

The Application of Artificial Intelligence in the Financial Field: Taking Insurance as an Example

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Abstract: As the foundation of financial work, financial research has greatly promoted the development of national finance. However, the traditional financial stability research results have great deficiencies. The traditional financial research is mainly influenced by the investigation method. The reliability of the research is low due to the judgment of subjective factors. As a way to extract data by computer, artificial intelligence has great precision and objectivity, and it has greatly promoted the development of financial services. This paper mainly uses the reasoning efficiency of artificial intelligence algorithm to improve the income level of the financial field through the application analysis of the actual objective connection between artificial intelligence and finance. Research has found that artificial intelligence can greatly increase the accuracy of prediction.

1. Introduction

Artificial intelligence has developed rapidly, and its technology enables the processing of complex tasks to greatly improve accuracy. In the context of artificial intelligence, the financial development platform can be gradually scientific, diversified and universal with the help of the technical nature of artificial intelligence. Artificial intelligence can break through the limitations of traditional limitations, use intelligent systems to detect data, analyze the development trend, and perform corresponding operations on the processing results. The development of artificial intelligence can be expected to become a new driving force for economic development, making financial stability research a huge development.

In recent years, artificial intelligence and machine learning have gradually been applied to more and more fields. In 2017, Liu Liu et al. [1] combed the development of artificial intelligence in order to study the influence of artificial intelligence on library and information science, expounded the position of machine learning in artificial intelligence, and combed the development of artificial intelligence. It expounds the position of machine learning in artificial intelligence, and finds that machine learning plays a huge role in the research of library and information science. In 2017, Li Li et al. [2] proposed a new machine learning framework for parallel learning, and studied the effective extraction of data and predictive learning. The research found that the new theoretical framework has more comprehensive advantages. In 2018, Lin Xiaotong and others [3] combined artificial intelligence and medical technology in order to improve the application of artificial intelligence, and studied the technical background of machine learning and its preliminary application and potential research direction in the field of plastic surgery. In 2018, Zhao Gan et al. [4] applied the artificial intelligence technology of machine learning to ophthalmology in order to improve the time-consuming and labor-intensive defects of traditional ophthalmology diagnosis. It was found that the combination of this technology plays an important role in the development of ophthalmology.

With the development of the economy, research on financial stability has been increasing. In 2016, Chen Yulu et al. [5] conducted preventive research on the possible impact of the financial crisis, analyzed financial cycles and financial fluctuations, and conducted phased tests based on the growth and decay of the financial cycle. The study found that financial fluctuations are in finance.

The period of rapid growth and decay is more likely to cause financial volatility, while in the normal period financial volatility is small and tends to be stable. In 2016, Lu Lei et al. [6] conducted research on the financial crisis, using the main traditional model banks as research data, and discussing the limitations of their traditional financial policy instruments, based on domestic and foreign professional literature, for the financial crisis. The stability system was improved, and the final study found that the payment system can effectively strengthen the stability of the financial system. In 2017, Yang Guang et al. [7] used the DSGE model as the basis for analyzing the impact of the zero interest rate floor on the financial system, and judging the instability of the macro economy and the impact of economic fragility. In 2018, Xia Xiaohua et al. [8] built a link between economic load and financial stability based on the economic debt model. The medical company instance verified the economic cycle, and effectively applied the VAR model to study the economic liabilities for the economic cycle. The impact has a reverse periodicity and has a negative impact during the economic expansion phase.

This paper mainly studies the application of artificial intelligence and machine learning in the financial field from the front-end application oriented to customers, the background application of optimization operation and the management of transaction and portfolio management [9-10], so as to explore the impact of artificial intelligence on financial stability. Taking insurance finance as an example [11-12], the research found that artificial intelligence has great advantages in improving accuracy and can be extended to other fields for development.

2. Methods

Taking insurance finance as an example, this paper studies the development and application of artificial intelligence in the financial insurance industry, and analyzes the stability and accuracy of artificial intelligence in the financial industry.

2.1 Analysis of the Importance of Artificial Intelligence for the Financial and Insurance Industry

Through the innovative means of artificial intelligence, the application of machined intelligent technology to the business of the financial insurance industry can further improve operational efficiency, and the self-learning of artificial intelligence can automate the various processes of insurance sales, recommendation, and claims settlement. Artificial intelligence can provide users with comprehensive risk protection and services, enabling users to view their own policies at any time and anywhere, and the smart policy system will intelligently remind the insurance that is about to expire to achieve intelligent renewal. At the same time, artificial intelligence can realize the marketing customized service of insurance products in insurance marketing. Through the use of artificial intelligence technology recommendation engine and filtering algorithm, its basis based on massive data analysis has more accuracy, and can provide users with corresponding product information. And the ability to purchase insurance channels.

In the face of customer demand services, artificial intelligence has greatly improved work efficiency. In the insurance customer service, transactions that require a large amount of computing and require high efficiency and are not highly complex can be processed by artificial intelligence. The use of artificial intelligence can use intelligent voice system, automatic reply and other technologies to solve customer's consulting needs, which can effectively reduce the labor costs of customer service personnel, and also enable the insured to have a better insurance experience and optimize the operating costs of insurance companies.

2.2 The Accuracy of Artificial Intelligence in Financial Insurance Sales

Artificial intelligence can achieve accurate recommendation of insurance products, and can also make insurance purchase simple and quick. Using artificial intelligence to understand user information, analyze according to different information of customers, and put high-quality products on high-quality customers to achieve precise marketing. Improve the operating status of insurance companies and reduce the cost of the exhibition industry. Communicate with consumers in the form

of artificial intelligence robots, which can make communication fun and improve the efficiency of understanding customer needs.

Artificial intelligence can improve the product experience of insurance companies, allowing customers to enjoy privately-tailored services. The design of products and the content of products are more in line with the unique needs of customers, creating insurance products for consumers in a humanized form. Supplemented by big data makes insurance actuarial more accurate, enhances intelligent risk pricing ability, and realizes insurance company's product innovation and personalized customization. The effective use of artificial intelligence can help insurance companies to better understand user needs, analyze user data on demand, calculate in real time, provide more accurate risk pricing, intelligently assess and prevent risks, break the traditional product pricing model, and big data. Dynamic insurance pricing based on cloud computing, making pricing differentiated and refined.

2.3 Artificial Intelligence and Promotion of other Industries

By effectively integrating financial insurance with the big data and artificial intelligence industries, it can use big data and artificial intelligence technology to promote the growth of insurance business, whether it is from the accurate marketing of insurance customers, or from fraud prevention. In terms of risk, industry integration can make insurance companies have a better response to the crisis, which brings great benefits to the industry.

In addition, the insurance company's data belonging to the artificial intelligence company is effectively integrated, and data sharing is realized to maximize the benefits. Through insurance companies using data from a large number of customers in their own systems, combined with data from big data and artificial intelligence, they can build models to respond to new customers, effectively know the risks of this customer and the needs of customers, thus achieving customer demand. The design of insurance products is targeted, and the sales of insurance products are of high quality, which can effectively promote the development of the company's business.

3. Results and Discuss

This survey uses questionnaire survey methods to conduct a comprehensive survey of the use of artificial intelligence in financial and insurance business. In this survey, a total of 500 questionnaires were randomly distributed to insurance consumers of life insurance, and 468 copies were recovered. The recovery rate was 93.6%, of which 468 were valid questionnaires, and the effective questionnaire rate was 93.6%.

3.1 Increased Usage Rate and Claims Accuracy

The customer's use of artificial intelligence, that is, the market scale of artificial intelligence, is supported by the usage data. The higher the usage rate, the larger the market size of artificial intelligence, and the broader the development prospect of artificial intelligence in the insurance industry. As can be seen from figure 1, according to the survey results, the utilization rate of artificial intelligence is relatively low, but with the gradual increase of the current year, the market share of artificial intelligence is getting larger and larger, in 2019. The annual usage rate has reached twice that of 2015. This increase in data volume fully demonstrates the use of the company's artificial intelligence insurance products is very large.

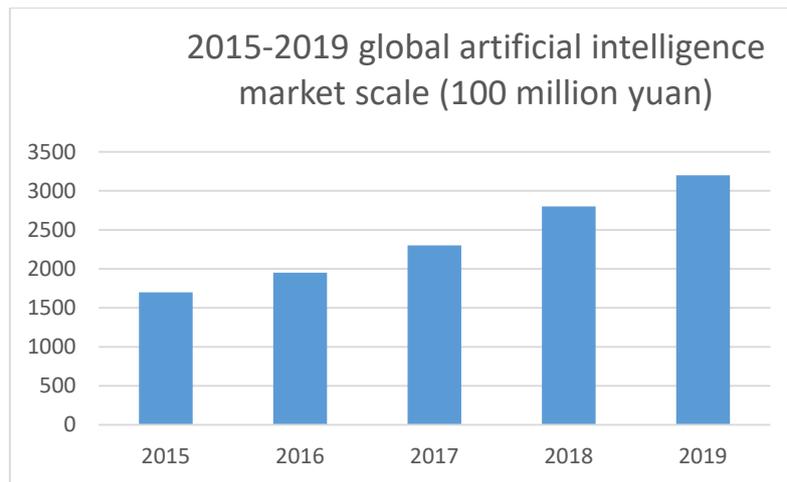


Figure 1 2015-2019 Global Artificial Intelligence Market Scale (100 million yuan)

The intelligent claims accuracy rate refers to the ratio of the event that the successful shooting of the captured photos through the intelligent claims channel is successfully processed by the intelligent claims channel to the sum of the events of all the selected uploads. It is an important reference indicator for the promotion of artificial intelligence in the company's insurance business. According to the data in figure 2, the intelligent claims accuracy rate of insurance products under artificial intelligence has reached 70%, and it shows a growing trend.

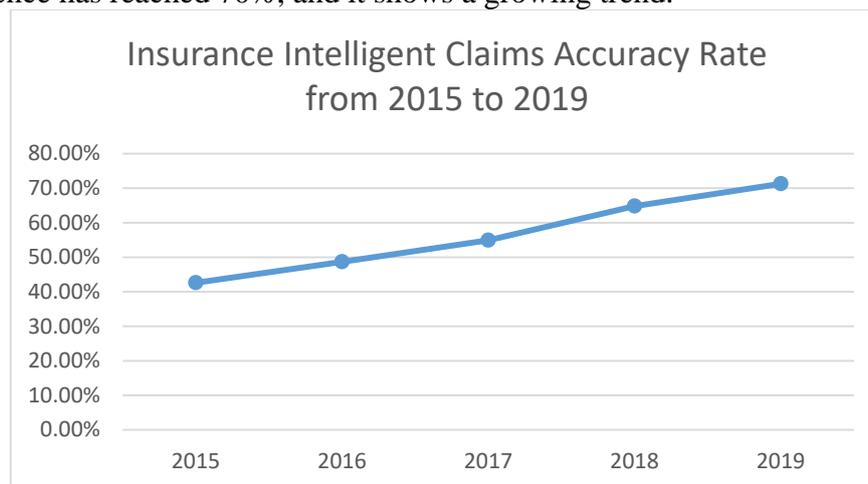


Figure 2 2015-2019 Insurance Intelligent Claims Accuracy Rate

3.2 Accuracy of Precision Sales

The traditional insurance sales are mainly based on the user's needs survey, which is based on the subjective judgment of the analysis and the survey of customer needs. The main survey method is to adopt a manual survey questionnaire. The influencing factors considered are not comprehensive enough. The investigator's personal subjective factors are large, and the amount of data taken is small, resulting in low accuracy of the survey results, thus meeting customer needs. Product sales accuracy is also low.

Artificial intelligence lies in the application of financial insurance. It mainly extracts massive data acquisition from big data according to the reasoning effect of the algorithm, and conducts comprehensive and detailed analysis according to the influencing factors of various aspects, thus obtaining a more complete conclusion. It has a high accuracy rate for customer sales and is more accurate for traditional manual survey models.

4. Conclusion

With the development of China's insurance market and the continuous advancement of artificial

intelligence, the use of artificial intelligence in the insurance business will become the main competitive direction of major insurance entities. Insurance entities can only adopt model innovation, product innovation and service with higher technology content. Innovative and other ways can seek to develop and grow. This paper mainly enriches the links of artificial intelligence in the insurance business and the coverage of insurance by increasing the path of artificial intelligence in the insurance business. It improves the insurance in the insurance business by improving the adaptability of all parties to the application of artificial intelligence. The use of artificial intelligence is popular; by increasing the use of artificial intelligence in insurance research and the optimization of regulatory entities, the application of artificial intelligence to the limitations of artificial intelligence development. Further improve the use of artificial intelligence in the insurance business, and build an artificial intelligence application system suitable for the characteristics of China's insurance companies, so that the financial industry can face the competitive pressure of the times.

Artificial intelligence uses technological means to replace previous manual work, which can reduce labor costs and improve efficiency. In the face of the intelligent transformation of the modern era, it is of great importance to study its role in promoting the development of the financial industry. The use of Internet technology and massive information service platforms to organically combine the Internet with traditional industries has made the industry more rapid.

References

- [1] Liu Liu, Wang Dongbo, Huang Shuiqing. Review of Artificial Intelligence Research from the Perspective of Machine Learning and Its Influence on Library and Information Science[J]. Books and information, 2017(6):84-95.
- [2] Li Li, Lin Yilun, Cao Dongyu, et al. A new theoretical framework for parallel learning-machine learning[J]. Journal of Automation, 2017, 43(1): 1-8.
- [3] Lin Xiaotong, Chen Yanqi. Application of artificial intelligence in plastic surgery [J]. Chinese Journal of Plastic Surgery, 2018, 34(2): 157-160.
- [4] Zhao Gan, Shen Linlin, Lai Mingying. Application of Artificial Intelligence Technology Based on Machine Learning in Ophthalmology[J]. International Journal of Ophthalmology, 2018(9):1630-1634.
- [5] Chen Yulu, Ma Yong, Zhai Zhuoyang. How Financial Cycle and Financial Fluctuation Affect Economic Growth and Financial Stability[J]. Financial Research, 2016(2):1-22.
- [6] Lu Lei, Yang Jun. The “Impossible Triangle” of Liquidity, General Equilibrium and Financial Stability[J]. Financial Research, 2016(1): 1-13.
- [7] Yang Guang, Li Li, Hao Dapeng. Zero Interest Rate Lower Limit, Monetary Policy and Financial Stability[J]. Journal of Finance and Economics, 2017, 43(1): 42-51.
- [8] Xia Xiaohua, Peng Fangping, Zhan Kai. Economic Liability, Financial Stability and Minsky Cycle[J]. Economic Theory and Business Management, 2018, V37(5): 19-28.
- [9] Aslam U, Ilyas M, Imran M K, et al. Intelligence and its impact on managerial effectiveness and career success (evidence from insurance sector of Pakistan) [J]. Journal of Management Development, 2016, 35(4):505-516.
- [10] Makridakis S. The Forthcoming Artificial Intelligence (AI) Revolution: Its Impact on Society and Firms[J]. Futures, 2017: S0016328717300046.
- [11] Sikdar S. Artificial intelligence, its impact on innovation, and the Google effect[J]. Clean Technologies & Environmental Policy, 2018, 20(1):1-2.
- [12] Grosz B J, Stone P. A Century Long Commitment to Assessing Artificial Intelligence and its Impact on Society[J]. Communications of the ACM, 2018, 61(12):68-73.