in solving problems, and will not delay customers' time, and can also provide one-to-one services.

When using the bank's account to continue various operations, the intelligent chat robot can even be bound with the mobile app to demonstrate the solution of the application guidance tutorial for customers, which is very user-friendly and convenient. Most customers like banks with intelligent chat robots.

The partial evaluation of alternatives according to criteria 3 is shown in Tab. 4.9.

Tab. 4.9: Saaty matrix for partial evaluation of criterion 3

c3	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1.00	2.00	2.00	0.33	0.50	0.20	0.33	3.00	3.00	0.11
v2	0.50	1.00	4.00	2.00	2.00	0.17	3.00	4.00	5.00	0.33
v3	0.50	0.25	1.00	0.50	0.33	0.11	0.50	3.00	3.00	0.11
v4	3.00	0.50	2.00	1.00	3.00	0.11	3.00	7.00	4.00	0.14
v5	2.00	0.50	3.00	0.33	1.00	0.14	0.50	5.00	3.00	0.20
v6	5.00	6.00	9.00	9.00	7.00	1.00	5.00	9.00	9.00	3.00
v7	3.00	0.33	2.00	0.33	2.00	0.20	1.00	4.00	5.00	0.20
v8	0.33	0.25	0.33	0.14	0.20	0.11	0.25	1.00	3.00	0.14
v9	0.33	0.20	0.33	0.25	0.33	0.11	0.20	0.33	1.00	0.14
v10	5.00	3.00	9.00	7.00	5.00	0.33	5.00	7.00	7.00	1.00

Tab. 4.10: Partial evaluation of variants according to criteria 3

c3	Geometric mean	Criterion weight	I max	(Q*w)/wi
v1	0.73	0.05	0.58	12.22
v2	1.39	0.09	1.03	11.37
v3	0.51	0.03	0.35	10.62
v4	1.28	0.08	0.99	11.84
v5	0.86	0.06	0.61	10.90
v6	5.39	0.35	3.95	11.25
v7	1.01	0.07	0.73	11.16
v8	0.31	0.02	0.23	11.46
v9	0.27	0.02	0.19	11.12
v10	3.62	0.24	2.62	11.11
	15.37	1.00	11.28	11.30

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.145
CR	0.097

CR < 0.1 , the matrix is consistent.

Criteria 3 is the amount of credit card and interest rate. The best credit card of the ten selected banks is from Bank of communications. The credit card of Bank of communications is

not only high in amount, can be used up to 50000 yuan, and the interest rate is low, only 0.65%. This is a very good condition for customers to use the credit card.

Although the credit card quota of China Construction Bank is 50000, the interest rate is very high, which is 2.6%. Such interest rate will make customers burden and pressure on the use of credit cards, and customers will give priority to banks with low interest rate to handle credit cards.

The partial evaluation of alternatives according to criteria 4 is shown in Tab. 4.11

Tab. 4.11: Saaty matrix for partial evaluation of criterion 4

c4	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1.00	0.20	0.20	0.33	1.00	0.14	5.00	0.11	0.14	0.33
v2	5.00	1.00	1.00	2.00	5.00	0.50	7.00	0.14	0.50	3.00
v3	5.00	1.00	1.00	2.00	5.00	0.50	7.00	0.14	0.50	3.00
v4	3.00	0.50	0.50	1.00	3.00	0.20	6.00	0.13	0.20	1.00
v5	1.00	0.20	0.20	0.33	1.00	0.14	5.00	0.11	0.14	0.33
v6	7.00	2.00	2.00	5.00	7.00	1.00	8.00	0.17	1.00	5.00
v7	0.20	0.14	0.14	0.17	0.20	0.13	1.00	0.11	0.13	0.17
v8	9.00	7.00	7.00	8.00	9.00	6.00	9.00	1.00	6.00	8.00
v9	7.00	2.00	2.00	5.00	7.00	1.00	8.00	0.17	1.00	5.00
v10	3.00	0.33	0.33	1.00	3.00	0.20	6.00	0.13	0.20	1.00

Tab. 4.12: Partial evaluation of variants according to criteria 4

c4	Geometric mean	Criterion weight	I max	(Q*w)/wi
v1	0.37	0.02	0.25	11.01
v2	1.44	0.09	0.91	10.30
v3	1.44	0.09	0.91	10.30
v4	0.76	0.05	0.49	10.43
v5	0.37	0.02	0.25	11.01
v6	2.41	0.15	1.57	10.63
v7	0.18	0.01	0.14	12.52
v8	6.19	0.38	4.63	12.16
v9	2.41	0.15	1.57	10.63
v10	0.70	0.04	0.46	10.63
	16.27	1.00	11.18	10.96

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.11
CR	0.07

CR < 0.1 , the matrix is consistent.

Criteria 4 is the bank's ATM fee. Among the ten selected banks, industrial bank's ATM service fee is the lowest. They choose a unique charging method. The first three transactions of each month are free without any service fee, and the subsequent transactions are charged with 2 RMB for each transaction. This makes it cheaper for customers to use ATMs for transfer transactions. Even some customers have enough three transactions a month, so they can even pay no fees.

Postal savings bank of China also adopts different charging methods, but it is not special preferential. If the customer carries out a transaction of 1000 RMB, they need to pay a handling fee of 5 RMB. If the customer carries out a transaction of 2000 RMB, they need to pay a handling fee of 10 RMB. In this way, the ATM handling fee of Postal savings bank of China is much higher than that of other banks.

The partial evaluation of alternatives according to criteria 5 is shown in Tab. 4.13

Tab. 4.13: Saaty matrix for partial evaluation of criterion 5

c5	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10
v1	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00
v2	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00
v3	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00
v4	0.11	0.14	0.11	1.00	0.14	0.20	0.11	0.20	1.00	0.14
v5	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00
v6	0.14	0.20	0.14	5.00	0.20	1.00	0.14	1.00	5.00	0.20
v7	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00
v8	0.14	0.20	0.14	5.00	0.20	1.00	0.14	1.00	5.00	0.20
v9	0.11	0.14	0.11	1.00	0.14	0.20	0.11	0.20	1.00	0.14
v10	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00

Tab. 4.14: Partial evaluation of variants according to criteria 5

c5	Geometric mean	Criterion weight	I max	(Q*w)/wi
v1	3.71	0.23	2.48	10.88
v2	1.26	0.08	0.84	10.88
v3	3.71	0.23	2.48	10.88
v4	0.21	0.01	0.15	11.40
v5	1.26	0.08	0.84	10.88
v6	0.47	0.03	0.33	11.34
v7	3.71	0.23	2.48	10.88
v8	0.47	0.03	0.33	11.34
v9	0.21	0.01	0.15	11.40
v10	1.26	0.08	0.84	10.88
	16.27	1.00	10.92	11.08

The final step is to check the consistency of the matrix according to (3.3), (3.5) as following (the complete results of I max is listed in Annexes 1):

CI	0.12
CR	0.08

CR < 0.1 , the matrix is consistent.

Criteria 5 is penetration. The popularity of Bank of China, China Construction Bank and Postal savings bank of China is very high. The ATM machines and offline business halls of these banks can be seen everywhere in Bella's city. In this way, if Bella needs to go to the ATM to withdraw money or go to the offline business hall for business, she can get there on foot without any means of transportation. It will be more convenient.

On the other hand, the popularity of ATM machines and offline business offices of Huaxia Bank and industrial and Commercial Bank of China is low. In Bella's city, there are even only one or two offline business halls. If Bella needs to go to the offline business hall to handle business or go to the ATM to get money, she can only go by means of transportation, which is very inconvenient.
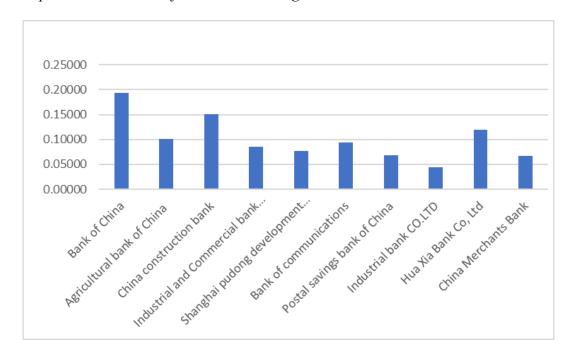
The next step in the Saaty method is to calculate the comprehensive evaluation of alternatives. Each alternative is sorted in descending order according to the total valuation, of which the one with the highest total valuation has the greatest advantage.

The ranting and order of the selected ten Chinese Banks have been analyzed and calculated as shown in table 4.15 below.

Tab. 4.15: Evaluation of alternatives using Saaty's method

	Alternatives	Rating	Order
v1	Bank of China	0.19332	1
v2	Agricultural bank of China	0.10027	4
v3	China construction bank	0.15022	2
v4	Industrial and Commercial bank of China	0.08504	6
v5	Shanghai pudong development bank	0.07655	7
v6	Bank of communications	0.09422	5
v7	Postal savings bank of China	0.06887	8
v8	Industrial bank CO.LTD	0.04445	10
v9	Hua Xia Bank Co, Ltd	0.11982	3
v10	China Merchants Bank	0.06723	9

Graph. 4.I: Evaluation of alternatives rating

Through analysis and synthesis, the Bank of communications, which is the fifth most suitable bank to open an account. First of all, its mobile app is generally good but not excellent, its operation interface is simple, but the transaction efficiency is low, some operations are troublesome, and the use experience is general.

Bank of communications has no intelligent chatrobot, only customer service center, which solves the customer's problems by answering and calling. However, due to the small number of service personnel, customers often have no one to answer the call or need to wait for a long time, which leads to low efficiency and inconvenience in solving problems encountered in the transaction.

The credit card quota of Bank of communications is high and the interest rate is low, which is relatively excellent. It has greater advantages in the third criteria credit card, but it is not the best, and the proportion of the third factor is not large enough.

The ATM fee transaction of Bank of communications is cheaper and lower, but it is not the most cost-effective or the lowest price, and because ATM fee is the fourth important criteria, it does not have an advantage.

The popularity of Bank of communications is low. There are few business halls and ATM machines in the city where Bella is located. If Bella wants to get money offline, she needs to use transportation tools, such as bus and bicycle, and go to the business hall or ATM machine of Bank of communications in the city where she is located, so it is inconvenient.

On the other hand, the mobile app of industrial bank is bad, the operation page is complex and difficult to understand, and the transaction efficiency is low, which is not suitable for the daily life of college students like Bella who open accounts for the first time. And the mobile app is the most important criteria for Bella to choose bank account opening.

The support system of industrial bank is not very perfect either. Industrial Bank has no artificial intelligence equipment such as chatrobot, only artificial service customer service center, and the number of bank staff is small, and no one is connected to the phone frequently, which makes it difficult to solve the problems encountered in the transaction and inconvenient.

The interest rate of industrial bank's credit card is high and the amount of credit card is low, which is not a good choice, and the third important factor is not dominant.

Industrial Bank's ATM fee is low, but the ATM fee criteria is not so important for Bella, so this advantage criteria also accounts for a small proportion.

The popularity rate of industrial bank is high, but it is not the highest. It is still not an advantage. Because this criteria is the least important criteria, the proportion of banks selected for Bella is not large.

Bank of China ranks first, which is the most suitable bank for Bella to open an account. First of all, Bella's most important criteria is mobile app. Bank of China has a powerful mobile application e-banking system. Customers can pay online fees as long as they download their official app on their mobile phone, log in and bind their bank account, and select a bank card.

For example, the charge for electricity and water does not need to go offline. Even paying personal income tax, insurance premium, social security fee, etc. in life can be transacted online through the mobile application platform provided by the bank. It can also transfer and remit money with others online, which is very convenient and fast, the application page is simple and easy to understand, and the operation is very easy.

Even the elderly who are not good at using electronic equipment can learn and use through application guidance.

Bank of China also has a nearly perfect support system. They use advanced science and technology to develop intelligent chat robots, set question bank for robots, so that robots can automatically identify the answers required by customers, and provide solutions for customers' difficulties.

And customers can still choose manual service, and transfer the customer's phone to the customer service center of the manual service desk. There will be staff to answer the customer's questions one by one, providing more effective and flexible solutions. If there are any problems in the process of using bank transactions, the staff will also teach the customers one-to-one to guide the customers' operation

As for the Bank of China's credit card, although its interest rate is not the lowest, it is also relatively cheap. The most important thing is that its limit is high. Bella can use this card to spend more money. The Bank of China's credit card is relatively easy to use.

Bank of China's ATM fee is still relatively expensive, but because Bella thinks that ATM fee is the fourth most important criteria, its proportion is not large, and it is not a big problem. And the ATM and offline service hall of Bank of China are the most in Beira's city,

with a very high penetration rate. So if She may find the transaction machine of Bank of China at her door for transaction it will be very convenient.

All in all, through the comparative analysis of the current accounts of ten banks in China. Bella should choose the Bank of China to open an account, because the Bank of China basically meets Beira's various criteria, and keeps at a better level, which is the most suitable bank for Bella.

AHP decision analysis method is widely used in life. When we decide something, we can do AHP decision analysis and calculation. This method is not only simple, but also will make our decision more accurate and effective. It is very suitable for use in life.

4.7   Summary

In this part, using the AHP analysis method of the third part, it analyzes a case, for Chinese university student Bella, choose a suitable bank to open current account.

First, the identity and information of customers are determined, the current situation of bank accounts in China is analyzed, and then ten banks with good reputation in China are selected.

Through the analysis of customers' needs, five decisive factors of customers' account opening are determined, which are the ease of use of mobile app, the improvement of support system, the credit card limit and interest rate, the transaction fee of ATM, Popularity of ATM machines and offline business halls of selected banks in the city where customers are located.

Collect the relevant factor information of ten banks and make a list for comparison. Calculate the proportion of each factor to the customer's decision to open an account by using AHP analysis method.

Then compare ten selected banks, the proportion of each factor, through comparing the information of ten banks, list and calculate the results by AHP method. And list analysis, ranking for ten banks, and draw a statistical chart, finally, determine the most suitable bank to satisfy customers for customers to open an account.

Through scientific calculation and analysis, the Bank of China is selected as the most suitable bank for customers to open an account.

The mobile online trading app of Bank of China is perfect. It is not only convenient, efficient and secure, but also has low network transaction fees, and the use of mobile app is simple and easy to understand and operate. These have fully met the most important determinants of account opening for selected customer.

Bank of China also has a very powerful support system. In the process of customer's transaction with bank card, if there is any problem, Bank of China can answer the problem online through multi-functional intelligent chat robot and artificial voice service, making communication more convenient. Let customer enjoy better service.

These two important factors, Bank of China in the selected 10 banks are very good performance, to meet the needs of customers. And the Bank of China's credit card line is moderate, the interest rate is also moderate.

ATM charges are low. In the city where the customer is located, the offline ATM and business hall have a high popularity rate and a large number, which is convenient for offline transactions. After analysis by AHP, Bank of China is selected as the most suitable bank to open current account for customer.

Through the AHP analysis method, the analysis and calculation of practical application cases can be scientific and effective, and it is very convenient to determine the most suitable solution for customers' needs.

5 Conclusion

Because there are many kinds of banks in the Chinese market, and each bank is trying to improve its own e-banking system, more FinTech and its own bank integration, so as to promote the development of its own banking system, and form a competitive advantage in the market.

The aim of this thesis is to introduce the relationship between the development of financial science and technology in China and banks, and to compare and analyze the current accounts of banks in China. Based on the Multi-Criteria Decision-Making (MCDM) method, the optimal choice for natural person to open current account is found.

First of all, the second chapter introduces the characteristics and structure of China's banking system, the main types and business scope of banks, the application and characteristics of FinTech in China's banking system, and the development history and characteristics of FinTech in China. In addition, at the end of the second chapter, the electronic payment system with Chinese characteristics is described.

The third chapter introduces the method of Multi-Criteria Decision-Making (MCDM). Firstly, it gives some examples of the analysis methods of Multi-Criteria Decision-Making and introduces them briefly. Then it focuses on the Analytic Hierarchy Process method, its analysis steps, calculation methods and practical application in life.

The fourth chapter is the practical part of the thesis. Using the application of multi criteria decision analysis method, Bella, a college student living in China, is determined to be a fixed customer. She needs to choose a bank to open a current account that can meet her needs to the greatest extent. In this paper, 10 reputable bank of China are selected in China, and 5 indicators are determined for the alternative plan, including mobile app, support system, credit card, ATM handling fee and penetration rate. On this basis, Saaty method is used to analyze and evaluate the scheme. Finally, the ranking of 10 banks is compared.

Through the comparative analysis of the demand indicators of current account customers of 10 banks, we find that the more FinTech technology is applied to the banking system, the more banks will show greater advantages in the banking market competition.

Because customers are more and more concerned about whether the bank's electronic mobile payment and the use of high-tech chat robots are perfect and convenient.

The more convenient the e-Mobile payment mobile app is, the higher the customer satisfaction will be, and the use of high-tech chat robots can solve the problems that customers encounter when they use bank accounts for transactions faster and more conveniently. China's banks are trying to make better use of FinTech technology in their own banking system, so as to improve the efficiency of bank transactions and make customers more convenient to conduct transactions through the bank.

On the other hand, the advantages of traditional bank competition factors such as the penetration of ATM machines and offline business halls, and transaction fees of ATM machines have less and less influence on customers' decision-making. Customers prefer to choose a bank with low penetration, high ATM fees, but convenient and easy to use mobile app system, and perfect support system to open current account. Therefore, the traditional banks must keep up with the development trend of most of the banking industry in China, and use and develop FinTech to improve their banking system in order to meet the needs of customers and improve their competitiveness in the Chinese banking market.

The development of FinTech is a global trend. With the development of FinTech, our life is becoming more and more convenient.

China's FinTech is also developing rapidly, so as to promote the faster development of China's economy. If the banking industry wants to maintain its advantages in this environment, it must develop and apply FinTech in the banking system.

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List of Abbreviations

AHP   analytic hierarchy process

AI   artificial intelligence

APP   application

AR   augmented reality

ATM   automatic teller machine

C2C   consumer to consumer

CA   certificate authority

CCTV   China central television

CMB   China merchants bank

COBOL   common business - oriented language

DEA   data envelopment analysis

FinTech   financial technology

IT   information technology

LTD.   limited

MCDM   multi-criteria decision-making

MCE   multi criteria evaluation

MOP   multi objective programming,

P2P   peer to peer

QR   quick response code

SARS   severe acute respiratory syndrome

TOPSIS   technique for order preference by similarity to an ideal solution

VR   virtual reality

WTO   world trade organization

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Annexes

Annex 1: Saaty matrix for partial evaluation of Alternatives according to criterion 1, geometric mean and I max results.

c 1	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	Geometric mean	Criterion weight	I max	(Q*w)/wi		
v1	1.00	7.00	1.00	9.00	5.00	7.00	5.00	9.00	5.00	7.00	4.51	0.27	3.12	11.35		
v2	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00	0.58	0.04	0.39	10.95	CI	0.12
v3	1.00	7.00	1.00	9.00	5.00	7.00	5.00	9.00	5.00	7.00	4.51	0.27	3.12	11.35	CR	0.08
v4	0.11	0.20	0.11	1.00	0.14	0.20	0.14	1.00	0.20	0.20	0.23	0.01	0.16	11.51		
v5	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00	1.73	0.11	1.15	10.85		
v6	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00	0.58	0.04	0.39	10.95		
v7	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00	1.73	0.11	1.15	10.85		
v8	0.11	0.20	0.11	1.00	0.14	0.20	0.14	1.00	0.14	0.20	0.22	0.01	0.16	11.46		
v9	0.20	5.00	0.20	7.00	1.00	5.00	1.00	7.00	1.00	5.00	1.73	0.11	1.15	10.85		
v10	0.14	1.00	0.14	5.00	0.20	1.00	0.20	5.00	0.20	1.00	0.58	0.04	0.39	10.95		
											16.40	1.00	11.16	11.11		

Annex 2: Saaty matrix for partial evaluation of Alternatives according to criterion 2, geometric mean and I max results.

c2	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	Geometric mean	Criterion weight	I max	(Q*w)/wi		
v1	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00	3.55	0.20	2.22	10.86		
v2	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00	3.55	0.20	2.22	10.86	CI	0.10
v3	0.14	0.14	1.00	0.14	1.00	5.00	5.00	5.00	0.14	5.00	0.87	0.05	0.58	11.42	CR	0.07
v4	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00	3.55	0.20	2.22	10.86		
v5	1.00	0.14	1.00	0.14	1.00	5.00	5.00	5.00	0.14	5.00	1.06	0.06	0.75	12.27		
v6	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00	0.30	0.02	0.18	10.53		
v7	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00	0.30	0.02	0.18	10.53		
v8	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00	0.30	0.02	0.18	10.53		
v9	1.00	1.00	7.00	1.00	7.00	9.00	9.00	9.00	1.00	9.00	3.55	0.20	2.22	10.86		
v10	0.11	0.11	0.20	0.11	0.20	1.00	1.00	1.00	0.11	1.00	0.30	0.02	0.18	10.53		
											17.36	1.00	10.95	10.93		

c3	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	Geometric mean	Criterion weight	I max	(Q*w)/wi		
v1	1.00	2.00	2.00	0.33	0.50	0.20	0.33	3.00	3.00	0.11	0.73	0.05	0.58	12.22		
v2	0.50	1.00	4.00	2.00	2.00	0.17	3.00	4.00	5.00	0.33	1.39	0.09	1.03	11.37	CI	0.145
v3	0.50	0.25	1.00	0.50	0.33	0.11	0.50	3.00	3.00	0.11	0.51	0.03	0.35	10.62	CR	0.097
v4	3.00	0.50	2.00	1.00	3.00	0.11	3.00	7.00	4.00	0.14	1.28	0.08	0.99	11.84		
v5	2.00	0.50	3.00	0.33	1.00	0.14	0.50	5.00	3.00	0.20	0.86	0.06	0.61	10.90		
v6	5.00	6.00	9.00	9.00	7.00	1.00	5.00	9.00	9.00	3.00	5.39	0.35	3.95	11.25		
v7	3.00	0.33	2.00	0.33	2.00	0.20	1.00	4.00	5.00	0.20	1.01	0.07	0.73	11.16		
v8	0.33	0.25	0.33	0.14	0.20	0.11	0.25	1.00	3.00	0.14	0.31	0.02	0.23	11.46		
v9	0.33	0.20	0.33	0.25	0.33	0.11	0.20	0.33	1.00	0.14	0.27	0.02	0.19	11.12		
v10	5.00	3.00	9.00	7.00	5.00	0.33	5.00	7.00	7.00	1.00	3.62	0.24	2.62	11.11		
											15.37	1.00	11.28	11.30		

Annex 4: Saaty matrix for partial evaluation of Alternatives according to criterion 4, geometric mean and I max results.

c4	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	Geometric mean	Criterion weight	I max	(Q*w)/wi		
v1	1.00	0.20	0.20	0.33	1.00	0.14	5.00	0.11	0.14	0.33	0.37	0.02	0.25	11.01		
v2	5.00	1.00	1.00	2.00	5.00	0.50	7.00	0.14	0.50	3.00	1.44	0.09	0.91	10.30	CI	0.11
v3	5.00	1.00	1.00	2.00	5.00	0.50	7.00	0.14	0.50	3.00	1.44	0.09	0.91	10.30	CR	0.07
v4	3.00	0.50	0.50	1.00	3.00	0.20	6.00	0.13	0.20	1.00	0.76	0.05	0.49	10.43		
v5	1.00	0.20	0.20	0.33	1.00	0.14	5.00	0.11	0.14	0.33	0.37	0.02	0.25	11.01		
v6	7.00	2.00	2.00	5.00	7.00	1.00	8.00	0.17	1.00	5.00	2.41	0.15	1.57	10.63		
v7	0.20	0.14	0.14	0.17	0.20	0.13	1.00	0.11	0.13	0.17	0.18	0.01	0.14	12.52		
v8	9.00	7.00	7.00	8.00	9.00	6.00	9.00	1.00	6.00	8.00	6.19	0.38	4.63	12.16		
v9	7.00	2.00	2.00	5.00	7.00	1.00	8.00	0.17	1.00	5.00	2.41	0.15	1.57	10.63		
v10	3.00	0.33	0.33	1.00	3.00	0.20	6.00	0.13	0.20	1.00	0.70	0.04	0.46	10.63		
											16.27	1.00	11.18	10.96		

Annex 5: Saaty matrix for partial evaluation of Alternatives according to criterion 5, geometric mean and I max results.

c5	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	Geometric mean	Criterion weight	I max	(Q*w)/wi		
v1	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00	3.71	0.23	2.48	10.88		
v2	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00	1.26	0.08	0.84	10.88	CI	0.12
v3	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00	3.71	0.23	2.48	10.88	CR	0.08
v4	0.11	0.14	0.11	1.00	0.14	0.20	0.11	0.20	1.00	0.14	0.21	0.01	0.15	11.40		
v5	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00	1.26	0.08	0.84	10.88		
v6	0.14	0.20	0.14	5.00	0.20	1.00	0.14	1.00	5.00	0.20	0.47	0.03	0.33	11.34		
v7	1.00	5.00	1.00	9.00	5.00	7.00	1.00	7.00	9.00	5.00	3.71	0.23	2.48	10.88		
v8	0.14	0.20	0.14	5.00	0.20	1.00	0.14	1.00	5.00	0.20	0.47	0.03	0.33	11.34		
v9	0.11	0.14	0.11	1.00	0.14	0.20	0.11	0.20	1.00	0.14	0.21	0.01	0.15	11.40		
v10	0.20	1.00	0.20	7.00	1.00	5.00	0.20	5.00	7.00	1.00	1.26	0.08	0.84	10.88		
											16.27	1.00	10.92	11.08		