



Changes in Insurance Contract Standards under Artificial Intelligence Scenarios

Shuyi Zhang^{1,*}, Xuyan Zhang²

¹Industrial engineering, Shenyang University, Changzhou, China, i_confused_lonely@qq.com

²International Department of The Affiliated High School of South China Normal University, Guangzhou, China, 1767214530@qq.com

*correspondence author email: i_confused_lonely@qq.com

Abstract

Artificial intelligence is widely used in many ways, and people are also applying the technology to the pricing of insurance contracts. This article will apply common algorithms like the big data analysis of artificial intelligence to the predetermined incidence calculations in insurance pricing and the decrease of insurance refusal. Therefore, people can better understand the usage of artificial intelligence in the insurance pricing area, and also the increase of loss ratio through analyzing the whole pricing process. Through the research we have done, we can conclude that artificial intelligence is capable of making the predetermined incidence calculations inside insurance pricing accurate, which increases the loss ratio, as it can precisely predict the most effective and useful insurance for people. Therefore, insurance companies can enhance their cooperative image, and create more clients, in the end, providing more profits for the insurance company.

Keywords: *artificial intelligence; insurance pricing; algorithms; profits; loss ratio*

1. INTRODUCTION

Cybersecurity stands as one of the key investment pillars for companies applying IT (Information Technology) to gain competitiveness in the market due to the continuous increase in the number of cyberattacks on IT systems over the past years. But with the development of modern technology, artificial intelligence has been applied in more scenarios. Artificial intelligence can empower insurance marketing, improve the experience and efficiency of insurance marketing, and insurance companies can reduce their dependence on insurance intermediaries and reduce sales costs through intelligent robot recommendations. Sales (intermediaries) can automatically generate professional and cost-effective insurance plans with the help of the system to provide users with professional and personalized services and improve the professionalism and experience of insurance sales.

The impact of AI on insurance contracts has been noted in the literature, for example on the concepts of odds and actuarial accounting. The feasibility of each problem is analyzed from multiple dimensions. For example, the SACI method is covered by a contract, and the cost

analysis and discussion of related applications are carried out. In addition, the quality of accounting under the Insurance Contract has also been investigated, and it is believed that the development mainly relies on future information, especially in the insurance field, in assessing the future risks of insurance companies and in setting different ways of insurance pricing.

Besides shifting the focus to companies, artificial intelligence can be used to improve the situation. To avoid cheating insurance behavior, insurance before insurance is also very important. At present, underwriting relies on manual work. Due to personnel experience and information transparency, some fraud and fraudulent insurance behaviors are difficult to be found in the underwriting process in time. Using artificial intelligence and big data technology, and underwriting model can be built to automatically judge whether the applicant is suspected of fraud according to the applicant's previous insurance, credit, and other multidimensional data. According to the risk level, insurance can be rejected in the insurance stage, or increase the premium for high-risk customers, to avoid fraud. And the reason why some companies began to adopt relevant measures to try to shift the focus to themselves is large because they want to reduce the role of intermediaries in insurance contracts.

Compliance in the insurance industry is becoming increasingly important as regulation tightens. Many insurance sales and intermediaries to order, will be in the product introduction and commitment is not standardized, or even malicious deception of the applicant.

In this article, we will be discussing the usefulness of artificial intelligence in the insurance pricing field. We will start by introducing the common algorithms of artificial intelligence [13] and focus on the increase of the insurance loss ratio by utilizing artificial intelligence involved. Due to the development of artificial intelligence, it can provide clearer proof for clients when they encounter accidents or diseases. We will also be mentioned the benefits of a high insurance loss ratio in this article. On the other side, we will also discuss the benefits insurance clients can gain through applying artificial intelligence. As a result, it is harder for insurance companies to refuse compensation as the contracts are regulated because big data behind artificial intelligence can become great certification for the occurrence of accidents or diseases. The discussions involved in the article are straightaway and contained little complex and deep information about artificial intelligence and insurance pricing. Therefore, this article can be an educational essay that is approachable to all people in society, as long as they are interested in insurance pricing or artificial intelligence. Furthermore, the information about insurance pricing in this article enables the general public to gain more knowledge about the insurance they bought in their life. When obtaining this knowledge, they can choose the more appropriate insurance, and decrease the possibility of being defrauded by informal insurance companies. Through this article, we hope the general public can better understand the function of insurance, and the whole process of insurance pricing. Therefore, they can be able to verify insurance contracts and avoid insurance fraud by utilizing artificial intelligence [14]

2. RELATED WORKS

AI has become a crucial tool in insurance pricing. Currently, people can find a large number of research on AI's application in insurance. K.M. Sakthivel and C.S. Rajitha have confirmed that in the estimation of future claim frequency in non-life insurance, ANN, which is the Artificial Neural Networks, can improve the accuracy of the estimate of the actual claim frequency compared with Bayesian credibility in the case of the Poisson/gamma model for non-life insurance [1]. Additionally, the estimation of future claim frequency is a significant chain of insurance pricing. This makes AI increasingly valuable in insurance contract standards, and largely increases the speed and the rationality of insurance pricing.

Another research has shown AI's ability to predict and prevent insurance claim denial in healthcare. According to Marina Johnson, Abdullah Albizri, and Antoine Harfouche, they have proven that RAI, which is

the responsible artificial intelligence can recognize claim denial. And the article develops an innovative solution that enables insurance companies to identify early claims that are likely to be denied [2]. Utilizing ANN inside this calculation, the whole solution is bettered and becomes more precise.

Based on the research papers we have found currently, although most of them are stressing the convenience AI has provided us, few of them focus on the increase in claim rate, the aspects which led to the increase, and the benefits of the increase to the insurance company. Typically, the process of cyber insurance contract creation involves three main steps: [i] Risk identification, which is based on the identification of assets that can be affected by different threats [7], [ii] Risk analysis, which determines the likelihood of a threat and also its impact, and [iii] Contract establishment with a focus on coverage specifications and premium definition. With the increase of cyberattacks and their actual impacts, the cyber insurance market also has to evolve to handle different aspects, such as incomplete, asymmetric, or even insufficient data for pricing premiums and coverage, lack of regulations and standards, and the gap between cybersecurity and risk transfer [8]. In this context, introduces a conceptual framework for cybersecurity investments and cyber insurance decisions [9]. However, blocks are presented as a supporting tool and cannot be used as an individual tool to provide a cyber insurance service and such frameworks can well be used to assess cybersecurity correctly and, based on that, can calculate a fair premium for a cyber insurance contract. BC-based approaches for cyber insurance, open issues remain, especially with regards to achieving an efficient model that considers different nuances of the market. To address this gap, Saci focuses on mapping information and interactions [10], required to establish a trustworthy and automated interaction between customers and cyber insurers. At present, the proposed parametric specification approach yields greater predictability than two fractional bit-based specification strategies and one uninsured firm. The standard deviation of the suboptimal policy was 103% higher than the recommended approach. In addition, the model provides greater protection against extreme events, as the risk conditional value of the suboptimal strategy is 14% higher than that of the recommended approach.

3. METHODS

In terms of getting compensation, and how to use artificial intelligence to improve the odds, this is the flow chart of the corresponding claim process on the contract side.

Figure 1 shows the claims procedure. The first step of this process is to standardize the claims handling procedures between the company and suppliers for

possible commercial, delivery, quality, etc. The second is the scope, applicable to the business between suppliers, delivery, and quality breach of the claim processing. After calculating the related expenses, the department manager will review them and send them to the supplier to confirm the expenses after approval by the director.

After the supplier receives the calculation of the breach cost, confirm the relevant cost with the relevant personnel of our company, and finally confirm and sign to the relevant personnel, such as purchase fulfillment personnel, purchase engineer, and SQE issue claim advice for their respective claims.

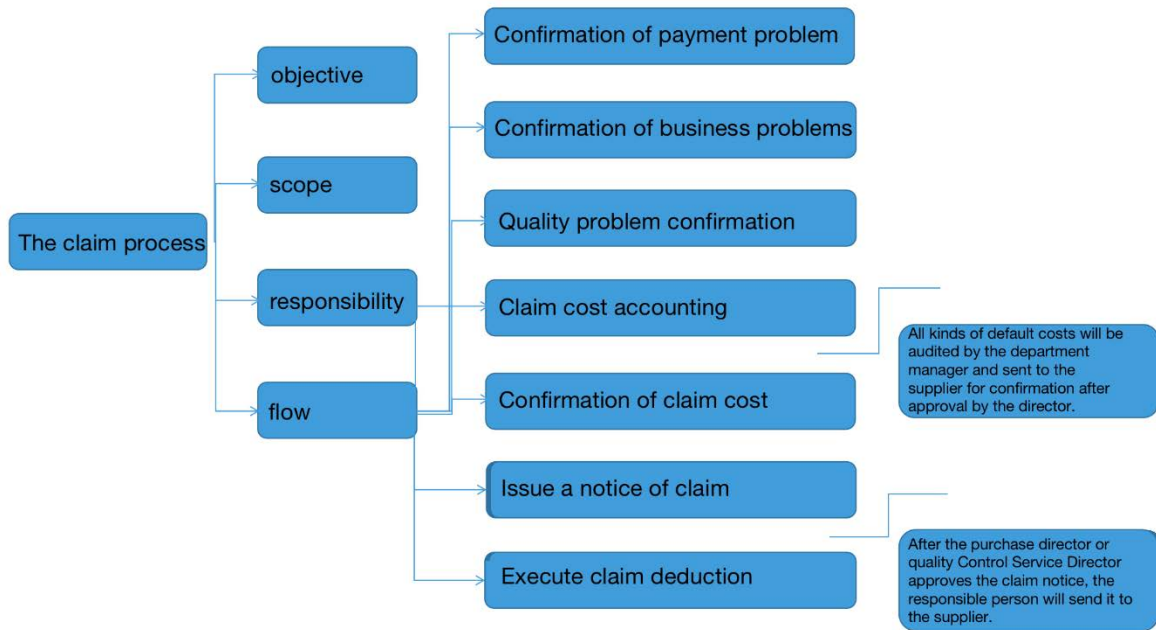


Figure 1. The claim process diagram

In the previous literature, we tried to find the influence of these external factors on the final loss of the contract through geographical coordinates and network big data, but most of these unknown factors are irregular and irregular changes, and the results are also greatly deviated from the expected.

One of the most common algorithms of artificial intelligence is to nondestructive amplification of pictures. We put two car accidents pictures on a website that uses artificial intelligence.





Figure 2. Comparison before and after AI enlargement

From figure 2, we can see that artificial intelligence enables people to magnify the picture of the accident, and therefore help insurance companies better identify the damage to the car. This helps people avoid the fraud made by the insurance companies and also helps insurance companies indemnify a reasonable amount, as it offers insurance companies more accurate ratings in auto insurance. Auto insurance companies have five levels: A++, A+, A, A-, and no rating insurers [4].

TABLE I DATA INSURANCE COMPANIES AND THEIR RATINGS

Car insurance companies	The current data of these companies	
	NAIC (National Association of Insurance Commissioners)	AM Best Affirms Credit Ratings
Travelers Car Insurance	0.43/1.0	A++
USAA Car Insurance	0.98/1.0	A++
Allstate Car Insurance	1.02/1.0	A+

According to table 1, we can see that companies with better ratings tend to have lower NAIC, which means they get fewer complaints from their clients. For most clients, credit ratings are the most direct data they can find when evaluating a company. Therefore, having better credit ratings provides companies with a great impression on their clients. To get better credit, the company should better their services to reduce complaints from clients. Using artificial intelligence to better estimate the compensation for car accidents is an excellent approach to lower the complaints. In such circumstances, artificial intelligence can be crucial to current car insurance

companies. The better the insurance companies can identify the seriousness of a car accident, the more possible it will obtain a higher level, and attract more clients. Take Ping An, which is an insurance company in China, as an example, the company developed a system, in which clients can only lodge claims by taking a photo at the accident place. With pictures like figure 2, Ping An will conduct a series of tests using artificial intelligence [5]. The nondestructive amplification tested in this experiment is one of the tests Ping An will conduct. Therefore, the existence of artificial intelligence makes insurance pricing more accurate and makes the price more acceptable and efficient.

4. DISCUSSION

Since we are on the impact of artificial intelligence on insurance contracts, we also have certain limitations. As we all know, the quality of legal contract audits determines the performance of legal work. Legal affairs undertake contract audits, it is to have a certain flow.

First of all, the contract is composed of the terms of a certain structural system, and the contract review should follow the structural system of the contract. Secondly, when reviewing legal contracts, there are standard matters.

The coming era is the era of artificial intelligence, which will change the process and the way legal services are delivered, but it will also raise concerns. A robot lawyer called DoNotPay has helped 160,000 people file ticket appeals in London, New York, and Seattle, winning 60 percent of the cases. A large number of legal contracts, many are model contracts or form contracts. When forming the initial text of the contract, the contract producer consciously standardized and formatted the terms of the contract to improve the efficiency of using the contract next time. Such contracts will undoubtedly be reviewed very quickly.

Moreover, with the continuous improvement of computing power, iterative optimization of algorithms, and gradual accumulation of big data of law, not only contracts, but also high-level legal documents such as

indictments, memoranda. Its judgments can be automatically generated.

So, in the age of ARTIFICIAL intelligence, the legal review of contracts is still necessary. But the format has changed. For those simple contracts that can be standardized, an intelligent contract review system can be designed to improve the efficiency of enterprise contract management. For contracts in the middle, there is what Jerry Kaplan calls "human-machine collaboration," in which a machine gets a preliminary review. It comes up with a preliminary review opinion, and then human lawyers or lawyers review, modify and refine it.

5. CONCLUSION

Artificial intelligence ensures the accuracy of insurance pricing in many approaches. For example, the experiment in the previous section proves that using the algorithm in artificial intelligence, one can magnify a picture in an extremely clear manner. Therefore, the insurance companies can better analyze the damage to the car in an accident and make better estimates. Artificial intelligence can bring the greatest benefit to both the client and the insurance companies during the pricing process [11]. This lowers people's refusal rates and increases insurance companies' levels. Artificial intelligence is no doubt making insurance pricing better and more trustworthy [12].

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