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The Impact of Artificial Intelligence on the Obligation to Contract in Insurance Law

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Abstract

Although Swedish contract law is largely based on freedom of contract, there are restrictions to it, such as the obligation to contract, stipulated in 3:1 and 11:1 FAL. The meaning of the obligation to contract is that an insurance company cannot refuse a consumer to conclude an agreement on the insurance that the company otherwise normally provides to the public. In this lies the idea that insurance companies have developed standard products that are provided to many policyholders. Today, individual insurance is not something that companies have to offer. However, it is made possible relatively easily and at a low price through AI, resulting in that the insurance provided is no longer seen as standard products. AI and its possibilities can lead to fundamental changes in the insurance industry, especially with regard to insurance conditions, associated legislation, and the application of the law. AI provides completely new opportunities to identify, calculate and analyze different types of risks, detect insurance fraud, formulate agreements and gather information about the policyholders. This thesis examines the impact of AI on the obligation to contract.

The function of an insurance policy is to create security for risk-averse policyholders. An insurance policy that covers all damages caused by a policyholder is not problem-free, since policyholders who are not at risk tend to be less careful. The best solution to this problem is achieved if the size of the insurance premium can fully reflect a policyholder's caution. If such a trade-off were possible, the insurance could cover all losses. However, it is often difficult to determine how careful a policyholder will be during the contract period. Adjusting the premium according to caution is therefore tricky. Insurance contracts must often involve a compromise so that the risk is shared between policyholders and insurance companies. It is natural that the insurance industry, due to the emergence of AI, might face a possible new reform given that AI models enable a more accurate risk calculation and adjustment of contracts.

In conclusion, AI will affect the view of the obligation to contract in 3:1 and 11:1 FAL. Therefore, insurance law needs to be adapted to cover new AI-related risks or be applied to meet current legislation and its purpose better.

List of Abbreviation, Acronyms and Definitions

Actuarial assessment	A statistically calculated prediction
AI	Artificial intelligence
AVLK	Law on Contract Terms in Consumer Relations, in Swedish: Lag (1994:1512) om avtalsvillkor i konsumentförhållanden
Black Box	An AI-system whose operations are not visible
FAL	Insurance Contract Act, in Swedish: Försäkringsavtalslag (2005:104)
GDPR	The General Data Protection Regulation, in Swedish: Dataskyddsförordningen
Individualized product	Tailor-made insurance product
Insurance case	The occurrence of the event to which the insurance relates
Insurance collective	The policyholders who have entered into the same type of insurance contract in an insurance company, and therefore are in the same risk group
Insurance company	Refers to the insurer who sell insurance policies
Insurance contract	Comprises a range of various terms and conditions
Insurance premium	The cost a consumer must pay for insurance
Insurance product	What the policyholder pays for according to the insurance contract
Insurance technology	The calculation basis for the insurance, in Swedish: försäkringsteknik
InsurTech	The digitalization of the insurance industry
IoT	Internet of Things, technologies that can exchange data over the Internet
KFL	Consumer Insurance Act, in Swedish: Konsumentförsäkringslag (1980:38)
NJA	Periodicals where references to judgments are published, in Swedish: Nytt Juridiskt Arkiv
Obligation to Contract	Refers to 3:1 and 11:1 FAL and means an obligation to enter into a contract, the obligation being imposed by law
Personal insurance	Refers to individual life, sickness and accident insurance

Policyholder	Used in this thesis synonymously with the insured, refers to the person who is both the insured and the policyholder
Prop.	Government bill, in Swedish: proposition
Risk-averse	Reluctance to take risks
Standard product	Insurance products that are generally held/otherwise normally provided to the public
TSL	Traffic Injuries Act, in Swedish: Trafikskadelag (1975:1410)

Table of Contents

Foreword

AI is recognized predominately for its forward-thinking. A vast majority of my knowledge about the topic has been passed down from Benjamin Liu, who has propelled me forward within my studies and career. For that, I am eternally grateful. I would also like to thank Jessika van der Sluijs, Johan Gustafsson, and Henrik Sandell for strengthening my choice of subject and its content. Last but not least, I want to thank my supervisor Stina Bratt who has guided me throughout my work.

1 Introduction

1.1 Background

AI is no longer an issue for the future of insurance law.

When AI meets insurance law, new opportunities arise, but also legal difficulties. Insurance companies are not just any company; they have a significant and central societal function.[1] The obligation to contract, in 3:1 and 11:1 FAL, functions as a control system to strengthen the consumer's position in relation to insurance companies, and therefore prevents the company's arbitrariness. When arbitrariness occurs, it can lead to some consumers being seen as undesirable on an unfair basis. From that perspective, there is justification for the obligation to contract. However, it is not easy to ensure that the obligation is effective in practice, as it has exceptions.[2] In addition, the obligation only applies to generally held insurance products, so-called standard products.[3] Thus, individualized products are not included in the definition since it is unreasonable to force companies to tailor insurance to everyone.

The increasing AI implementation in insurance companies means that individualized insurance contracts can be made possible, inexpensively and efficiently.[4] If individualized AI-solved insurance products replace the standard products, the obligation to contract will most likely be affected by this. The result can be broadly divided into two possible outcomes. The first possible outcome is that the AI-solved products are not included in the definition according to 3:1 and 11:1 FAL, since they are not considered as standard products. Since the obligation to contract is already relatively toothless, this outcome could be the nail in the coffin for the obligation. Another possible outcome is that the AI-solved individualized products are instead reinterpreted and included in the definition according to 3:1 and 11:1 FAL. In addition, it is more than just the technical possibility that needs to be investigated if such a solution were to become a reality. For instance, how insurance companies and policyholders are affected in practice.

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[1] J van der Sluijs, *Robotik, artificiell intelligens, skador och försäkringsavtalsrätten*, i Bärlund, Johan m.fl. (red.), *Nya trender och bärande principer i den nordiska förmögenhetsrätten: De 13:e Nordiska förmögenhetsrättsdagarna i Helsingfors 8-10.5.2019*, Helsingin yliopisto, 2020, pp. 167–168.

[2] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 126.

[3] 3:1 and 11:1 FAL describes standard products as "otherwise normally provided to the public".

[4] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 57.

Sweden stands out with the obligation to contract, in comparison with other parts of the world. AI-based insurance companies are also becoming increasingly popular. It is therefore particularly interesting to explore how the development of AI will affect the obligation to contract.

1.2 Purpose and Legal Question

For insurance companies to use AI appropriately, it is essential to understand how AI works and how it can affect the application of current insurance law in Sweden. The question to be answered is whether the obligation to contract in FAL is affected by individually adapted insurance contracts through AI solutions and if the impact of AI gives reason to change the established law or its application. The question is asked since societal changes such as AI may mean that the insurance legislation needs to be modified or interpreted differently to achieve its purpose.[5] This question is further borne out by the fact that insurance companies are starting to apply AI to enhance extensive insurance-related data analytics and evolve faster algorithms with transactional data. Furthermore, AI combines data in new ways to discover better underwriting risks and appropriately price the risk of various insureds based on the actual value of their risks.[6] Machine learning can be used to improve insurance companies' risks and actuarial models, which can potentially lead to more profitable products.[7]

This thesis is intended to investigate the possibility of securing the purpose of the obligation to contract, considering the AI development in insurance law. The purpose of the obligation to contract is to facilitate insurance procurement with reasonable terms for people with poor financial conditions.[8] Thus, there must be a balance between the protection needs that insurance fulfills on one hand and good conditions to conduct insurance business on the other hand.

An additional intention with this thesis is to systematize the so far incomplete analysis of the problems that arise when AI is implemented in insurance, more specifically regarding the obligation to contract. Even though AI is recently implemented in the insurance industry, the fundamental legal issues are typical. In case there are no specific rules in the area, the risk of ad-hoc conclusions increases.[9] The question is particularly important to highlight in order to counteract confusion in the established law.

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[5] The purpose of the obligation to contract is emphasized in more detail in Chapter 3.3.

[6] F Corea, *Applied Artificial Intelligence: Where AI Can Be Used in Business*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 3.

[7] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, pp. 58-59.

[8] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 143.

[9] J Schelin, *Kritiska perspektiv på rätten*, Jur. fak. vid Stockholms univ., 1 u., Stockholm, Poseidon Förlag, 2018, pp. 93–94.

1.3 Target Group and Delimitation

The first distinction that can be made is between public insurance and private insurance. The characteristic of public insurance is that it is not based on a contract, consequently, it is not usually attributed to civil law. In addition, public insurance consists of social insurance, which provides the country's citizens with basic protection. Social insurance includes general insurance, occupational injury insurance and unemployment insurance. Civil law, however, includes private insurance, which is based on an agreement between the insurer (an insurance company) and the policyholder.[10] Private insurance, which this thesis deals with, is regulated by FAL.

This thesis is aimed for readers who are fairly well versed in insurance law, the focus will therefore be on technical concepts of AI and its current use in the insurance industry. Within the framework of this thesis, AI refers to the existence of Big Data (i.e., access to large amounts of information in the form of different types of information, which can be obtained at a very high speed in a global context) and the existence of so-called dynamic algorithms, ie. Machine Learning and Deep Learning.[11] This thesis does not address the conflict that may arise in the interaction between Law and Information Technology. GDPR is close at hand for information issues that AI implementation entails, but here the focus will instead be on insurance legislation and how it is affected by AI. Personal insurance can be offered both individually and collectively. In this thesis, the focus will be on the personal insurance that is offered individually. The issues that are addressed and dealt with in the following chapters will mainly consist of issues that arise at the actual conclusion of a personal insurance contract. This thesis will therefore not touch on issues such as the renewal of insurance. Nor is social insurance relevant within the framework of this thesis. In particular, the obligation to contract stipulated in 3:1 and 11:1 FAL will be dealt with, which applies to the relationship between consumers and insurance companies.

1.4 Method and Material

A legal dogmatic method is used throughout this thesis.[12] The answer to the legal question will be based on the text of law, case law, legislative works, and doctrine, which constitute generally accepted legal sources in Sweden.[13] However, it should be mentioned the issues under investigation have rarely been addressed in case law. The obligation to contract is seldom the subject of adjudication. This means that an otherwise significant source for legal dogmatic research, case law, has not

[10] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, pp. 51–52.
[11] W Ertel, *Introduction to Artificial Intelligence*, Topics in Computer Science, 2nd ed. 2017, Cham, Springer International Publishing: Imprint: Springer, 2017, p. 11.
[12] C Sandgren, *Rättsvetenskap för uppsatsförfattare: ämne, material, metod och argumentation*, 4 u., Stockholm, Norstedts Juridik, 2018, pp. 48–50.
[13] U Bernitz, *Finna rätt: Juristens källmaterial och arbetsmetoder*, 15 u., Stockholm, Norstedts Juridik, 2020, p. 18.

been available to any great extent.[14] The other sources of law, the text of a law, legislative history, and related doctrine have therefore become of great importance. The doctrine that is available in general regarding the obligation to contract has been beneficial, to better understand the same obligation in insurance law. Legislative history for previous legislation regarding consumer insurance contracts is also relevant to better understand the purpose behind the regulation.[15] To better understand the material regarding AI, international sources have been used as there is much more comprehensive information available. Since AI is an actual phenomenon rather than a legal one, it is best described in terms of other fields of science that are more technically oriented. I have chosen to include standard works that are considered accepted by peer-reviewed scientific articles.

When a law has its origin in an older law or a new technical phenomenon is studied, interpretation problems can arise. It is necessary to take a position on how and to what extent the information in, for example, legislative work is relevant. A concrete methodological problem in this thesis is that there are no sources of direct law to the specific law issue. As a result, previously given views on law can be challenged in this thesis since it is a question of an unresolved area.

A forensic legal method will also be used to clarify the interaction of law with technology, which constitutes an interdisciplinary method and involves knowledge from different disciplines.[16] In this thesis, it means that technology-oriented facts are touched on to clarify how AI solutions are used, and how it affects and develops insurance law. The ambition is that the choice of material will contribute to an objective analysis with several different perspectives. Already here, it may be added that it is not quite easy, certainly for competitive reasons, as a third party to get more detailed information on the scope of insurance companies' use of AI. However, there is good reason to believe that today's insurance industry is facing a shift, or in any case, at the beginning of a change to digitization.[17] The starting point is, therefore, a legal dogmatic method with elements of legal positivism. When new legal figures are introduced in an existing legal system, it has proved to be particularly important to identify relevant issues through interdisciplinary legal science analysis. However, interdisciplinary ruling research does not mean that methodological approaches that are foreign to legal science are applied. The purpose of the interdisciplinary law method is to answer questions that can hardly be solved or described in the legal disciplinary context.[18] It should be clarified here that this thesis is about seeking answers to legal

[14] There is one case (NJA 1987 p. 383) where the obligation to contract is actualized. However, this case is mainly about a part of the obligation to contract that is not covered in this thesis, namely the extension of insurance contracts. It is uncertain what relevance NJA 1987 p. 383 has for the conclusion of the agreement, which is the framework of this thesis.

[15] Prop. 1979/80:9, Consumer Insurance Act, in Swedish: Konsumentförsäkringslag (1980:38).

[16] C Sandgren, *Rättsvetenskap för uppsatsförfattare: ämne, material, metod och argumentation*, 4 u., Stockholm, Norstedts Juridik, 2018, pp. 54–55.

[17] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 57.

[18] C Sandgren, op.cit. pp. 61–62.

problems that may arise in dealing with a new societal phenomenon, more specifically AI. Thus, the study is mainly focused on legal handling.

1.5 Disposition

To be able to answer the legal question, a relevant factual background must be addressed by examining how AI is used today. The first step is, therefore, to clarify what AI is. The second step is to explain the meaning of the obligation to contract, which requires investigating how the risk affects the premium and how an insurable risk is identifiable. Only when these steps are met, the legal question can be answered.

The thesis begins with information about AI and contributes to an understanding of what opportunities and difficulties AI entails. The next chapter provides an overview of the obligation to contract, to clarify its meaning and associated complications, regardless of AI. The following chapter voices the concerns of the relationship between insurance law and AI and highlights the relevant issues and solutions within the thesis framework. Complications and ambiguities are treated throughout the thesis.

In the last section of the thesis, common problems associated with the obligation to contract and AI will be examined. Finally, a definitive conclusion is drawn through a summary of the overall findings. In this way, the answer to the legal question is achieved, where the facts are separated from analysis and the technical is separated from the legal issues, to better achieve the purpose of the thesis.

2 Explaining AI – Meaning and Consequences

2.1 Introduction

AI is not the future. AI is here and now. Today, we are already able to see how AI is fundamentally transforming the entirety of industrial sectors.[19] Business strategies and business models must be adapted based on the opportunities and risks that AI can entail. Many aspects of our daily lives are already affected by AI, for instance, a personal assistant in our mobile phones and household appliances. AI is a machine's ability to display human-like features, such as reasoning, learning, planning, and creativity. AI enables technological systems to perceive their surroundings, manage what they perceive, solve problems, and achieve a specific goal. The computer receives information already prepared or collected through built-in sensors, i.e., via a camera. Thereafter, the collected information is processed and responded to accordingly. AI systems can adapt their behavior, to some degree, by analyzing the effects of past actions and work independently.[20] Furthermore, AI raises awareness of both risks and habits, which can drive us towards better behaviors.[21]

Even though we still seem to be in a phase when AI issues are handled as future issues, AI technology is developing rapidly today. Some AI technologies have been used for more than 50 years. Still, with the development of computers, the availability of vast amounts of information and new algorithms have led to breakthroughs for AI recently.[22] AI is perceived as vital to society's digital transformation and has become a priority for the EU.[23] To understand the role of AI, we must first understand what AI is.

AI is a rapidly evolving area of study on machines and their modes of operation. Machine ethics of AI is mainly focused on two emergent areas. The first area is about minimizing or eliminating harm to humans by machines. The second area is about ensuring that machines behave ethically, as AI covers a broad, transdisciplinary area of research and study, spanning from engineering, through

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[19] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, pp. 57-59.
[20] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, p. 13.
[21] M Coeckelbergh, op.cit. p. 53.
[22] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, p. 71.
[23] '*A comprehensive European industrial policy on artificial intelligence and robotics*', by the European Parliament, 12 February 2019, <https://www.europarl.europa.eu/doceo/document/TA-8-2019-0081_EN.html> [accessed 18 May 2021].

biology, the economy, and law, all the way to complex ethical and philosophical questions on what is fair and just. Therefore, the common principles indicate that AI should be socially beneficial, fair, safe, and transparent. A further principle, which is more relevant to this thesis, is that AI should be designed with responsibility and security in mind.[24]

AI refers to a technical solution in a computer system that uses intelligent learning based on algorithms to make self-contained decisions using the information entered into the computer system. AI can exhibit different degrees of autonomy.[25] The abundance of data can be used to refine customer segmentation and provide individualized offers based on personal features.[26] In order for AI to be reliable and useful within the law, the solutions must be based on fair predictions so that AI does not unethically discriminate. Therefore, it is vital that the data entered does not consist of unfair biases.[27] Another important aspect of AI is that there is a certain explainability that shows how the AI model makes its predictions. Explainability leads humans closer to an understanding of AI, which is fundamental for regulating and living with AI. In order to build trusted AI, researchers are developing various approaches to achieve fairness and explainability best.[28] Within the framework of this thesis, AI refers to I) Big Data, II) Machine Learning and III) Deep Learning.

2.2 The AI Terminology Used in the Thesis

2.2.1 Big Data

The constant improvements in algorithms and advanced hardware make data the universal resource for AI today. Big Data is a term that represents growing volumes of data. The most important aspect of Big Data is to create value, since the data is only as valuable as the utilization in the generation of insight. With the help of big data, organizations can make decisions based on the large amounts of data from their data sources instead of subjective perceptions and assessments. Big data is also used as a basis for automated business and decision-making processes and for developing and training solutions based on artificial intelligence.[29]

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[24] P Boddington, *Towards a code of ethics for artificial intelligence research*, New York, Springer Berlin Heidelberg, 2017, p. 12.

[25] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 28.

[26] F Corea, *Applied Artificial Intelligence: Where AI Can Be Used in Business*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, pp. 6–7.

[27] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, p. 114.

[28] '*The AI 360 Toolkit: AI models explained*', by Sharath Kumar RK, Manjula Hosurmath, Neha, <https://developer.ibm.com/technologies/artificial-intelligence/articles/the-ai-360-toolkit-ai-models-explained/> [accessed 14 May 2021].

[29] F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, pp. 1–2.

Data volumes are increasing today; more data has been created in the past few years than in the entire history of humanity. In today's society, only sophisticated algorithms can process Big Data in real-time. Big Data processing solutions can expose, aggregate, and summarize large volumes of data from different sources. Thereafter, AI will use this data to enable decision-making in real-time and determine better results based on continuous development. AI and Big Data must be seen as an opportunity with great analytical potential.[30]

Data comes in many forms; some are organized, some are not. Data on its own is meaningless. This is where human judgment comes into play: by interpreting the results after posing the right questions. A human's competence is still required, even if a specific quantitative question could be more efficiently replied to by a machine. Therefore, having data available is not enough for AI to be successful. An AI algorithm cannot extract information directly from raw data. Most AI algorithms rely on external manipulation and collection before analysis. When an algorithm is collecting useful information, it does not necessarily represent the right information.[31]

2.2.2 Machine Learning

Today, AI has taken the form of algorithms in Machine Learning. An algorithm is a function or model that a computer program can follow and run. In the past, it was often a programmer who created an algorithm with rules and conditions that a program then followed blindly. The idea with Machine Learning is that the algorithm itself learns to find patterns and rules continuously. Machine learning evolves as the amount of data increases as the rules and patterns become too complex for humans to interpret.[32]

In the same way as a human being, the algorithm must be trained to cope with a particular task given certain conditions. All lessons learned from experience must be saved somewhere. For humans, it is stored in our brain, which is a complex neural network with neurons and synapses. When a person gets an impression, for example, sees an image, information about the image is sent through the brain. If it is something we have seen before, the synapses become strong, meaning that certain neurons get a higher value, which in turn means that we understand. This is the result when a person undergoes an experience or forms a memory. A group of algorithms in Machine Learning are called artificial neural networks that try to mimic a real neural network as described above. As for a human being, the network must be trained with a lot of data to be able to update the importance status and gain a better understanding. The goal of Machine Learning is the extraction of patterns from the analysis of data.[33]

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[30] F Corea, op.cit. p. 7.
[31] F Corea, op.cit. p. 3.
[32] I Goodfellow, Y Bengio, & A Courville, *Deep learning: Adaptive Computation and Machine Learning*, Cambridge, Massachusetts, The MIT Press, 2016, p. 8.
[33] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, pp. 105–111.

2.2.3 Deep Learning

Deep Learning is a research area within Machine Learning. Deep Learning involves feeding machines with extensive data sets, which are the basis for interpreting new data. The basic idea of Deep Learning is to train a deep neural network consisting of many layers. A neural network with many layers can solve problems in many small steps, rather than in one or two large steps. The neural network creates representations as the information flows through the layers. When the importance status is adjusted, some neurons become stronger while others become weaker or even evanesce. The neural network guides itself in this way. Thus, Deep Learning can be considered as a process where data is filtered in several steps – and as data flows through the layers, they are deciphered. Even though this is not a revolutionary idea, it means that with a sufficiently large set of training data, it is possible to train these neural networks to solve tasks that were not previously possible. Unlike other analysis methods, Deep Learning can handle tabled data, images, and videos. Regardless of what the data entails – the neural network handles this simultaneously.[34]

Deep Learning has recently gained wide application in practice, thanks to improved processing power and access to data, which aided in improving the results.[35]

2.3 Is AI Reliable?

2.3.1 Introduction

Algorithms and AI have changed the way we see data. As a consequence of bringing together Big Data, Machine Learning, and Deep Learning, companies can tailor individualized products to specific consumers. It is therefore technically possible, and potentially beneficial, to effectively implement AI within companies. However, AI can become biased since the human factor, on which AI depends, is not flawless. When AI recommends decisions, bias may arise and be unfair or unjust to particular groups or individuals. Bias is often unintentional: the users and developers are not always sufficiently aware of their own biases.[36] For AI to achieve an objective and reasonable basis, a correct implementation is required. Algorithms are assumed to compile data objectively. From here, we can discern the idea of data as an objective and neutral reflection of reality. Despite this, our data is collected and extracted from observations and calculations. Data is also profoundly cultural and colored by society's norms and values. It does not occur naturally since it is collected and manipulated. Thus, data is shaped by

[34] I Goodfellow, Y Bengio, & A Courville, *Deep learning: Adaptive Computation and Machine Learning*, Cambridge, Massachusetts, The MIT Press, 2016, pp. 5–7.
[35] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, p. 86.
[36] M Coeckelbergh, op.cit. p. 112.

human decisions, interpretations, and filters. Behind data production lies complex compilations of people, places, documents, practices, and technology. Since data and programmers have prejudices, keeping AI neutral is a difficult task. Furthermore, algorithms have been trained to see connections and correlations in large data sets, but not to understand causal relationships. Algorithms do not ask why they get a particular result and what the consequences may be. As a result, AI algorithms can become blind to ethical questions.[37]

2.3.2 How to obtain reliable data

Data comes from several different sources, but the most common source is information from humans. Making mistakes is a part of being human. Nevertheless, many AI designs assume that humans will not make mistakes. To achieve reliability, it is therefore required that the result produced must be both consistent and expected. Data that is reliable does not contain surprises; no one is shocked by the outcome. We want data that is simply confirming what we already know. It is necessary to maintain balance when obtaining data, to fit within certain limits and meet specific criteria. Once the data is stored, the reliability can decrease unless it remains in the expected form. Ensuring that data is reliable means that no one tampers with the data to make it fit in an expected domain.[38] The idea is to avoid societal and ethical problems created by AI at the early stage of developing AI solutions.[39]

2.3.3 What Makes AI Products Trustworthy?

Trust is complex as it requires tools for acting in a world that cannot be considered entirely secure. At the same time, trust-building is recognized as a critical factor for developing and using AI.[40] The level of trust that we place in new technology has a lot to do with the stories that we tell ourselves. The attitude towards new technology is generally formed by the fear of the unfamiliar, which can lead to mistrust. However, new technology is not problem-free; instead, it must be taken seriously and be developed with caution.[41]

In the domain of AI and software, the proofing needed to make the products more trustworthy include processes like I) always following checklists for the software, II) coding standards, III) testing, such as unit tests on every single model that are always tested when modifications are made, IV) simulating data for machine learning so that you have standard test sheets that you can again

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[37] M Coeckelbergh, op.cit. p. 103.
[38] I Goodfellow, Y Bengio, & A Courville, *Deep learning: Adaptive Computation and Machine Learning*, Cambridge, Massachusetts, The MIT Press, 2016, p. 122.
[39] M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, pp. 205–210.
[40] Falcone, R, MP Singh, & Y-H Tan, eds., *Trust in cyber-societies: integrating the human and artificial perspectives*, Lecture Notes in Computer Science, Lecture Notes in Artificial Intelligence, Berlin; New York, Springer, 2001, pp. 8–9.
[41] Falcone, R, MP Singh, & Y-H Tan, op.cit. p. 3.

recheck when the code is modified or every time a machine learning model is retrained. Code review processes constitute a significant part of guaranteeing that the product and service are trustworthy. Then there are also other mathematical approaches, for example, correctness proofs. If the code is written along certain lines, some techniques can be applied to check the logical correctness of the code automatically. It is this specific process that increases trustworthiness.[42]

2.3.4 What Makes AI Scientists Trustworthy?

It is fundamental that an AI scientist cares about the social benefits of their work. The scientific method defines science and ensures that things are properly documented, so that any result can be replicated. Also, it requires that the theories make predictions that are accurate and consistent.[43]

The scientific method has several crucial aspects, such as inclusivity. There needs to be a diversity of stakeholders throughout the implementation of the scientific method. Such variety includes data collection, analysis, observation of the data, and generating hypotheses. A diverse set of scientists will see different things in the data and make different hypotheses.[44] Scientists from different backgrounds will also crosscheck each other to avoid mistakes. If crosschecking is not done within AI, a substantial amount of bias within the accuracy or the predictions of the trained machine learning model arise. It is important to keep humility to avoid over confidently jumping to conclusions that are not warranted. By performing all of these tasks over a period of time, scientists develop a reputation, a track record, and all of that helps to ensure that the scientists are trustworthy.[45] This is what makes science a powerful tool for increasing the trustworthiness of knowledge compared to pre-scientific method approaches.[46]

2.3.5 The AI Black Box Explanation Problem

While a neural network produces accurate results, the course of action is often impossible or impractical to be explained in human logic. This is referred to as the AI Black Box Explanation Problem. AI technology is very complex, and it can be challenging to determine exactly how AI solutions have made a decision or come to a conclusion. The Black Box algorithm is fed with large amounts of data that are relevant to a specific task. It identifies patterns and improves accuracy with use, which is useful when data sets are so large that it would be pointless

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42 R Mittu, D Sofge, S Russel, *Autonomy and Artificial Intelligence: A Threat or Savior?*, 1st ed. 2017, Cham, Springer International Publishing, 2017, pp. 129–132.

43 I Goodfellow, Y Bengio, & A Courville, *Deep learning: Adaptive Computation and Machine Learning*, Cambridge, Massachusetts, The MIT Press, 2016, p. 115.

44 Falcone, R, MP Singh, & Y-H Tan, eds., *Trust in cyber-societies: integrating the human and artificial perspectives*, Lecture Notes in Computer Science, Lecture Notes in Artificial Intelligence, Berlin; New York, Springer, 2001, pp. 1–6.

45 Falcone, R, MP Singh, & Y-H Tan, op.cit. p. 103.

46 The pre-scientific methods have passed down from previous generations and does not necessarily provide trust.

to allow a human to try to process them. However, there is a disadvantage – the reason why a pattern arises cannot be interpreted by humans and therefore cannot be understood or justified. This can lead to AI systems acting unpredictably or making unpredictable decisions.[47] Suppose someone is negatively affected as a result of an AI system doing something unpredictable. In that case, it can be difficult to claim responsibility or to correct the error that led to the damage. After all, if our rights are affected by an AI, we want to know why. Without proper oversight, an AI can be as biased and manipulative as a human. However, in some cases, we may be prepared to accept the lack of transparency, especially if the alternative is not to gain any insight at all.[48]

If AI takes over parts of what humans do, it is required that someone can be held responsible for any inaccuracies. For responsibility to be placed, the errors must be understandable and possible to explain.[49] Although programmers know how AI works regarding Machine Learning and Deep Learning, it can be difficult to explain the precise way the machines achieve a particular result. This is a problem for responsibility, since it cannot be explained by humans who use or create AI. A lack of transparency can also lead to less trust in AI and the companies that use AI. It would be beneficial to open the Black Box, not only for ethical reasons but also for improving the AI system and learning from it. At present, the ethical issue is about trade-offs between explainability and performance. Moreover, even if full transparency would be possible to achieve, private companies may not always be willing to reveal their algorithms since they want to protect their commercial interests.[50]

2.4 Summary Discussion

AI is a machine or program that can perform tasks that usually require human intelligence. Machine Learning and Deep Learning are used to achieve AI that aims to develop the machines' ability to independently understand and handle large amounts of data. However, all data is not good quality data and should therefore not be stored solely for data's sake. The most crucial aspect of Big Data is to create value. More data does not necessarily mean better accuracy. For data to be reliable, a balance must be maintained when obtaining it. Otherwise, there is a risk of overfitting data into the model, without actually deriving any further insight. With the help of Big Data, companies can make decisions based on the large amounts of data they have in their data sources instead of on subjective perceptions and assessments.

Machine Learning is based on algorithms for analyzing and learning from the data to make a decision. The goal of Machine Learning is the extraction of

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47 F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 47.
48 M Coeckelbergh, *AI ethics*, The MIT Press Essential Knowledge Series, Cambridge, MA, The MIT Press, 2020, pp. 106–109.
49 M Coeckelbergh, op.cit. p. 103.
50 M Coeckelbergh, op.cit. pp. 105–108.

patterns from the analysis of data. Deep Learning has emerged from Machine Learning and can be considered a process where data is filtered in several steps. Deep Learning is an artificial network where the algorithms work as when the human brain neurons communicate with each other. Deep Learning consists of a neural network with many layers and can solve problems in many small steps, unlike Machine Learning, which solves problems in one or two large steps. Thus, Big Data enables more efficient Machine Learning, which has been further developed into Deep Learning. The result is, for example, that companies that use AI solutions can customize products through algorithms that review consumer profiles.

What sets today's AI apart from the past is the volume of data, the analytical skills to interpret AI, and more user-friendly tools that enable a broader user base to understand AI better. However, if AI takes over parts of what humans do, it requires that AI is implemented correctly. Correct implementation of AI entails I) good quality data, II) processes that increase the trustworthiness, III) that AI products and scientists are trustworthy, and IV) a certain level of transparency. Furthermore, it is required that someone can be held responsible for any inaccuracies. Hence, errors must be possible to understand and explain. However, there are some obstacles to this, including the phenomenon of the Black Box. Consideration must also be given to the fact that competition can be counteracted if companies that use AI are forced to be completely transparent with their algorithms.

3 The Obligation to Contract in Insurance Law

3.1 Introduction

Swedish contract law is based on freedom of contract.[51] The freedom of contract means that individuals can decide whether they want to enter into an agreement, with whom the agreement is to be entered, and the agreement's content. The principle "pacta sunt servanda", that agreements must be kept, strengthens the freedom of contract and has for a long time functioned as a fundamental precondition for orderly human coexistence.[52] However, this principle can lead to parties with a worse position being negatively affected due to absolute freedom of contract. The negative consequence applies especially when there are different power relations, and the stronger party abuses its position. To counteract the weaker party being denied access to contracts that are necessary to meet their needs, the obligation to contract has been introduced. Swedish law is therefore characterized by relative freedom of contract.[53] The mandatory legislation in 3:1 and 11:1 FAL is an expression of the obligation to contract within insurance, which constitutes the subject of this thesis.

The model for the contracts regulated by contract law is based on two parties unilaterally binding to their memorandum of understanding, and that both understandings correspond to each other. First, the tenderer leaves a tender, then the tender recipient responds with a similar acceptance. In this way, a binding agreement has arisen.[54] Insurance companies generally have a superior economy and superior expertise in relation to the policyholder.[55] Therefore, the parties do not enter the agreement on equal starting points. The policyholder has an inferior position; this inferiority is also reflected through how the contract content is emerging. Taking into account the principle of product freedom, the insurers can freely design their products and therefore choose what risks to insure. As a consequence, the principle of product freedom results in insurance companies having the choice to define their desired customer base.[56]

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[51] J Ramberg, C Ramberg, *Avtalsrätten*, 7 u., Stockholm, Norstedts Juridik, 2019, p. 16.
[52] J Ramberg, C Ramberg, op.cit. p. 85.
[53] J Ramberg, C Ramberg, *Allmän avtalsrätt*, 11 u., Stockholm, Norstedts Juridik, 2019, p. 36.
[54] J Ramberg, C Ramberg, op.cit. p. 92.
[55] The policyholder does not always have an inferior position. Sometimes, the policyholder dictates the terms of the contract since important amounts of money are involved.
[56] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, pp. 140–148.

3.2 What is the Obligation to Contract?

During the 1980s and 1990s, government inquiries were made to renew insurance law legislation. In 1986, an interim report was issued by the Insurance Law Committee in which the committee proposed to introduce a personal insurance law.[57] The obligation to contract was hereby formed for personal insurance, and later became a statutory expression in 3:1 and 11:1 in the current FAL. After consideration between insurance technology and consumer protection interest, the latter was of greater importance.[58] In this way, the equivalent of the obligation to contract and the stronger consumer protection that characterized KFL was implemented. The result was the current FAL that replaced the 1927 FAL and the 1980 KFL.[59] The meaning of the obligation in 3:1 and 11:1 FAL is that insurance companies cannot deny a personal insurance contract with consumers, provided that there are no special reasons for declining and that the insurance is otherwise normally provided to the public. This is explained by the fact that the individual has a need for personal insurance and is worthy of protection. However, it cannot be required that the insurance company must deviate from the actuarial assessment of the risk. What the legislator mainly wants to prevent is that the insurance application is rejected on unreasonable grounds. From a legal certainty perspective, it has also been considered important that a decision by the insurance company to refuse can be tried by a court.[60] If an insurance company denies a consumer insurance without a reasonable reason, the court may decide that the consumer is entitled to insurance according to 7:6 or 16:7 FAL.[61]

It should be emphasized in particular that, on one hand, the policyholder has a special need for security. On the other hand, the insurance technology is vital for the insurance company that enters into its agreements under certain conditions based on the risk. If the insurance technology fails, it can have significant financial consequences. The legislature and the courts must weigh these interests against each other. In contract law, the legislator is particularly concerned with protecting the interests of consumers, which is done through mandatory legislation and official control of insurance contract terms.[62] As a result, the obligation to contract increases the freedom of choice for the consumer, while restricting it correspondingly for the insurance company.

Furthermore, the obligation to contract is sometimes stipulated to enable and facilitate various measures for the common good of the citizens. This creates the conditions for achieving certain goals that are considered important for society as a unit.[63] The legislation primarily aims to ensure that as many people as possible

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[57] SOU 1986:56.

[58] Ds 1993:39, this memorandum is largely based on SOU 1986:56.

[59] New FAL entered into force on 1 January 2006, prop. 2003/04:150.

[60] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 489.

[61] 7:6 FAL regulates what applies when a consumer has been refused insurance coverage and wants to sue the insurance company in this matter. The section of the law has its equivalent in 16:7 for personal insurance and is dealt with further in prop. 2003/04:150 p. 204 f.

[62] B Bengtsson, *Försäkringsrätt: några huvudlinjer*, 10 u., Stockholm, Norstedts Juridik AB, 2019, p. 50.

[63] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 172.

are entitled to personal insurance. It is considered necessary that everyone should have an opportunity to obtain the protection that complements social insurance. Therefore, personal insurance is made possible, and the opportunity is further strengthened through the obligation to contract.[64]

The insurance contract is characterized by the fact that it includes a certain degree of uncertainty.[65] Insurance is closely linked to liability for damages, which is regulated in tort law, and together they form the legal area of the right to compensation.[66] Fundamental to the right to compensation is that the distribution of financial losses as a result of damages must satisfy generally recognized demands for social justice and security. The long-accepted view in Swedish law is that insurance is better suited than tort law when allocating risks. Thus, insurance solutions have taken an elevated position in the right to compensation, which further justifies access to insurance for consumers.[67]

When insurance, after all, cannot be obtained or is obtained with special reservations, it should be motivated by the insurance company. This is important mainly since it enables the individual to assess whether there is reason to request judicial review of the insurance company's decision. Furthermore, it leads to the companies carefully thinking through the reasons for decisions. In light of what has been stated so far, the insurance companies' risk assessments must be based on an individual basis and not according to a template. No one should have to risk getting no insurance if it cannot be justified in an acceptable, objective, and factual manner. The technical considerations that the insurance companies do must, therefore, as far as possible, have their basis in the individual's conditions and be based on the correct assessment.[68]

3.3 The Purpose of the Obligation to Contract

As of now, insurance companies can easily increase the premium to deny providing insurance to certain undesirable customers. However, this leads to a question: if this is true, why would the legislator enact this "obligation to contract" in the first place? What is the legislative history and background for this provision? The idea behind this obligation is similar to those of anti-discrimination laws.[69] The right to personal insurance fulfills an important function for individuals and society. At the same time, a prerequisite for fulfilling the societal role is that there are good conditions for insurance companies to conduct insurance activities.[70] Otherwise, there is a risk of a reduced product range from insurance companies,

[64] Prop. 2003/04:150 p. 245.
[65] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 20.
[66] J Hellner, M Radetzki, *Skadeståndsrätt*, 10 u., Stockholm, Norstedts Juridik, 2018, pp. 184–185.
[67] Prop. 2003/04:150 p. 244 f.
[68] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, pp. 186–187.
[69] The Discrimination Act, in Swedish: Diskrimineringslagen (2008:567).
[70] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 143.

resulting in an inferior opportunity to ensure insurance against different types of hazards.[71]

In many situations, individuals have a solid and legitimate need to acquire security against unforeseen events. Private personal insurance aims to protect at a future event when the realization is more or less uncertain. Insurance could, for example, cover income loss after an accident or replace costs in connection with a health care visit. The possibility of getting insurance compensation has excellent economic and social importance for the consumer. Strong protection of individuals' right to personal insurance is, therefore, a centrally social interest.[72] The idea is that individuals should not depend on the insurance company's arbitrary assessment when it comes to something as crucial as their insurance coverage. At the same time, the insurance companies must follow the requirements of the insurance technology.[73] Note that an absolute obligation to contract exists only in traffic insurance in Sweden.[74] The need for the obligation to contract within personal insurance is emphasized by the fact that certain groups in society still have difficulty in being insured. For example, it can apply to children in adoption situations.[75] Requirements to increasingly meet certain groups' need for insurance protection also risk affecting others in the collective. These conflicting interests should be fulfilled to the best possible extent, as they form the basis of the trade-off that needs to be made to achieve the purpose of the obligation to contract.[76] Although it is clear that the right to personal insurance fulfills an important function for individuals, there are also problems associated with giving the obligation to contract an overly strict interpretation.

A related issue is the consequences of the insurance companies' application of the obligation to contract in other areas of society. In previous legislative work, concerns have been expressed that the insurance companies overinterpret or misinterpret health information that is collected. This, in turn, can lead to parents or care staff withholding or not keeping medical records. This concern was emphasized in particular regarding child insurance and record-keeping at child health care and student health.[77] It has also been claimed that insurance companies sometimes make their decisions based on too shallow material. For the purpose of the obligation to be achieved, it is required that the information obtained is sufficient for a correct assessment.[78]

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[71] This is discussed further in Chapter 4.2.2.
[72] Kommittédirektiv 2014:80, pp. 1–10.
[73] Prop. 2003/04:150 p. 1.
[74] Everyone can get a traffic insurance regardless of how bad the risks are, this is necessary in order to protect the possibilities of an injured third party for compensation (5:1 TSL).
[75] Prop. 2009/10:241 p. 23.
[76] Prop. 2012/13:168 p. 19.
[77] Prop. 2009/10:241 p. 38.
[78] Report from the Riksdag 2012/13:RFR6, p. 40.

3.4 The Relation Between the Duty to Provide Information and the Obligation to Contract

The prerequisite for the obligation to contract is that the company receives relevant information to determine the risk.[79] However, complications may arise in the situation where the policyholder is obliged to inform the insurer. An example of this is when the insurance company wants to get information about a person's health by collecting patient records, which can be considered an infringement of privacy. Consent to this may only be requested if it is necessary to examine the insurance application. This means that the collection of health data is not always a simple task for insurance companies.[80]

Insurance companies' management of insurance applications can also be examined based on discrimination legislation.[81] The Discrimination Act (2008:567) stipulates that a person with disabilities must not be disadvantaged, by being treated worse than anyone else would have been treated in a comparable situation. There are examples in case law when discrimination has been considered to exist since an insurance application has been rejected without an individual assessment of the application, regardless of whether such an assessment would have resulted in an insurance being issued or not.[82]

The duty of the policyholder to provide information has in FAL been limited to a duty to answer, which means that the policyholder must provide correct and complete answers to the insurance company's questions.[83] In principle, it is permitted for the company to ask any questions they want to the person to be insured as long as the requested information is technically relevant and is not discriminatory. For the information that is asked to be justified, from a technical insurance point of view, it must be relevant to the relationship between the risk and premium for a particular insurance product. In this respect, the obligation to contract can be said to correspond with the duty to provide information.[84]

Another situation where the obligation to provide information is important is when the insurance company must inform the consumer, for example in cases where insurance is not granted. The company must then provide an explanation to why the requested insurance has not been granted so that the consumer can have the matter tried in court.[85]

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[79] 4:1 FAL stipulates that the policyholder is obliged to, at the request of the insurance company, provide information that may be relevant to the insurance.

[80] Compare 11:1 a FAL which prescribes that the insurance companies, only if necessary, may request consent to the collection of information about an individual's health condition.

[81] Kommittédirektiv 2014:80, pp. 1–10.

[82] Kommittédirektiv 2014:80, pp. 1–10.

[83] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 409.

[84] Prop. 2003/04:150 p. 499.

[85] Technically, 7:6 and 16:7 FAL are designed to apply in a similar way.

3.5 Risk Assessment and Its Impact on the Obligation to Contract

3.5.1 Relevant Risk Factors When Assessing Premium Cost

Insurance companies are generally unwilling to report how risk assessments of customers are made, as competitors can position themselves with somewhat more generous assessments. Furthermore, discrimination law limits the conditions that may be set, for example, age, gender, and religion. Take, for instance, an insurance company that considers itself to have a statistical basis for assessing that drivers of certain sex pose a greater risk of injury than drivers of another sex. Thereby, it can be sensitive to assess one group to have a higher risk than the other group, even if this could be justified by statistical data. Reasonably, most insurance companies use a mixture of their own statistics and official statistics, for example, sick leave and death rates. Pricing is then governed by this in combination with market competition and the circumstances of the individual case.[86] Therefore, an important starting point is that a customer should not be treated worse than another customer in a comparable situation. This means that policyholders within the same risk group should be treated equally.

The insurance companies use scientific calculation methods to distribute risks. All risk assessments are based on the fact that customers are divided into different groups based on risk level. The insurers believe that customers constitute so similar risks within their respective risk groups that premiums and other insurance terms are the same for all customers within the risk group. Since it is difficult to divide risk groups completely on an individual basis, the grouping occurs based on specific parameters. For example, income, education, smoking habits, and other lifestyle factors are often mentioned as alternative parameters, but they can be perceived as privacy. Such parameters are also difficult to use since an individual's behavior and life situation can vary over time.[87]

3.5.2 What Is an Insurable Risk and How Is it Identified?

An insurable risk can be identifiable by I) mutuality, ie a large number of similar exposure units, II) unintentional and accidental loss, ie, independent from the insured customers and not predictable, III) calculable chance of loss that is measurable and determinable.[88] A basic principle in insurance law is the principle of equivalence, which means the insurance premium for each insurance must

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[86] B Bengtsson, *Försäkringsrätt: några huvudlinjer*, 10 u., Stockholm, Norstedts Juridik AB, 2019, p. 30.

[87] '*Riskbedömning och premiesättning'* by Svensk Försäkring, <https://www.svenskforsakring.se/om-forsakring/riskbedomning-ar-inte-diskriminering--om-premiesattning-och-likabehandling/> [accessed 14 May 2021].

[88] B Bengtsson, *Försäkringsrätt: några huvudlinjer*, 10 u., Stockholm, Norstedts Juridik AB, 2019, pp. 11–14.

correspond to the risk of insurance cases.[89] Incorrect calculations or risk assumptions can affect all existing policyholders, by reducing the insurance company's opportunities to fulfill its obligations. If insurance were to be granted without sufficient consideration of risks, it would lead to a so-called counter-selection problem. A counter-selection begins with the premium being set too low for some insurance applicants. This may lead to this group taking out insurance to a greater extent compared to what they would have done if the risk, and therefore the premium, had been correctly calculated. For the total premium income to be sufficient, the others in the policyholder collective must pay a premium that is higher than the risk the collective represents. Thus, their insurance gets an overprice. The consequence of an overprice may be that more consumers refrain from taking out insurance. Raising the premiums that have been set too low, in order to have sufficient assets to pay compensation in the event of insurance, only leads to a stronger counter-selection effect. The counter-selection impact can lead to people who can easily and affordably acquire insurance may completely lack insurance coverage in the future.[90]

3.6 Exceptions to the Obligation to Contract

3.6.1 Introduction

For an insurance company to be able to refuse insurance, increase premiums, or provide insurance with certain conditions, the decision must be based on an objectively acceptable basis that can be motivated by the insurance company. An objective basis should include that the insurance company clearly points out the individual risks with each consumer. Given that every consumer is unique, it is not possible to say for sure whether a consumer will have an insurance case or not. In order to achieve objectivity in the assessment, it is required that the company can show with the help of statistics and previous experience of the same type case that there is a risk of insurance cases in the individual case.[91]

The exceptions to the obligation to contract in 3:1 and 11:1 FAL are that the insurance is I) not otherwise provided to the public, meaning that the insurance is not a standard product due to being generally held, alternatively II) that there are special reasons.

3.6.2 What is a Standard Product?

As shown in 3:1 and 11:1 FAL, there is an obligation for companies to offer such insurance that the company normally provides to the public. This is a prerequisite

[89] The fact that insurance companies' finances, which are based on the premiums paid by policyholders, must be solid is stated in 1:1 Insurance Business Act, in Swedish: Försäkringsrörelselagen (1983:713).
[90] Kommittédirektiv 2014:80, pp. 1–10.
[91] Prop. 2003/04:150 p. 499.

for the obligation to contract.[92] In determining whether individual insurance is otherwise normally provided to the public, it should primarily be considered based on the insurance company's product range, insurance terms, and how the company performed in previous insurance practices.[93] The companies are not obligated to insure the risks that are not included in their regular range. The company also does not need to extend its operations in addition to the geographical area or the clientele it is intended for. The fact that the company is authorized to offer certain insurance, does not matter if the company has chosen not to do this. This can be said to be an expression of the principle of product freedom. Furthermore, the fact that a company does entail a certain type of insurance, e.i. Health and accident insurance for children, does not mean that other insurance companies also have to do so.[94] Consequently, the provision also means that the consumer must be prepared to accept the insurance terms that an insurance company applies to the insurance. For instance, there may be some exceptions that the company normally does in the conditions that cannot be removed regardless of whether the policyholder pays an additional premium or not. If the insurance company, on the other hand, normally, covers the exempt risk against an additional premium, they may not, without special reasons, refuse an individual customer to obtain the risk of insurance protection.[95]

A further consequence of the obligation to contract is that the consumer has the right to insurance only to the premium cost and the conditions applied for the risk category that the person is considered to be included in.[96] Thus, it is up to the insurance company to specify different groups of applicants as long as everyone in the determined group is consistently treated equally. However, it is evidenced by the legislative history that if the companies' practice deviates from what is medical or insurance technically justified, it can be relevant to the court to reject a refusal of the insurance application even though the refusal is consistent with how the insurance company performed in previous insurance practices. In reality, however, it is difficult for the court to reject an insurance company's way of calculating the risk.[97]

3.6.3 The Special Reasons for Refusing Insurance

Regarding the insurance companies' possibility to refuse personal insurance, there must be a trade-off between the interests of the policyholder on the one hand, and the interests of the insurance collective and the insurance company on the other hand. Insurance companies can request higher premiums, make specific exceptions and even refuse personal insurance when there are special reasons.[98]

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92 The law does not explicitly state the term standard products, but instead refers to insurance that the insurance company otherwise normally provides to the public.
93 Prop. 2003/04:150 p. 499.
94 Prop. 2003/04:150 p. 497.
95 B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 388.
96 Prop. 2003/04:150 p. 498.
97 B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 389.
98 B Bengtsson, op.cit. pp. 270–271.

The special reasons that the insurance company can claim can be divided into three different categories: I) the risk of future insurance cases, II) the nature of the intended insurance, or III) other similar circumstances.[99] The formulation of special reasons is used to clarify that an exception is made from a general rule.[100] In the light of these categories, it is ultimately the court that decides whether an insurance company has the right to reject a personal insurance application.[101]

The risk of future insurance cases, also called the conflagration risk, can be so imminent that it justifies a refusal of the application for personal insurance.[102] This can be justified by the fact that the purpose of insurance is to protect against unexpected events. If an insurance case is certainly predictable, it cannot be required that insurance companies guarantee consumers a personal insurance that goes beyond the purpose of the insurance.[103]

The nature of the intended insurance refers to insurance situations that typically have less importance to the social aspect due to small risk contents. If the consumer is denied such insurance, the consumer should not have any difficulties having corresponding insurance with another insurance company. The exception is therefore reasonable, taking into account the purpose of the obligation to contract since consumer protection needs are not as high in these cases.[104]

Other similar circumstance is a legitimate basis for refusal of a consumer insurance application, as long as it reaches the requirement for special reasons. Such a difference in circumstances is when there is a so-called moral hazard, i.e. when the insurance company suspects that the consumer may dishonestly utilize the insurance against the company. What is mainly aimed at here is the risk of insurance fraud. An example of this is when an insurance company is concerned that the consumer is not providing correct information or that there is a suspicion that the consumer may induce or simulate an insurance case. A general suspicion that the consumer may be dishonest is not enough without specific evidence that supports the suspicion. It should in practice apply to cases where the consumer previously committed fraud in an insurance context, which gives reason to believe that such behavior may be repeated against the company. However, it should be carefully considered whether the incident was a one-time event or if the conditions have changed so that there is no reason to distrust the consumer.[105]

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[99] Prop 2003/04:150 p. 499.
[100] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 285.
[101] Prop. 2003/04:150 p. 499.
[102] E Lindell-Frantz, *Personförsäkring och kontraheringsplikt*, i Bengtsson, Bertil m.fl. (red.), Uppsatser om försäkringsavtalslagen, Jure, 2009, pp. 91–92.
[103] B Bengtsson, *Försäkringsrätt: några huvudlinjer*, 10 u., Stockholm, Norstedts Juridik AB, 2019, pp. 34–35.
[104] E Lindell-Frantz, *Personförsäkring och kontraheringsplikt*, i Bengtsson, Bertil m.fl. (red.), Uppsatser om försäkringsavtalslagen, Jure, 2009, pp. 92–93.
[105] Prop. 2003/04:150 p. 500.

3.7 Summary Discussion

The obligation to contract in insurance refers to an obligation for insurance companies to enter into an agreement with consumers. In the area of insurance law, the obligation to contract is consequently intended to ensure that as many people as possible can benefit from privately financed insurance coverage. However, the companies are not forced to deviate from the actuarial assessment of the risk. The introduction of an obligation to contract for personal insurances may seem to have constituted a relatively extensive interference with the freedom of contract. However, the effects of this reform should not be as far-reaching as one might be led to believe when reading the text of the law. The legislative work to FAL also shows that the legislator did not intend to force the companies to deviate from what is considered to be technically defensible. Thus, the protection that the obligation to contract offers to consumers is limited to the companies, that now have to motivate a rejection of an application. Accordingly, those who have been treated differently can have their case tried in court. Furthermore, the obligation to contract has not been used to a greater extent in court practice; it is uncertain whether it is effective at all.

Instead of rejecting an application, the company may choose to offer insurance coverage, but on entirely different terms or at a completely different premium than what is considered to be expected. The insurance company can also set different types of requirements for granting insurance. In addition, there is also reason to reflect on to what extent protection against discrimination can have a limiting effect on the company's requirements from the consumer, and how a refusal is motivated. The fact that the obligation to contract constitutes a departure from such a fundamental basic rule as the principle of freedom of contract means that certain caution must be exercised in the interpretation of its scope. In determining the meaning of the obligation in the field of insurance law, certain basic principles of insurance law can be taken into account. One such important principle is the equivalence principle, which means that the premium must correspond to the risk the company has to bear. The principle of equivalence is closely linked to the insurance companies' right to define the risk area they wish to insure, as well as the companies' right to set the price of their product themselves.

In order to have access to personal insurance coverage, it is not only required that Swedish law is applicable, but the insurance must also be in the company's normal range, and the insured has to be in the risk group that the company has defined as its target group. In addition, it is required that the consumer applying for insurance provides the insurance company with the information that the company deems necessary to make a correct risk assessment. Incomplete information from the consumer entitles the company to refuse insurance coverage. The insurance company is free to ask questions, but the information requested must be relevant and not discriminatory. The information is considered relevant if there is a relationship between the risk and the premium. Hence, the obligation to contract can be said to correspond with the duty to provide information.

An insurance company may refuse a consumer to take out insurance if there are special reasons, even if the insurance that is being requested is a standard product and otherwise normally provided to the public. Insurance contracts aim to protect the insured against unforeseen events. It is therefore reasonable that a consumer should not, in retrospect, be able to insure against a risk that has already occurred. If the company rejects an application with reference to suspicion that the applicant is dishonest, a general suspicion that the applicant may behave fraudulently towards the company is not sufficient. One factor that is decisive for the decision to refuse insurance is how the insurance company has acted in similar previous cases. In cases where there are circumstances for the obligation to contract, it is up to the insurance company to show that there are special reasons that justify treating this particular application differently. The reasons that the company can assert in that situation are divided into three categories; those related to the future risk of insurance cases, those regarding the nature of the insurance, and finally, other similar circumstances. Regardless of the basis on which the company wishes to invoke in support of its decision, it should be reminded that the insurance companies are bound by their own policy and practice. The risk of insurance cases can be summarized so that the consumer's current and previous state of health should be included in the basis for the assessment together with experiences of risk outcomes. If it is possible to put a price on a risk, it should be a reason to announce insurance. However, unreasonably high amounts or excessive exemptions are considered as refusals. If an insurance company refuses on a shallow basis, it cannot be considered technically justified to reject an application or provide it with an exemption or increase in premiums. The obligation to contract has an anti-discriminatory purpose that everyone should be able to afford insurance.

4 AI and the Obligation to Contract

4.1 The Impact of AI on the Insurance Industry and the Insurance Contracts

4.1.1 Introduction

During the period when the insurance business and the insured risks have undergone major changes, the insurance contract law has remained fairly unchanged. The essential elements of this legal area, such as the duty to provide information, have not changed a lot. In other words, insurance contract law has proven to be resistant to various types of societal changes. Instead, it is mainly the application of the rules that have been adapted to new conditions and new risks.[106]

A possible line of development is therefore that FAL may remain fairly unchanged despite the major changes that an AI society brings with it. However, the rules may need to be adjusted, and the application of the rules of insurance law may further need to be adapted. A historical example of such an adjustment is the duty to provide information in FAL. In order to be able to calculate risks, insurance companies must have good knowledge of the insured risk. At the beginning of modern insurance, the duty to provide information was strict towards the policyholder. If there was any deficiency in the information provided to the company at the conclusion of the agreement, the insurance agreement was invalid. However, the insurance companies' collaborations regarding statistics meant that the companies gained an increasingly secure basis for the insured risks. Regarding certain risks, the companies sometimes had greater knowledge compared to the policyholders themselves. At the same time, the duty to provide information was also nuanced and came to apply only for information that is relevant to the risk.[107]

Regardless of whether the obligation to contract proves to be resilient, or whether it will be in need of reforms, the insurance industry is facing new opportunities and challenges with the emergence of AI. The technology that could fundamentally change the way we conduct insurance business exists, but insurance business is still conducted in a fairly traditional way. However, it is becoming more common that insurance companies are experimenting with different types

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[106] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, pp. 161–173.
[107] B Bengtsson, *Försäkringsrätt: några huvudlinjer*, 10 u., Stockholm, Norstedts Juridik AB, 2019, pp. 54–55.

of AI solutions. In the InsurTech industry, start-up companies in particular are developing innovative AI solutions that can streamline premium calculation, communication, distribution, and automatic decision-making. For example, the insurance company Folksam has a "Future Lab" where they test a digital chatbot that will act as an assistant to settle certain damages. Another example is "smart insurance" by Moderna försäkringar, where the customers pay the premium based on how safe they drive. The insurance is linked to a mobile app that analyzes driving behavior. According to Moderna försäkringar, the product is the first of its kind in Sweden.[108] A third example is the new insurance company Hedvig, established in 2018, whose ambition is to keep down the cost of making a transaction, i.e., enter into insurance agreements by using AI to cut the steps in various processes. Generally, when AI is implemented reliably in the insurance business, it can improve customer experience, be time and cost-saving, and increase profitability due to reduced fraudulent claims and more accurate customer pricing. Consequently, the investigative burden can also be eased with the help of AI.[109]

4.1.2 How Can AI Be Used in the Insurance Industry?

The main area of use of AI in the insurance industry is that Big Data is collected and analyzed to help companies understand their customers better. Instead of relying on indirect indicators such as gender or age, as insurance companies traditionally would, they can assess risks based on more sophisticated data with the help of AI. A driving app could tell if policyholders suddenly break or if and how often they drive too fast. A fitness tracker could give information about the quality of sleep, physical activity, and overall lifestyle. Through AI solutions, insurance companies can better obtain crucial information for determining a policyholder's premiums.[110] More and more insurance companies seem to understand the importance of AI.[111] The ability to make risk assessments and price policies accurately is a focal point of value creation in the insurance industry. With the help of Big Data, insurance companies can obtain directly relevant information which enables companies to offer policies that closely reflect the risks posed by individuals, rather than the demographic category they belong to.

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[108] '*Moderna Försäkringar och Greater Than först ut med digitala betala-som-du-kör bilförsäkring för småföretagare*', by Moderna Försäkringar, <https://www.modernaforsakringar.se/om-moderna/pressmeddelande-och-nyheter/moderna-forsakringar-och-greater-than-forst-ut-med-digitala-betala-som-du-kor-bilforsakring-for-smaforetagare/> [accessed 14 May 2021].

[109] See NJA 2020 p. 115 where the underlying investigation was required. A further question is what requirements would be placed on an AI investigation. The issue is not dealt with further in the following presentation.

[110] '*How AI is changing the fight against insurance fraud*', by Thomas Staubach, HDI Global SE, <https://www.hdi.global/infocenter/insights/2018/ai-insurance-fraud/> [accessed 14 May 2021].

[111] Some of these insurance companies are mentioned in Chapter 4.1.1.

Today, IoT is becoming more and more useful in the insurance industry.[112] The convergence of AI and IoT redefines the way insurance companies function. AI-enabled IoT creates intelligent machines that are helping in capturing a tremendous amount of data from different sources.[113] These intelligent machines support decision-making and simulate smart behavior, with almost no human interference. For instance, IoT-powered wearables have a huge impact on personal health insurance. In the same way that an insured's driving experience can be tracked with telematic monitors in vehicles, devices like Apple and Fitbit Watch's Health App can track and possibly promote healthy behavior, leading to more specific premiums.[114] In this way, the insured can also influence their own insurance situation, if the insurance company presents clear data and options. The data that is collected individually opens up new possibilities for insurance plans to be tailored to the circumstances in each individual case. Furthermore, the process of obtaining insurance compensation is traditionally long and arduous for the insured. In this regard, AI can streamline the process by using mass data and analyze claims faster. In some cases, insurance companies have succeeded in fully automating the claim process.[115] The impact of AI can be seen as the risk classification being fine-tuned, and that the insurance itself, therefore, better corresponds to the individual risks.[116] A more accurate risk classification can lead to I) some consumers being able to take out insurance at a lower price, and II) some consumers refraining from taking out insurance since it costs too much.[117] Additionally, the insurance premiums are largely governed by competition in the insurance market. As insurance companies with AI solutions emerge, it brings competitive advantages over legacy insurers that are forced to adapt, adopt and evolve, or otherwise be priced out of the marketplace.[118]

4.1.3 Differences Between AI and Other Statistical Methods in Insurance

Insurance is about assessing the likelihood of various occurrences; therefore, it is reasonable that more direct data and new ways of analyzing the data result in a more accurate assessment of the risk.[119] The insurance industry is probably the

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112 F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, p. 45.
113 F Ccorea, op.cit. p. 11.
114 F Ccorea, op.cit. p. 9.
115 See Chapter 4.1.1.
116 *'Five Ways that Big Data Analytics are Transforming InsurTech'*, by Harry Menear, FinTech, <https://fintechmagazine.com/fraud-and-cybersecurity/five-ways-big-data-analytics-are-transforming-insurtech/> [accessed 14 May 2021].
117 *'The Impact of Big Data and Artificial Intelligence (AI) in the Insurance Sector*, by OECD, <https://www.oecd.org/finance/Impact-Big-Data-AI-in-the-Insurance-Sector.htm> [accessed 14 May 2021].
118 *'Five Ways that Big Data Analytics are Transforming InsurTech'*, by Harry Menear, FinTech, <https://fintechmagazine.com/fraud-and-cybersecurity/five-ways-big-data-analytics-are-transforming-insurtech/> [accessed 14 May 2021].
119 B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 21.

sector that has benefited from insights from data sets for the longest time. However, this may end up being a hindrance rather than an aid in terms of the evolution of the digital age. Traditionally, insurance companies have relied on mathematical sets of numbers to understand risk and write policies accordingly. AI enables a more advanced analysis that pushes far beyond the boundaries of traditional actuarial methods. This is made possible by automating and processing the large amount of data, which can be done both time and cotst-effectively. However, this does not mean that the older analytical strategies should be discarded. Traditional data sources such as exposure data or demographic data are increasingly combined, not replaced, with new sources, providing greater frequency and granularity of consumer behavior, characteristics, and lifestyles.

AI should be able to do more accurate assessments than humans since it can divide customers into smaller groups, even on an individual level, and then assess the risks. In contrast, humans have to divide customers into larger groups. On the other hand, if human assessors and AI use the same data and methods to do the assessment, then using AI is no different from humans, except that it is faster and cost-effective. However, the difference in time and cost may allow individualized AI-solved individualized insurance products to be included in the definition of the obligation to contract as standard products.[120]

Bias is another aspect that can distinguish AI from traditional methods. Theoretically, it is always possible to avoid mistruths of bias. In reality, however, humans have biases of different types, resulting in mistruths that could skew assessments and datasets. Humans often rely on filters to avoid information overload, which is also a source of bias since the filters prevent humans from actually seeing things. AI can also be biased or discriminatory, but this can be counteracted with the proper implementation method.[121] AI is, of course, not something that needs to be implemented in insurance. However, since AI brings new opportunities, it is undeniable to suggest that the insurance industry is moving towards the implementation of AI systems. AI brings a new way of calculating risks. With a combination of the distinctive methods, a larger amount of data can be analyzed in different ways and gathered into a more detailed picture of the consumers. A prerequisite for consumers to obtain more competitive premiums in this way is that they allow access to their data.

4.1.4 Will AI Affect the Obligation to Contract?

Insurance companies and policyholders generally do not negotiate the entire content of the insurance contract. Instead, this is normally drafted and provided by the insurance company.[122] The agreement's content is determined in advance by the insurer, in the form of standard terms, which are applied in relation to different customer groups based on their risks.[123] When the policyholder wants to enter

[120] R Mittu, D Sofge, S Russel, *Autonomy and Artificial Intelligence: A Threat or Savior?*, 1st ed. 2017, Cham, Springer International Publishing, 2017, p. 43.
[121] See more about this in Chapter 2.3.
[122] B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 143.
[123] B Bengtsson, op.cit. pp. 34–35.

into such an agreement, there is no negotiation regarding the terms, but rather a "take it or leave it" offer.[124] In such cases, there may be a risk of ending up in a situation where the consumer is forced to accept unreasonably onerous terms, to be able to satisfy the desire to be insured. However, there are protective regulations in favor of the policyholder.[125] The idea is that the insurance company should inform the policyholder about the scope of the insurance coverage and its meaning. In this way, the policyholder is able to compare different insurance products.[126]

If insurance companies implement AI to offer insurance products tailored to each individual, in an automated, efficient, and cost-effective way, the obligation to contract would be reshaped in this regard. With the time and cost aspect in mind, AI would then be able to find the consumer's best interest in a more accurate way. However, it is still crucial that the consumer must understand the meaning of the insurance contract, even if AI has helped the company to adapt the contract in each individual case. This is another reason why AI cannot be implemented in a way that is independent of human understanding.[127] AI solutions that lead to insurance terms and contracts must be followed and understood by the insurer and clearly explained to the policyholder.[128]

Proper AI implementation should make it more difficult for insurance companies to refuse insurance on discriminatory grounds.[129] This is based on the fact that AI can act objectively, without being limited by human factors. Furthermore, AI can prevent individuals from ending up in a situation where the insurance does not provide the expected protection once an injury occurs. In this way, AI can make the obligation to contract more effective. The obligation to contract is not only about consumers being able to enter into insurance contracts, but also that the content of the contract insures the consumer against the desired risks. Otherwise, the contract does not fulfill any function, and the obligation to contract then becomes toothless. Finally, AI means that more consumers will get faster responses and that insurance companies are generally perceived as more accessible. Consequently, more consumers will be interested in turning to insurance companies. Using AI technology to influence consumers' willingness to be insured is also a way in which the obligation to contract can be affected. The extent of AI affects the outcome of the obligation to contract. This is further addressed in Chapter 4.2, where an in-depth discussion takes place.

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124 B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 45.

125 In consumer relations, see especially AVLK (the Act on Contract Terms in Consumer Relations). This law shall be applied before § 36 AvtL (the Contracts Act). Unfair contract terms may not be adjusted but must be left without regard, see Bernitz in SvJT 2019, https://svjt.se/svjt/2019/679.

126 B Bengtsson, *Försäkringsavtalsrätt*, 4 u., Stockholm, Norstedts Juridik, 2019, p. 43.

127 See more about the Black Box Explanation Problem in Chapter 2.3.5.

128 Regarding the information that an insurance company is obliged to provide to the policyholder, see the second chapter in FAL.

129 F Corea, *An Introduction to Data: Everything You Need to Know About AI, Big Data and Data Science*, 1st ed., 2019, Cham, Springer International Publishing: Imprint: Springer, 2019, pp. 2-3.

4.1.5 Summary Discussion

The way AI is mainly used in the insurance industry is that Big data is collected and analyzed to help companies better understand their customers. Today, with the help of AI, insurance companies have been able to obtain directly relevant information, which enables companies to offer policies that closely reflect the risks posed by individuals, rather than the demographic category they belong to. The data that is collected individually opens up new possibilities for insurance plans to be tailored to the circumstances in each individual case. Thereby, the insured can also influence their own insurance situation.

The main difference between AI and other statistical methods in insurance is that AI enables new ways to analyze large amounts of data. Insurance is about assessing the likelihood of various occurrences; therefore, it is reasonable that more direct data and new ways of analyzing the data result in a more accurate assessment of the risk. AI is reaching the point where it can be expected to handle greater decision-making roles. Given that AI brings new opportunities, it is undeniable to suggest that the insurance industry is moving towards the implementation of AI systems. With AI, the customer experience of buying insurance can be faster and require less activity from the parties to the contract. Furthermore, AI algorithms can create risk profiles and store information about individual behavior. The impact of AI can be seen as the risk classification being fine-tuned, and that the insurance itself, therefore, better corresponds to the individual risks. A more accurate risk classification can lead to I) some consumers being able to take out insurance cheaper, and II) some consumers refraining from taking out insurance since it costs too much. This may in turn affect the obligation to contract as the price of premiums is crucial for the signing of the insurance. Proper AI implementation should also make it more difficult for insurance companies to refuse insurance on discriminatory grounds. A possible line of development is that FAL may remain relatively unchanged despite the major changes that an AI society brings with it. However, the rules on the obligation to contract may need to be adjusted, or the application of the rules may need to be adapted.

4.2 Problems and Possible Solutions

4.2.1 Introduction

The point of insurance is to distribute risks. The way in which risk distribution is done can be made more efficient with the help of AI. When implementing AI, different problems can also arise in the field of insurance law. Initially, many AI-processing tasks require human interaction, which is prone to errors. Insurance companies that use AI solutions must therefore still make sure that the AI implementation in question is reliable and in accordance with the applicable law. Thus, constant process updating and staff training is required for insurance companies that use AI. This can be difficult if the AI solutions are not transparent

enough, resulting in the Black Box Explanation Problem. Another potential problem is that policyholders can submit data through various formats to make claims. AI can, as previously explained, adapt and learn to take in different forms of information. Nevertheless, it is important to emphasize that problems can arise here, and that AI solutions need to be consistent and equal, independent of the varying data formats.

As previously mentioned, insurance companies can deny consumers insurance if there are special reasons that do not contradict the company's own practice. The fact that the insurance company should not go against its own practice prevents subjective decisions from being made in individual cases, which can further counteract discrimination. Since AI solutions are more efficient and affordable, more precise and in-depth assessments can be made in each individual case. Thus, less room is left for human subjectivity in decision-making with the help of AI.

In practice, the obligation to contract mainly means that the insurance companies must investigate what they are basing their refusals on. Not all prospective policyholders may be in the risk area in which they are classified. This could be more easily detected with more accurate individual assessments using AI solutions. Without the help of AI, it becomes a question of what importance we actually attach to the obligation. Namely, it would be unreasonable to oblige insurance companies to pay high costs in order to investigate the possibility of insurance. There must be a balance between the possibility of investigation and the consumer's interest.

Most risks that insurance companies have to take into account in risk assessments can be calculated with the help of AI. Greater accuracy will lead to a more representative premium cost. Since the insurance companies are profit-driven and the AI solutions are cost-effective, the insurance products can generally be cheaper with the help of AI. As a result, consumers will have a better opportunity to take out insurance at a fair price. A prerequisite for the obligation to contract to apply for AI-solved insurance contracts is that these are included in the definition of 3:1 and 11:1 FAL. However, a problem that can arise if all insurances become AI-based in this way, is that consumers with higher risks can no longer get away with a cheaper insurance standard product. This means that these consumers, for whom the obligation is primarily for, can end up in an inferior position. One way of trying to solve this problem could be to offer other alternatives, similar to today's generally held insurances, in addition to the AI-solved insurances. However, this poses an additional problem: Customers with low risk would then choose the insurance companies with AI solutions since it is cheaper, while those with high risks would prefer the traditional insurance companies, which offer cheap insurance in relation to the risk. Such an imbalance would mean that insurance companies with AI solutions gain a massive advantage in the market and that other insurance companies would be eliminated from the market.

If insurance is tailored to each individual, it may also be difficult for humans to keep up with or answer any questions when the consumer calls in to ask for clarification or make a claim. Consequently, this could slow down the turnover

time of each claim, or for mistakes to be made since a human can assume each policy has the same fundamentals, which is not the case. If AI were to customize insurance contracts by default, it would mean that several thousand, sometimes millions, of insurance contracts have different terms and become challenging to overview. This is an important point to highlight since the negative consequences of AI should be counteracted before they occur. On the other hand, insurance companies already handle enormous amounts of contract variants, and conditions are adjusted every year. AI can also be used to sort and review the content of agreements and help consumers with various matters.

The question of whether AI will affect the obligation to contract can further be divided into several parts. The decisive factors are whether AI affects I) insurance products, II) insurance coverage and the definition of the standard product, III) the obligation to motivate special reasons, and IV) the risk assessment. In the following, these parts will be addressed in more depth to better understand the impact of AI on the obligation to contract.

4.2.2 Insurance Products and Product Freedom

An individualized insurance contract does not necessarily cover all the risks of a specific consumer. Instead, the contract may be individually tailored for specific risks. If the obligation to contract would apply for individualized AI solved insurance products, a negative aspect would be that the companies' freedom of contract would be further restricted. Such an outcome could result in more limitations. If consumers are given greater opportunities to take out the desired insurance, it can lead to companies reducing their product range so that they do not have to offer certain insurances to the public. To be consistent with the text of the law, insurance companies could adapt their products, which would counteract their product development. This, in turn, leads to the disadvantage of policyholders as they do not have access to a wide range of insurance products. Therefore, an absolute right to insurance is not a positive solution as it would have negative consequences for both parties. On the other hand, it has not been considered impossible to impose, for example, other legal entities in society, such as employers and property owners, an increased responsibility to meet the interests of various vulnerable groups, such as the disabled. There is, therefore, no reason to assume that it would be much more difficult for insurance companies to spread the costs of a more generous attitude towards the weaker groups. If the agreements offered by the insurance companies are limited and only cover certain risks, albeit individually tailored, the obligation to contract is counteracted. However, it is also conceivable that market forces can counteract an overly strict defined product range.

After all, an insurance company lives on selling insurance. Suppose companies, for example, chooses only to insure individuals in a certain age group living in a specific area. In that case, there is a risk of having such a small customer base that the insurance premium may be set so high that the product becomes uninteresting. The same applies if insurance companies instead choose to define their collective by generally excluding certain risk groups, such as diabetics, people

who have been declared healthy from cancer, allergy sufferers, etc. It should be emphasized that the good risks need to be in solidarity with the worse ones so that the burdens are shared between them. One solution is to broaden the spectrum of risk and the cost of premiums so that the total amount of premiums corresponds to the collective risk, instead of the individual premium corresponding to the individual risk. In this way, AI can be implemented without counteracting the obligation to contract or limiting the companies' range of insurance products.

4.2.3 Insurance Coverage and Standard Products

Insurance technology and its impact on insurance are unexplored and difficult to access. Regarding the obligation to contract, one criticism is that it is difficult to define. We do not know what the obligation entails, and there are reasons to question whether it exists in practice since companies can circumvent it. If the obligation to contract is not applicable, to begin with, it cannot be affected by AI. On the other hand, if the obligation to contract is seen as a goal provision, the rules must be designed and interpreted so that the purpose is fulfilled when implementing AI.

When it comes to the obligation to contract, it is important to understand the standard product requirement, as this is a prerequisite for the provision to apply. The idea with a standard product is that it is generally held, based on lower transaction costs, and that we have a finished product that the company does not need to work with. If a consequence of AI is that there are no standard products, it is crucial to understand how the standard product requirement in 3:1 and 11:1 FAL is to be interpreted. AI could be implemented and become so widely accepted that the insurance products that were previously specialized, now instead become the new normal. In that case, the obligation would also apply to individualized AI-solved products, which today belong to a category that is not covered by the obligation to contract. As a result, the provision would be interpreted extensively, and the scope of the obligation to contract would be wider. Consequently, it becomes important that insurance companies are cautious about what to automate, so that they do not have to limit their offerings since they are forced to let customers take out insurance.

A consumer who applies for an insurance contract cannot be considered to have the right to force companies to change their existing insurance products to fit the applicant's risk picture. On the other hand, if the company already provides the insurance product that the applicant is interested in, and the risk to be insured corresponds to what the agreement is intended to cover, the product can be considered to be generally held. However, this assumes that the insurance company can offer the product efficiently and inexpensively.

AI solutions can enable insurance companies to offer their products efficiently and inexpensively. A consequence of extending the standard product requirement to include individualized AI-based products is that everything is covered instead. However, it should be considered sufficient in such a situation that the

insurance company does not provide AI solutions for certain insurance products for those products to be exempted.

4.2.4 The Obligation to Motivate Refusal Decisions

While AI may not bring about new issues regarding the obligation to contract, since the obligation to contract may be toothless to insurance companies even without them using AI, AI may lead to other legal issues in respect of insurance law, such as the issue of motivating refusals.[130] It is relevant in this context to investigate whether AI affects the requirement to motivate special reasons in the event of refusal, as it is an exception to the obligation to contract. It is only when the obligation to contract becomes relevant that the question of special reasons becomes important. When insurance companies consider that there are special reasons, this must be motivated in the refusal decision. The insurance company's motivation is essential for consumers who have been denied insurance coverage to be able to bring a claim against the insurance company in court.

It is already difficult today to find out what insurance decisions are based on and therefore understand how premium costs are assessed. Hence, the obligation to state reasons in the event of refusal is already, to some extent, deficient. If AI comes into the picture, an additional problem arises: The AI Black Box Explanation Problem. This problem includes situations where a company denies insurance due to an algorithm, even though no one can give reasons for it. Consequently, both the insurance company's and the policyholder's insight into the decision may be lacking if the assessment is AI-based. For insurance companies to be held liable, they must have insight into how the decision is made, even if it is made with the help of AI, so that the decision can be evaluated. There are ways to control AI so that the decision is easier to understand and follow, and therefore more transparent. One solution could be to incorporate the costs into a broader risk model that controls how to engage with explainable AI models and a certain level of transparency. On the other hand, there is a great interest in competitors being allowed to keep their AI solutions to themselves as insurance companies are profitable, and the premium cost is largely governed by competition. Thus, there is already a lack of motivation, to some extent, for competitive reasons, independent of the AI. Transparency is expensive, and it poses downsides that need to be understood. However, this does not mean that transparency is not worth achieving. Companies that benefit from the black box explanation problem do not want to be more transparent than required by law, as competitors will thereby have access to their solutions. Both the profit interest and the interest of transparency must therefore be considered. As a result, the transparency should be adapted with the help of AI, to fulfill the motivation required within the meaning of the law. Such an outcome would be reasonable. If we do not demand transparency from insurance companies when they use humans to make decisions, it does not make sense to demand more transparency when they use AI.

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[130] See above, Chapter 3.6.3.

If the level of transparency that is usually allowed would not be allowed for AI solutions, it would mean that insurance companies that are using AI can never fulfill their obligation to motivate refusal within the meaning of FAL. Consequently, the insurance companies would always have an obligation to contract since they would not be able to motivate a refusal. One solution is to accept the same level of transparency for both AI-based decisions and human-based decisions. This does not mean that decision-making competence is left to AI, but rather that humans make decision-making based on what AI finds reasonable. Such a solution would mean that the obligation to contract is not affected by AI in this regard. Overall, it is not only AI that can affect the obligation to contract, but also our view of AI and our approach to it. Although insurance companies have an obligation to prove that there are special reasons for refusal, they have access to both statistical material and special expertise in the field. It is, therefore, difficult for the court to question the accuracy of the evidence presented. In addition, companies can hardly be required to provide such evidence due to competition.

4.2.5 Risk Assessment

As previously mentioned, it is difficult to know the current pricing practice of insurance in Sweden due to competition reasons. Relevant factors that insurance companies consider when determining the level of premium could for example be age, smoking history, etc. If a company uses AI to determine premium costs, it could mean that the list of relevant factors will become longer. For instance, previously there may have been 15 factors included, but with the help of AI, there are now 30 factors, including new factors such as how many miles the person walks each week. As previously mentioned, Sweden also has laws prohibiting insurance companies to consider certain sensitive factors, on a discriminatory basis, such as sexual orientation. There might be an interesting issue here. Previously, insurance companies could not charge a different premium based on sexual orientation. Now, with AI, they may, knowingly or unknowingly, do so. For example, sexual orientation is correlated with the average walking distance. Therefore, if an insurance company charges different premiums based on different walking distances, effectively they are charging different premiums based on sexual orientation. However, the insurance company may argue that, walking distance is also correlated to the average length of life. Therefore, the insurance company is justified in charging a lower premium when the walking distance is long, even though the walking distance happens to correlate with sexual orientation.

The fact that AI can help with all influencing factors for risk assessment has its advantages and disadvantages. With the help of a more detailed and better customer profiling, our ability to predict and calculate both the size and probability of potential losses can be detected earlier. The improvements with AI will make more premium under budgets. As a result, AI can lower the threshold of what we today consider an insurable risk. Consequently, AI will make more risks insurable. This affects the obligation to contract as the insurance possibility

increases. This point is related to the fact that AI can also help increase customer engagement and retention problems. Besides that, AI can also make people more aware of habits and risks, leading them to adopt better behaviors.

4.2.6 Summary Discussion

The primary purpose of the obligation to contract is to regulate the insurance cover that each insurance company can provide and not extend beyond that. Thus, it is not easy to achieve comprehensive protection, but if the obligation to contract also applies to individualized AI-solved products, it could result in broader protection. Consequently, the application of the obligation to contract gets a wider interpretation to accommodate the individualized AI-solved products.

If insurance companies implement AI, the subjective loopholes can be counteracted, and instead, insurance will be denied on more objective grounds. Thus, the obligation to contract becomes more effective. However, as long as there is an exception for special reasons, the obligation to contract can rather be seen as a target provision. AI-solved insurance products can lead to higher premium costs for people with disadvantages. The fact that higher risks result in higher premium costs is nothing new and can be considered reasonable based on the principle of equivalence. An individual adaptation through AI may thereby risk counteracting the purpose of the obligation to contract. Insurance companies that use AI solutions must therefore do risk assessments that are non-discriminatory.

The insurance companies need to ensure that risk assessment takes place on an individual basis and not on a standard basis. Rejections, premium increases, and special conditions are permitted only when the insurance company can motivate this in the individual case. An insurance scheme that contains individualized AI-solved insurances may be difficult to overview if, for example, an insurance company has thousands of personal insurances. However, AI can also be used for sorting and reviewing the content of agreements. Today, it is necessary for the survival of insurance companies to be as digital as possible and to move away from paper handling as much as possible. The insurance companies are therefore gradually switching to digitalization to facilitate their operations. Therefore, it is highly relevant to investigate whether the obligation to contract is affected by an implementation of AI. The investigation is divided into four questions.

The first question that is touched on is whether AI can affect the insurance companies' product range. If consumers are given greater opportunities to take out the desired insurance, it can lead to companies reducing their product range so that they do not have to offer certain insurances to the public. However, it is conceivable that market forces can counteract an overly strict defined product range. With competition and risk allocation in mind, AI can be implemented without counteracting the obligation to contract or limiting the companies' range of insurance products. Thus, AI can be implemented without adversely affecting the insurance companies' product range.

The second question that is touched on is whether AI will affect the design of insurance coverage and the definition of the standard product. The standard product requirement can either be understood so that AI-solved insurance products are included or fall outside the obligation to contract. What defines a standard product is mainly the availability and efficiency, which can also be achieved for customized products with the help of AI. Imagine that AI is implemented and becomes so accepted that the insurance products that were previously special, now instead become the new standard. In that case, the obligation would also apply to individualized insurance contracts, which today belong to a category that is not covered by the obligation to contract. Thus, the obligation to contract would also apply to individualized products that are AI-solved.

The third question that is touched on is whether AI affects the obligation to motivate special reasons. Only when the obligation to contract is actualized, it is relevant to answer this question. Since AI solutions mean that there are no special costs for the insurance company, the problem may instead be to motivate the decisions. It has been argued that insurance companies do not always provide clear motivations for their decisions when consumers are denied insurance. With the help of AI, the transparency should be adapted to fulfill the motivation required within the meaning of FAL. However, for AI to be implemented, we have to accept the same level of transparency for both AI-based decisions as human-based decisions. The idea is that AI, together with human competence, should make decisions and provide reasons for the decisions. The fact that the meaning of "motivating refusals" may change by the implementation of AI, does not mean that the obligation to contract is adversely affected. Overall, it is not only AI that can affect the obligation to contract but also our view of AI and our approach to it.

The fourth question that is touched on is whether AI affects the risk assessment. Today, it is already difficult to know the current pricing practice of insurance in Sweden. If a company uses AI to determine premium costs, the list of relevant factors could become longer. The fact that AI can help with all influencing factors for risk assessment has its advantages and disadvantages. With the help of a more detailed and better customer profiling, our ability to predict and calculate both the size and probability of potential losses can be detected earlier. AI can also "lower" the threshold of what we today consider to be an insurable risk. Conse-quently, AI will make more risks insurable. Indirectly, this outcome would affect the obligation to contract as the insurance possibility increases.

In the light of the above, the obligation to contract should likewise be applied in cases where insurances are individualized with the help of AI. However, certain limits should be set, as this is a balance between financial interests that must correspond to the risk. Insurance companies must be able to decide which product they want to provide to the public and which insurance terms and premiums it should have. The company must have a balance in the finances as it should feel safe for the policyholders to take out insurance and that the company has a strong economy when insurance cases occur. An insured person's claim shall not affect the other insured. Each insurance must bear its costs, considering the risks. The implementation of AI does not have to overturn the obligation to contract in

insurance. If a correct and factual risk assessment is made, it cannot be considered a violation of the law, regardless of whether it is done with the help of AI or not. In any case, the insurance company can still refrain from issuing insurance when the risk is too significant or foreseeable. The important thing is that one customer is not treated worse than another in the same situation.

5 Final Comments

5.1 Summary Discussion

Within the contract law, there is a long-established principle of freedom of contract. The freedom of contract is a vital rule, meaning a freedom for contractors to choose if and with whom they wish to establish a contract, but also a freedom to refuse to enter a contract. This suggests that situations may arise where consumers do not have the opportunity to meet their basic needs, due to the insurance company's unwillingness to enter into an agreement. For this reason, the obligation to contract has been introduced in insurance law. It is of interest to examine whether a reasonable balance between the parties' interests is maintained through the legislation, that now applies in Sweden. The utmost function of agreements is to create conditions for the exchange of services between the parties. Thus, the consumers' access to agreements cannot be exaggerated. The consumer's freedom to enter into an agreement relates to the insurance company's freedom to waive their right to the agreement, in accordance with the risks. It is not conceivable to have a society where, on one hand, there is absolute freedom to conclude insurance contracts and, on the other hand, everyone is free to refuse to enter into such a contract. The freedom of contract must therefore be balanced against the consumer's right to an insurance contract under certain conditions. Such a balance could be achieved through the obligation to contract.

The obligation to contract in 3:1 and 11:1 FAL is not absolute, as insurance companies can refuse insurance when there are special reasons. As emphasized in the legislative history to FAL, insurance companies must make an individual risk assessment. It must not be a standardized assessment that is made at the expense of the individual's ability to take out insurance. However, the insurance companies themselves can choose which risks they want to insure, and therefore which groups that can be guaranteed insurance. As long as people within the intended target group are not discriminated against, it is not against the law to deny insurance.

It should be pointed out that insurance companies are for-profit companies that probably want as many customers as possible to increase their profit margin, in order to maintain a healthy economy. Also, for the insurance premium to be within reason for the risks that exist, the insurance companies must conduct a risk assessment. The insurance companies try to make a fair premium setting and thereby protect themselves and other policyholders against an adverse selection and unsustainable finances in the company. Consequently, the risk assessment is an essential step in creating fairness and solidity. The insurance companies' main

purpose should be to provide as many people as possible with insurance at a fair premium.

An information balance is necessary for the companies to be able to do a risk assessment. Therefore, the obligation to contract and the duty to provide information are related. AI can help with information management and thereby benefit insurance companies from a financial and time-efficient perspective. At the same time, AI can make it more just for consumers who want to take out insurance, as the insurance basis with the help of AI can become more objective. If individual assessments are made of the individual's risks, and an objective motivation is given for each decision with the help of AI, the purpose of the obligation can be further strengthened.

Machine Learning and Deep Learning are used to achieve AI. In turn, AI aims to develop the machines' ability to independently understand and handle large amounts of data. With the help of AI, companies can make decisions based on large amounts of data instead of subjective perceptions and assessments. Development in this direction could potentially mean that the insurance companies of the future offer individualized insurance that is automated with the aid of AI. This development would lead to a decision on whether the law should prohibit individualized pricing of insurance products. Individualized insurance contracts are the same as individually priced insurance contracts since insurance companies cannot ask customers to do anything other than paying a higher premium.

The insurance companies' obligation to issue insurance fulfills an important social function. The regulations are designed as a compromise between this social interest and the societal interest that there are good conditions for conducting insurance business. If this balance is not maintained, there is a risk that insurance coverage in society will decrease. Consumers who apply for insurance contracts cannot be considered to have the right to force the insurance companies to change their existing insurance products so that they fit the applicant's risk profile. On the other hand, if this can be achieved effectively through AI solutions without any extra costs, it can be compared to an insurance that is generally held. An insurance that is generally held can also be seen as a standard product, for which the obligation applies. A negative aspect that must be taken into account with regard to the obligation to contract is that the insurance companies' product range can be limited by an absolute obligation. A more extensive obligation could possibly lead to the insurance companies eliminating certain insurance alternatives from their product range. Such an outcome could even be counterproductive from a policyholder's perspective. Contrarily, competition can prevent the insurance companies' supply from being limited. Despite this, it is important that insurance companies wisely choose what to automate with the help of AI, in case these products would be covered by the obligation to contract.

An essential part of the obligation to contract is that consumers can sign insurance contracts, and that the insurance contracts cover the risks that the consumer wishes to insure. In addition, AI solutions may result in an insurance company's lack of reason to provide a just explanation for denying a policyholder coverage. However, if AI, together with human competence, comes up with a solution and provides motivation for this reason, a portion of the Black Box

problem can be avoided. The turnover for rejections will thereby not be higher or less than it would have been without AI. The transparency required of insurance companies can be achieved with the help of AI. It is required that we do not place higher demands on AI solutions than we do on human solutions.

The function of the current obligation will ultimately erode if individualized insurance is made possible through efficient, and inexpensive AI solutions. There are good reasons to interpret AI-solved individualized insurance as generally held. What is considered general is that the insurance is included in the insurance company's normal range. AI solutions that are individualized could, by definition, also be included in the insurance company's normal range. Suppose the AI solution is adapted in a way that it only offers products that are included in the range. In that case, it benefits both the company and the consumer as more consumers can insure themselves at the right price.

Insurance companies that implement AI-solved insurance contracts do not need to allow insurance for risks that are outside the circle. If the obligation to contract were to apply to AI-solved individualized insurance contracts, the exceptions could still be actualized. Accurate implementation of AI, meaning a precise risk assessment and premium setting, results in insurance becoming available to more people.

A more accurate risk classification can lead to I) some consumers being able to take out insurance at a lower price, and II) some consumers refraining from taking out insurance since it costs too much. A more precise risk assessment and risk distribution may lead to unaffordable insurance for consumers with higher risks. Consequently, AI products risk counteracting the purpose of the obligation to contract. 3:1 and 11:1 FAL may need to be reinterpreted or changed due to the development of AI in the insurance area.

How far the obligation to contract should extend in the case of individualized insurance is highly a topical issue and will remain so for some time to come. As long as there are exceptions for special reasons and the companies can set the premium in correlation to the risk, which in some cases can be likened to a refusal, the obligation can be seen as a target provision.

5.2 Conclusions

The question to be answered is whether the obligation to contract in FAL is affected by individually adapted insurance contracts through AI solutions and if the impact of AI gives reason to change the established law or its application.

The obligation to contract obliges insurance companies to enter into an insurance contract with a willing consumer. There are certain exceptions to this, including that there are special reasons, for example, with regard to the consumer's future risk. The obligation to contract only applies to standard products. With the help of AI, individual adaption will be simplified, efficient and inexpensive. This, in turn, can lead to a reshaping of the interpretation or meaning of the obligation to contract in 3:1 and 11:1 FAL. Either I) the AI-based individual insurances are included in the definition in 3:1 and 11:1 FAL, and therefore

insurance companies are obliged to enter into individualized insurance contracts when these are AI-based. This outcome would require a reinterpretation or change of the current obligation to contract, as the current regulation only applies to standard products. Otherwise, II) the AI-based individualized insurances are not included in the definition of the obligation to contract. In the latter case, the companies can circumvent the obligation to contract by offering AI-based insurance. This outcome would also require a reinterpretation or change of 3:1 and 11:1 FAL to counteract the circumvention of the obligation to contract.

Both outcomes will likely affect the willingness of customers to take out insurance, depending on the risk classification and premium price. Furthermore, the insurance companies can choose not to offer anything other than AI-based individualized products to specific consumer groups. Consequently, this would threaten the purpose of social security that the obligation to contract aims to secure.

In light of the above mentioned, it can be concluded that the obligation to contract will be affected by AI. The impact of AI gives reason to change the established law, or at least clarify its application. However, the question remains as to how the law and its application will change. It is necessary to get further guidance on the issue from the court or the legislator.

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