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Impacts of Artificial Intelligence on the Insurance Sector: Emergence, Applications, Challenges and Opportunities

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ABSTRACT
Like many sectors around the world (healthcare, manufacturing, transportation, customer service, banking, etc.), the insurance sector has begun to embrace AI technologies to a large extent. With this adoption process, insurance companies can immediately respond to customer needs in light of digital data and focus more on value-added areas. AI technologies also help to communicate effectively with customers, reduce costs, develop new products and services, and improve the competitive environment, preventing insurance companies from being indifferent to these technological advances. On the other hand, these technologies identify possible risks in advance, inform the policyholder and support them to take precautionary measures. While this situation is supportive for the insured sector, it may pose threats to insurance companies as it lowers premiums. These threats force insurance companies to make changes in their business models to change the unfavorable situation in their favor. In this case, it is very important to address these innovations in order not to fall behind these developments. From this point of view, this article examines the innovations of artificial intelligence and its effects on the insurance sector.

Keyword: artificial intelligence, artificial intelligence usage cases, insurance sector.

I. INTRODUCTION

The insurance industry, as one of the key sectors of the economy, plays a fundamental role in strengthening the economic foundations of a society, and this industry has been under pressure in recent years due to economic pressures, changes in laws and regulations, changing the expectations of insurers and the emergence of the new generation, namely the millennial and generation Z, the widespread influence of technology, the change in people's lifestyles and the activities of production and service units, to adapt to new conditions and change work processes in an innovative way. During the last few decades, technological innovation has been the key driver of the transformation of various industries in the world, and the insurance industry is no exception. Customers are at the center of these changes and developments, and their expectations of the insurance industry are changing due to the improving experience in other industries. On the other hand, considering the key role of data and information in the insurance industry, the Internet and emerging technologies in insurance can leave a significant impact on its value chain and help improve customer experience (1).

The insurance sector plays an important role in helping businesses and individuals manage

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risks due to the amount of premiums they collect and the investments made with these premiums. This role is very important for the sustainability of the economy. The transformations brought about by technological developments in business processes and changes in consumer preferences may have both positive and negative consequences for the insurance sector. As advances in artificial intelligence, blockchain, cloud technology, and the Internet of Things require high investment in the short term, it appears that they have not yet created a cost advantage for companies. However, in the medium term, these technologies are expected to reduce costs and increase the sector's efficiency. In addition to cost and efficiency advantages, these innovations also help the emergence of new products, services and business models. Traditional insurers have opportunities to modernize and reinvent themselves with these technological developments. Financial services, especially banking, is one of the leading sectors in the use of AI. In the prominence of this sector, tough competition, rapid implementation of artificial intelligence programs, data management in general and having strong foundations in technology adoption have played an important role. Although the insurance sector has been lagging behind technology and digitization as it is highly regulated compared to the banking sector, it has recently picked up momentum. Recent developments in the insurance sector show that technological changes are very fast and companies that cannot adapt to this speed will lose their chance to compete successfully. Their business model is shaped by the opportunities that technology presents to them. But until today, studies on the effects of artificial intelligence on the insurance sector seem to be underdeveloped in terms of research and practice. At this stage, the motivation of this article is to determine the state of artificial intelligence applications in the insurance sector and to examine the effects of these innovations on this sector (2).

Artificial Intelligence

Today, due to the expansion of knowledge areas and the increasing complexity of decision-making, the use of information systems, especially artificial intelligence systems, in supporting decision-making has become important. Artificial intelligence refers to systems that can have behaviors and reactions similar to human intelligent behaviors, including simulating human thinking processes and reasoning methods, understanding complex situations, responding successfully to them, learning and the ability to acquire knowledge and reason to solve problems (3).

Artificial intelligence is the science and engineering of creating smart machines by using computers and taking models from the understanding of human or animal intelligence and finally achieving the mechanism of artificial intelligence at the level of human intelligence. Comparing artificial intelligence with human intelligence, it can be said that humans are able to observe and analyze issues in order to judge and make decisions, while artificial intelligence is based on rules and procedures already embedded on the computer. As a result, despite the existence of very efficient and powerful computers in the current era, we have not yet been able to implement an intelligence close to human intelligence in creating artificial intelligences (4).

Creation and innovation of necessary techniques and techniques for managing complexity should be introduced as the fundamental core of past, present and future scientific and research efforts in all fields of computer science, and especially in artificial intelligence. The methods and techniques of artificial intelligence, in fact, were created to solve those problems that could not be easily solved by programming or mathematical methods. Artificial intelligence is the study of how computers can be made to do things that humans currently do correctly or better. Artificial intelligence is the intelligence that a machine shows or the knowledge in a computer that it is trying to create. An intelligent agent is a system that increases its chances of success by knowing its surroundings. In general, artificial intelligence can be examined and studied from different angles. A distinction should be made between artificial intelligence as a goal, artificial intelligence as a university field of study, or artificial intelligence as a set of techniques and solutions that have been developed and developed by various scientific centers and various industries.

Artificial intelligence has branches such as artificial neural networks, expert systems and genetic algorithms, which in today's management science, each of these branches has a specific application in making decisions and providing organizational knowledge. Artificial intelligence and artificial neural networks have found their place in the management science, especially in the financial management branch. Among their applications are customer validation, financial forecasts, evaluation and approval of credit allocation to financial employees. Expert systems are a widely used field in artificial intelligence and

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knowledge engineering, which increases the importance of their role due to the increasing need of societies to adopt quick solutions and decisions in cases where complex and multiple human knowledge is needed. Expert systems solve problems that usually require the expertise of human experts and specialists. In order to be able to solve problems at such a level, it is necessary for such systems to have as much access as possible to the existing knowledge in that specific field. Another branch of artificial intelligence is the genetic algorithm, by which the machine can simulate the mechanism of natural selection by searching the problem space to find the superior and not necessarily optimal solution. Finding solutions and management decisions in different situations are applications of this branch of artificial intelligence in management. In general, artificial intelligence is the intelligence that a machine shows in different situations. In other words, artificial intelligence refers to systems that can have reactions similar to human intelligent behaviors, including understanding complex situations, simulating human thought processes and reasoning methods and successfully responding to them, learning and having the ability to acquire knowledge and reason to solve problems. Most of the writings and articles related to artificial intelligence have defined it as "the knowledge of knowing and designing intelligent agents". In general, the existential nature of intelligence is the concept of gathering information, induction and analysis of experiences in order to reach knowledge or provide a decision. In fact, intelligence is considered as the concept of applying experience in order to solve received problems. Artificial intelligence is the science and engineering of creating machines with intelligence by using computers and taking models from the understanding of human or animal intelligence and finally achieving the mechanism of artificial intelligence at the level of human intelligence. Comparing artificial intelligence with human intelligence, it can be said that humans are able to observe and analyze issues in order to judge and make decisions, while artificial intelligence is based on rules and procedures already embedded on the computer. As a result, despite the existence of very efficient and powerful computers in the current era, we have not yet been able to implement an intelligence close to human intelligence in creating artificial intelligence. Artificial intelligence is one of the sciences that has made tremendous progress in science in the past decades. It is clear that this progress was not limited to a specific science, but included all sciences, even human sciences. One of the most obvious cases in the humanities is advanced search engines that have greatly accelerated research. Of course, the speed of this progress has increased a lot in the last few years, and there are countless examples. Artificial intelligence, which has always been the ultimate goal of computer science, now serves the development of computer science. Advanced programming languages, which enable the development of intelligent tools, advanced databases, search engines and many software and machines benefit from the results of artificial intelligence research. A system that thinks wisely. It is a wise system that can do things right. In the production of these systems, human thinking is not considered. These systems rely on laws and logic that form the basis of their thinking and enable them to make inferences and make decisions. Although they do not think like humans, they make wise decisions and do not make mistakes. These machines do not necessarily have an understanding of emotions. Currently, these systems are used in the production of agents in computer software. The agent only observes and then acts. Today, traces of artificial intelligence can be found in various sciences, including medicine, aerospace sciences, discoveries, military weapons, weather forecasting, mapping and identification of complications, voice recognition, speech recognition; handwriting; games and computer software. Therefore, artificial intelligence experts, considering the various applications of this science, have pursued it in various branches, including: Neural networks, these networks, which are designed with inspiration from the neural network model of the human mind and have many and widespread applications today, are used in various fields such as control systems, robotics, text recognition, image processing, and... Natural language processing, in this branch, systems are programmed to understand human language. Natural language processing, in this branch, systems are programmed to understand human language. Robotics, this branch of artificial intelligence tries to program robots to perform intelligent actions, such as the ability to see, hear and show reactions to environmental stimuli (5).

History of artificial intelligence

Artificial intelligence studies are often done by analyzing human thinking methods, with the aim of creating artificial recipes similar to these recipes. More technically, artificial intelligence is a branch of computer programming. It is an attempt to add intelligence, learning ability and hence

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reasoning ability to the developed program. With the idea that Alan Turing put forward at the end of World War II, it was thought that a program could be learned. Thanks to this ability to learn, computers were thought to have artificial intelligence over time. In 1955, John McCarthy first used the term "artificial intelligence". According to him, artificial intelligence is "the science and engineering of making intelligent machines".

The study of artificial intelligence gained momentum in some leading universities in the 1960s. The US Department of Defense supported these efforts. In the 1970s, there was definite progress, but artificial intelligence did not come close to the expected human intelligence. After that, the Department of Defense reduced its budget. In this sense, the 1980s are called the "Winter of Artificial Intelligence". Since the beginning of the 2000s, artificial intelligence studies have gained momentum again. The expansion of the Internet, the exponential increase in the volume of data, the transfer of computing power to the cloud space, and fast access and scalability have increased computing power. Today, artificial intelligence has attracted the attention of leading technology manufacturers. Companies such as Google, Facebook, Apple, Amazon, Microsoft, Baidu, IBM and similar companies have joined forces, invested, acquired other companies and experts, and have begun to market value-added products with certain steps. On the one hand, personal assistants with voice recognition capabilities appeared in our smartphones (2).

The rise of artificial intelligence in the insurance sector

The packages and services offered by insurance companies were more complex in the past than they are today. With technological advancements in the insurance sector, all the products and services provided by insurance companies have been brought together and customers have access to all the necessary information about products and services with one click. Artificial intelligence technologies have become one of the most important cost items in the financial services sector and are growing rapidly.

While hedge funds and HFT firms were the main users in the early stages of the emergence of these technologies in the financial sector. It is now used by many financial institutions, from banks to regulatory agencies and insurance companies. Many technological innovations such as artificial intelligence, blockchain and machine learning have emerged in the insurance sector especially in automating claims handling processes, making customer relations more effective, fraud detection and risk prevention in the last few years. It can be said that the adaptation process of the insurance sector with these technologies has been slower compared to many sectors such as healthcare, education, financial services, e-commerce and human resources. However, the multifaceted nature of this sector greatly increases the application areas of these improved technologies (2).

Artificial intelligence in the global insurance sector

The need for data processing in the insurance sector worldwide has increased dramatically and building artificial intelligence models that can accurately analyze this data and accurately predict it for months and years to come has become very important. There is a certain increase in the number of insurance policies produced due to the trend of insuring everything around the world. At this point, there is an awareness that these processes need to be digitized and automated in some way. In the market research conducted to reduce the high costs of the policy that are reflected to the consumers, it is observed that the solution is through artificial intelligence. Because it has been observed that the biggest reason for insurance companies to increase the price of the insurance policy is high-risk policies and fraud. Worldwide, 10 to 20 percent of all insurance policy and insurance transactions have been fraudulent. Artificial intelligence eliminates the risk factor by providing data analysis and documentation.

Likewise, when damage occurs, it calculates the cost of the damage by analyzing the photos taken and sent to the system and does not leave it to the initiative of a service, expert or professor. It tells which part is defective and needs to be replaced. Therefore, it eliminates the factors that cause people to make wrong decisions (2).

The insurance sector is effectively using AI in claims, policies, HR, IT and many other processes. The technology in question can reach a conclusion on a complaint in a very short period of time, taking into account policies and post-policy developments. With artificial intelligence, post-accident investigation processes are reduced from 58 minutes to 5 seconds on average. This situation provides significant benefits in terms of both labor and time costs. The accuracy of the system's results has increased over the years, making it possible to

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offer new services. It becomes possible to quickly track and analyze new customers. There are several practical applications of AI in the financial services sector, such as algorithmic trading, portfolio composition and optimization, model validation, back testing and robo-advisory, virtual customer assistants, market impact analysis, regulatory compliance, stress testing, and fraud detection. Technological advances that enable the emergence of new and innovative products in the financial services sector have created the concept of fintech. This concept generally covers various fields such as banking, payments, investments, lending, wealth management, insurance, consulting, etc. and shows the link between technology and software to provide innovative financial products and services. Considering the insurance sector, InsurTech addresses current insurance challenges and opportunities and is known as a sub-sector of FinTech. In addition to providing solutions to the problems of the insurance sector, structures with the Insure Tech concept have entered our lives to reduce the cost and risk of the insurance company, make the insured's life easier, more flexible, and make it a better experience. In the literature, the concept of innovative insurance InsurTech is defined. In this period of rapid changes and transformation, these innovative technologies are expected to bring many benefits to be able to apply analytical and innovative solutions in real life in a correct and timely manner (2).

Insurtech, or insurance technologies, means the innovative use of technology to provide insurance services and is one of the sub-fields of fintech. In general, insurtech refers to the innovative use of technology to provide, distribute and manage insurance services. This industry, with the help of big data, artificial intelligence, and the Internet of Things, collects and analyzes customer information to provide better insurance services tailored to each customer individually. The definition of insurtech can include various concepts that go far beyond a combination between insurance and technology and can include a local customer-oriented approach as well as the potential of empowering the value chain of employers or transforming established business models. This definition should be open and inclusive so that it can host new and innovative technologies that are relevant both now and in the future, therefore, all technologies of the first line of insurance innovations such as artificial intelligence, human-to-customer chatbots in distribution, as well as advanced analysis tools that seek to find suitable use cases in data-driven insurance business, should all be placed in their proper place in the definition and concept of insurtech. Traditional insurance is reactive. Its focus is not on preventing unwanted events from occurring, but on providing compensation when those events occur. On the other hand, by following a preventive approach, insurtech startups try to provide insurance products and services by creating new conditions or changing the direction of existing conditions and continuously follow up the insured's risky behavior and help reduce these risks. They support projects that provide more accurate personal insurance policies by analyzing the behavior/use of vehicles and people with IoT applications, identifying risks and minimizing risks, thus contributing to the development of the sector. In the field of insurance, you can meet many insurtech startups who want to provide solutions for the problems of this sector both at the user level and with internal processes and do significant work. The United States of America, England, Germany and the Netherlands are the countries that have made the biggest advances in the field of insurtech in the world. These start-ups are doing a huge amount of work with the support of the government and leading insurance companies (6,2).

The effects of artificial intelligence on the insurance sector

Most likely, the evolution of artificial intelligence will change the dynamics of the insurance sector, both from the point of view of the insurer and the policyholder.

Challenges and Obstacles

Strong regulations, fraud attempts, and complexity are the most common challenges in the insurance industry. In addition, information asymmetry, automation in transactions and cyber risks are also raised as challenges caused by the use of artificial intelligence in the insurance industry (2).

Information asymmetry: The parties to the insurance contract have different levels of knowledge, which is created as a result of information asymmetry. The insurer tries to predict the behavior of the insured by conducting surveys, observations and statistics. This information asymmetry leads to moral hazard and adverse selection problems. Advances in artificial intelligence and data collection have been very effective in eliminating the negative effects of this information asymmetry and conducting insurance transactions in a more comprehensive manner. Therefore, the cost of accessing information is

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minimized and information becomes a commodity that can be easily processed. Before artificial intelligence technologies became ubiquitous, the insurance sector considered all available data in the market when modeling risk. However, this data was at the level specified by potential clients or from other sources. However, with the development of artificial intelligence technologies, the data in question has become much more comprehensive, and only a few remain under the control of potential customers. In this case, insurance companies do not need to directly request the information they need during their transactions. While this situation is described as a good development in risk management and correct pricing for insurers, it may cause a loss of customer confidence. Customers may have a negative attitude towards insurance companies with the idea that insurers use relevant information in an insidious manner (2).

Automation in Transactions: Advances in artificial intelligence technology have increased the level of automation adopted in transactions conducted in the insurance sector. Previously, automation was only used in simple processes that required low decision-making skills, such as data entry, compliance checks, standardized customer communications, and managing rules-based decisions. But now, these technologies are used in almost every transaction, such as asset valuation, estimating customer insights with large-scale data analysis, personalized customer interactions (chatbots, etc.), fraud detection, and claims verification. The duration of these transactions will be significantly reduced, a process that usually takes months can be completed in minutes with artificial intelligence technologies. This results in significant cost savings for the insurer and aids in the efficiency of underwriting and claims handling.

Cyber risk (intentional or unintentional): Artificial intelligence technologies bring many benefits, but they can also lead to some inherent risks. These risks, which are also known as cyber risks, manifest themselves as a program error or malicious cyber-attacks that may occur in artificial intelligence software and cause a negative deviation in decision making. Thanks to cyber security, artificial intelligence technologies provide important assistance to users in identifying potential threats and taking timely measures against them. However, due to the malicious use of these technologies, cyber security breaches may occur and cause some systematic economic problems. Artificial intelligence is used in trauma, policy making, human resources, information technology and many other processes. This technology may result in a complaint in a very short period of time depending on policies and post-policy developments. The algorithm learns on its own and begins to make decisions. However, this raises some issues such as decision-making responsibility, security, control mechanisms, and economic or social risks. It is necessary to take appropriate measures and deal with risks transparently. Machine learning algorithms and other types of artificial intelligence technologies use training data to develop a solution for how to follow a path when faced with different situations. As additional data emerges in the process, the AI technologies in question adjust their approach iteratively. However, this creates two challenges in the area of cyber security. First, the fact that decisions are made automatically and without human participation by artificial intelligence technologies leads to the inability to identify them in case of any mistakes. Second, the reason for decisions made may not always be clear to auditors, because the decision-making techniques and data used by AI technologies are not transparent enough (2).

Opportunities

The most important opportunities for using AI technologies in the insurance sector often arise in pricing, claim processing, and fraud detection. AI technologies allow customers to provide information to a chatbot and quickly receive personalized product recommendations and suggestions. With artificial intelligence technologies that enable automatic analysis of customer profiles, commitment and pricing are instant, and many insurance products can be purchased online within minutes. In addition to the opportunities mentioned above, there are many benefits of artificial intelligence technology for the insurance industry. One of these advantages appears at the point of contact with the customer and the workforce. For example, instead of dealing with one customer, artificial intelligence technologies provide the possibility of simultaneous interaction with several customers with artificial intelligence technologies. Therefore, employees may focus on businesses that create added value. Machine learning helps the insurance industry detect suspicious claims and even search social media accounts for fraud. Using artificial intelligence technology to spot illogical trends and unusual patterns has quickly become standard for insurance companies, whether they are looking to crack down on sophisticated rings of fraudsters

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who fake car accidents or retail customers who exaggerate the value of their damaged property. If the payment industry can effectively deal with violations, this will have a significant impact on the profitability of companies operating in this field. In the United States, dishonest claims and fraud cost nearly 40 billion dollars annually, while in England, 350 cases of insurance violations are discovered every day. Artificial intelligence algorithms can detect these types of violations and separate them for further research for humans if needed. This allows insurance companies to deal with these types of problems much faster. AI in the insurance industry will only be able to provide transparency and personalization if the ethical principles associated with it are properly and firmly established (7,2).

Future trends

The insurance sector must have a very dynamic and flexible structure in order to maintain its existence against the innovations of artificial intelligence technologies. Given the differences that related innovations have created between today and tomorrow in the sector, it is expected that there will be changes in four key points: There will probably be drastic changes.

For example, considering the attitude of insurance companies, it is expected that a more active approach will be adopted in the future. While actions are initially initiated by customers, with these developments, insurance companies are likely to prevent so-called customer actions by creating a better tracking and anticipating mechanism. Also, there will be changes in products, advertising and prices, and more emphasis will be placed on individualism. While earlier the offers were set on a standard basis, in the future the offers will be set keeping in mind the needs and preferences of the customer. It is expected that the effects of artificial intelligence technologies in the insurance industry will be felt more in the next decade. These technologies, which can imitate the abilities of perception, reasoning, learning and problem solving implemented by the human mind, will change the direction of the insurance sector from "perception and correction" to "learning and prevention" (2).

In general, the impact of artificial intelligence in the future of the insurance industry, the insurance industry will undergo extensive changes in 2030. Focusing on four areas can prepare industry practitioners to face these changes.

The insurance industry, a cornerstone of economic stability, currently faces significant pressures stemming from evolving economic conditions, regulatory changes, and the shifting expectations of a new generation of customers, who, influenced by enhanced experiences in other sectors, demand innovative approaches. While technological innovation, particularly the internet and emerging technologies, holds immense promise for reshaping the insurance value chain and enhancing customer experience, the application of Artificial Intelligence (AI) within this context presents a nuanced challenge when viewed through the lens of Attrition Entrepreneurship Theory. As Farzpourmachiani M. and Farzpourmachiani A. (2024) elucidate, attrition entrepreneurship describes activities that, despite generating income, fail to contribute to broader societal wealth and may even be economically detrimental, often characterized by a neglect of genuine innovation and intellectual property. Given that current AI systems, while powerful in processing information and supporting decision-making by simulating human thought, are fundamentally rule-based and have not yet achieved intelligence comparable to human intuition and adaptability, their implementation in a pressured insurance environment could inadvertently foster such attrition. If AI adoption primarily focuses on optimizing existing, challenged processes or exploiting current data for short-term gains, rather than driving truly novel solutions in risk management or service delivery, it risks merely recycling existing resources. This could lead to a scenario where "entrepreneurial" AI applications generate profit by refining established models but fall short of creating new value or protectable intellectual assets, thereby hindering long-term economic prosperity and genuine societal benefit within the insurance sector (8).

4 trends related to artificial intelligence that will shape the insurance industry:

1- The abundance of accessible data from connected devices

For some time now, sensor-equipped equipment has been used everywhere in industrial settings; But in the coming years, we will see a large growth in the number of devices connected to consumer appliances. The prevalence of existing devices (such as cars, fitness trackers, home assistants, smartphones and smartwatches) will continue to increase, and new options such as clothing, glasses and lenses, home appliances, medical devices and footwear will also join the field. The wealth of new information generated by these devices will help insurers understand their

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customers more deeply. The result of this will be the provision of newer products, more personalized pricing and an increase in the range of instant services. For example, a wearable device that is connected to the database can record the daily activities of each person and calculate the person's risk tolerance, the probability of possible accidents and their severity through this data.

2- Expanding the use of physical robots

In recent years, we have witnessed brilliant achievements in robotics knowledge. This innovation affects the way humans interact with the surrounding world. In the future, incremental production, which is also known as 3D printing, will be the cause of fundamental changes in the field of production and commercial insurance products. When we reach 2026, we will see that the construction of houses with 3D printing technology has become very prosperous; Insurers should know how this phenomenon will affect the risk assessment. In addition, in the next decade, unmanned and programmable aircraft, driverless cars, autonomous agricultural equipment and robotic surgeons will make significant progress and become a part of everyday life. By 2030, the proportion of self-driving vehicles on the roads will exceed 25%. Insurers should be aware of the increasing presence of robots in the daily lives of people and different industries and study how it affects risk pools, the level of customer expectations, and new channels and products.

3- Open text and open data ecosystem

At the same time as data becomes widespread, open-source protocols will also expand and data will be shared among different industries. Diverse public and private entities will come together and create an ecosystem where data is shared for multiple uses. It should be noted that this data sharing will take place under the supervision and security frameworks. For example, wearables data will be sent directly to insurers, and home and car data will be accessible through Amazon, Apple, Google and a number of consumer device manufacturers.

4- Advancing in cognitive technologies

Convolutional neural networks and other deep learning technologies, which are currently used for the purpose of processing images, audio and unstructured texts, will be developed and include a wide range of applications. These cognitive technologies, which are modeled to some extent on the ability of the human mind for analysis and learning, will become a standard method in processing large and complex data streams. These data streams will be generated by the active insurance products that are related to the activities and behavior of the individuals. With the increasing commercialization of these types of technologies, insurers will have access to models that are continuously learning and adapting to the world around them (6).

II. CONCLUSION

The process of digital transformation, accelerated by the emergence of digital technologies such as blockchain, the Internet of Things, and artificial intelligence, has significantly increased the number of digital investments in the insurance sector, as in all sectors. In order to meet customer expectations and keep up with these developments, by applying promising artificial intelligence technologies, insurance companies can make their business processes more efficient. Fraud detection can also be done by using chatbots and some fraud analytics. In addition, while these technologies provide a significant reduction in the sector's operating costs, they provide a large increase in profitability. In the insurance sector, where the risk is high, most of the work is done by people, which is a factor that increases the error rate. It is believed that as a result of the increasing use of artificial intelligence by insurance companies, human-based errors will be reduced and the income will increase accordingly. It is also expected that artificial intelligence will help insurance companies in creating new markets and artificial intelligence technologies will benefit insurance companies in the coming years in terms of renewal and growth in the insurance sector like any sector. Finally, it is emphasized that the differentiation of artificial intelligence in terms of new products and services may also be the reason for the insurance company's preference for customers. Considering the overall financial services industry; It can be said that banks are at the top of the sectors that adapted the fastest conditions to the transformation process, but the insurance sector is still in the initial stage and at a point in sync with the so-called process. According to the future forecasts of the relevant sector, the insurance sector is expected to achieve an average revenue growth of 17% by 2022. At this stage, insurance companies must revise their current approaches and adapt to the digital transformation as quickly as possible in order to use the opportunities resulting from this transformation and eliminate the problems. Thanks to artificial

intelligence technologies, insurance companies may acquire different skills in solving complex problems, developing new products and entering new markets.

REFERENCES:

[1]. KM, RM. Innovations and New Technologies in the Insurance Industry. Development Quarterly., Industry Technology, 2019; (44): 86-69.
[2]. CI. The Effects of Artificial Intelligence on the Insurance Sector: Emergence, Applications, Challenges, and Opportunities. Economics and Finance, 2022; (2): 225-241.
[3]. KE, MN, HA. A review of the applications of artificial intelligence in detecting and combating the COVID-19 pandemic, (3) Journal of Paramedical Sciences and Public Health, 1400; (16): 65-53.
[4]. DA, FN, AA, AR. Application of Artificial Intelligence in Predicting Women's Competencies in the Workplace. Cultural and Educational Quarterly of Women and Family, 2017.
[5]. ZH. Application of Artificial Intelligence Systems in Management Decision Making. First International Conference on Management, Economics, Accounting and Educational Sciences. 2015.
[6]. BA. Development of the Insurance Industry with the Help of Artificial Intelligence and the Internet of Things. The 25th National Conference on Insurance and Development, Tehran. 2018.
[7]. HM, KM. Applications of Artificial Intelligence and its Impact on Increasing Insurance Penetration. 26th National Conference on Insurance and Development, Tehran. 2019.
[8]. Farzpourmachiani M., Farzpourmachiani A. “Attrition Entrepreneurship Theory”, Tubittum, 2024; 80:28, ISSN: 2822-5295, Available from: www.tubittum.com